

Performance Review Body Monitoring Report 2022

Annex II – Member States’ detailed analysis for experts

The 2022 monitoring consists of five reports:

1. PRB Monitoring Report 2022
2. Annex I – Member States’ factsheets
3. **Annex II – Member States’ detailed analysis for experts**
4. Annex III – Safety report
5. Annex IV – Investments report

October 2023



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1 Introduction

- o This document is Annex II to the PRB Monitoring Report 2022. It presents a summary of the Union-wide and local performance in 2022 for each key performance indicator (KPI), followed by detailed analyses at Union-wide and local levels in each of the four key performance areas.
- o It has been prepared in a collaboration between the Performance Review Unit (PRU) of Euro-control and the European Union Aviation Safety Agency (EASA).
- o The legal basis for monitoring the performance of the air traffic management in the Single European Sky (SES) area during the third reference period (RP3) is defined in Articles 11, 12, 14, 15 and 16 of Regulation (EC) No 549/2004 (the Framework Regulation), and in the Implementing Regulation (EU) No 2019/317 (the Performance and Charging Regulation).
- o Due to the outbreak of the COVID-19 pandemic, the European Commission adopted exceptional measures for RP3 (Commission Implementing Decision (EU) 2020/1627 of 3 November 2020) and adopted revised Union-wide targets for RP3 in June 2021 (Commission Implementing Decision (EU) 2021/891 of 2 June 2021).
- o The Member States submitted their draft performance plans containing revised targets for RP3 ensuring consistency with the revised Union-wide performance targets in October-November 2021.
- o The European Commission issued decisions on consistency and inconsistency of the performance targets of the plans pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council on 13 April 2022, as follows: Commission Decisions (EU) 2022/764 to 2022/779 of 13 April 2022 on the consistency of the performance targets contained in the draft performance plan submitted by Croatia, Finland, Ireland, Portugal, Slovakia, Lithuania, Denmark, Estonia, Czech Republic, Italy, Austria, Hungary, Spain, Slovenia, Bulgaria and Poland;
- o Commission Implementing Decision (EU) 2022/728 of 13 April 2022 on the inconsistency of certain performance targets contained in the draft national and functional airspace block performance plans submitted by Belgium, Germany, Greece, France, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Romania and Sweden;
- o Commission Implementing Decision (EU) 2022/780 of 13 April 2022 on the inconsistency of certain performance targets contained in the draft functional airspace block performance plan submitted by Switzerland.
- o Member States with inconsistent targets have submitted revised draft performance plans to the European Commission in July 2022 (as per Article 14(3) of (EU) No 2019/317).
- o The European Commission issued decisions on consistency of the performance targets of the revised plans pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council in December 2022, as follows:
 - o Commission Decision (EU) 2022 /2421 to 2022/2426 of 5 December 2022 on the consistency of the performance targets contained in the draft revised performance plan submitted by Greece, Cyprus, Sweden, Romania, Malta and Latvia;
 - o Commission Decision (EU) 2023 /176 to 2023/179 of 14 December 2022 on the consistency of the performance targets contained in the draft revised performance plan submitted by France, Germany, Switzerland and the Netherlands.
- o Additionally, due to Russia's war of aggression against Ukraine and the consequent decrease in traffic resulting from it, Lithuania, on 26 August 2022, and Estonia, on 26 September 2022, requested permission from the Commission to enter the process of performance plan revision (as per Article 18 of (EU) No 2019/317). Through Decision (EU) 2022/2494 of 9 December 2022 the Commission approved the request submitted by Lithuania for the revision of its performance targets for the third reference period. Differently, as a result of the Estonian decision to withdraw the performance plan revision request, the final RP3 performance targets for Estonia remain the one included in the performance plan submitted in October-November 2021

and deemed consistent by the European Commission through Decisions (EU) 2022/764 to 2022/779 of 13 April 2022.

- o Finally, following the submission of a revised Belgium-Luxembourg draft performance plan, the Commission has decided to initiate the detailed examination set out in Article 15(3) of Implementing Regulation (EU) 2019/317 in respect of the cost efficiency performance targets for the Belgium-Luxembourg en route charging zone. The European Commission, as per Article 15(5) of (EU) No 2019/317, issued a decision on 16 June 2023 (Commission Implementing Decision (EU) 2023/1336) setting out the corrective measures to be taken by Belgium-Luxembourg, in accordance with the third subparagraph of point (c) of Article 11(3) of Regulation (EC) No 549/2004. Member States with consistent targets, adopted and published the final versions of their respective performance plans in 2022.

2 Summary of the performance in 2022 at Union-wide level

Table 1 shows the Union-wide performance in 2022 against the targets for the Key Performance Areas of Environment and Capacity.

| KPI (UNION-WIDE) | 2022 | | Actual vs target |
|--|-----------|-------------|------------------|
| | EU TARGET | PERFORMANCE | |
| ENVIRONMENT | | | |
| KEA (horizontal en route flight efficiency – actual route) | 2.37% | 2.96 % | ✘ |
| CAPACITY | | | |
| Average en route air traffic flow management (ATFM) delay per flight (Minutes) | 0.50 | 1.69 | ✘ |

Table 1 - Actual performance at Union-level (2022) – Environment and Capacity

Table 2 presents the actual real en route unit cost (AUC) recorded at Union-wide level in 2022 compared to the assumption in terms of determined real en route unit cost (DUC) underpinning the Union-wide cost-efficiency target from Commission Implementing Decision (EU) 2021/891 of 2 June 2021.

| KPI (UNION-WIDE) | 2022 | | Actual vs target |
|---|-----------|-------------|------------------|
| | EU TARGET | PERFORMANCE | |
| COST-EFFICIENCY | | | |
| Real en route unit cost for en route ANS (€ ₂₀₁₇) | 67.99 | 55.31 | -18.6% |

Table 2 - Actual performance at Union-level (2022) – Cost-efficiency

Table 3 shows the actual unit cost incurred by users for en route and terminal air navigation services at Union level compared to the average DUC in euro in nominal terms in 2022.

| PI (UNION-WIDE) | 2022 | | Actual vs target |
|---|--------|--------|------------------|
| | DUC | AUCU | |
| COST-EFFICIENCY | | | |
| Actual unit cost incurred by users for en route (€) | 62.88 | 64.41 | +2.4% |
| Actual unit cost incurred by users for terminal (€) | 217.38 | 211.94 | -2.5% |

Table 3 - Actual performance at Union-level (2022) – Cost-efficiency

3 Summary of the performance in 2022 at local level (National)

Environment and capacity:

Table 4 shows the operational performance in 2022 against the targets for the Key Performance Areas of Environment and Capacity at local level.

| State | Targets | | | | | | | | |
|----------------|------------------------|--------|---|----------------------------------|--------|---|---------------------------------|--------|---|
| | Flt Efficiency (% KEA) | | | En route delay (minute / flight) | | | Arrival delay (minute / flight) | | |
| | Target | Actual | | Target | Actual | | Target | Actual | |
| Austria | 1.96 | 2.09 | ✘ | 0.17 | 0.07 | ✓ | 0,87 | 0,15 | ✓ |
| Belgium | | | | | | | | | |
| Luxembourg | 3.05 | 3.53 | ✘ | 0.17 | 0.13 | ✓ | 1,08 | 0,11 | ✓ |
| Bulgaria | 2.25 | 3.28 | ✘ | 0.08 | 0.00 | ✓ | 0,05 | 0,10 | ✘ |
| Croatia | 1.46 | 1.49 | ✘ | 0.16 | 0.57 | ✘ | N/A | N/A | |
| Cyprus | 3.84 | 4.21 | ✘ | 0.16 | 0.00 | ✓ | N/A | N/A | |
| Czech Republic | 2.05 | 2.55 | ✘ | 0.11 | 1.45 | ✘ | 0,40 | 0,13 | ✓ |
| Denmark | 1.14 | 1.23 | ✘ | 0.06 | 0.00 | ✓ | 0,10 | 0,02 | ✓ |
| Estonia | 1.22 | 5.46 | ✘ | 0.03 | 0.00 | ✓ | 0,00 | 0,00 | ✓ |
| Finland | 0.88 | 3.28 | ✘ | 0.05 | 0.00 | ✓ | 0,28 | 0,06 | ✓ |
| France | 2.83 | 3.28 | ✘ | 0.25 | 1.49 | ✘ | 0,40 | 0,62 | ✘ |
| Germany | 2.30 | 2.76 | ✘ | 0.27 | 2.27 | ✘ | 0,45 | 0,28 | ✓ |
| Greece | 1.92 | 2.33 | ✘ | 0.14 | 0.15 | ✘ | 0,70 | 1,64 | ✘ |
| Hungary | 1.49 | 2.17 | ✘ | 0.11 | 0.54 | ✘ | 0,05 | 0,00 | ✓ |
| Ireland | 1.13 | 1.12 | ✓ | 0.03 | 0.00 | ✓ | 0,20 | 0,15 | ✓ |
| Italy | 2.67 | 2.98 | ✘ | 0.11 | 0.15 | ✘ | 0,33 | 0,07 | ✓ |
| Latvia | 1.25 | 6.26 | ✘ | 0.03 | 0.00 | ✓ | 0,02 | 0,00 | ✓ |
| Lithuania | 1.92 | 12.21 | ✘ | 0.02 | 0.00 | ✓ | N/A | N/A | |
| Malta | 1.80 | 1.90 | ✘ | 0.01 | 0.00 | ✓ | 0,01 | 0,00 | ✓ |
| Netherlands | 2.62 | 3.04 | ✘ | 0.14 | 0.04 | ✓ | 1,60 | 1,78 | ✘ |
| Norway | 1.55 | 1.32 | ✓ | 0.08 | 0.01 | ✓ | 0,50 | 0,10 | ✓ |
| Poland | 1.65 | 4.79 | ✘ | 0.12 | 1.30 | ✘ | 0,21 | 0,04 | ✓ |
| Portugal | 1.80 | 1.52 | ✓ | 0.13 | 0.67 | ✘ | 1,91 | 2,31 | ✘ |
| Romania | 2.05 | 3.36 | ✘ | 0.04 | 0.00 | ✓ | 0,39 | 0,01 | ✓ |
| Slovakia | 2.13 | 4.04 | ✘ | 0.07 | 0.00 | ✓ | N/A | N/A | |
| Slovenia | 1.55 | 1.72 | ✘ | 0.09 | 0.00 | ✓ | N/A | N/A | |
| Spain | 3.08 | 3.32 | ✘ | 0.20 | 0.30 | ✘ | 0,66 | 0,48 | ✓ |
| Sweden | 1.05 | 1.70 | ✘ | 0.07 | 0.04 | ✓ | 0,15 | 0,09 | ✓ |
| Switzerland | 3.95 | 4.51 | ✘ | 0.19 | 0.21 | ✘ | 1,15 | 0,74 | ✓ |

Table 4 - Actual performance at local level (2022) – Environment and Capacity

N/A: No airports included in the Performance Plan / Indicator not monitored at FAB level.

En route Capacity:

Eleven States did not achieve their local target for en route capacity performance in 2022: Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Spain and Switzerland.

The Network Manager initiated a range of measures (eNM/S22) to mitigate continuing capacity short-falls in Karlsruhe UAC and capacity reductions in Reims UAC due to the implementation of the 4-flight ATM system. These measures accounted for a significant part of the delays in France, Germany and surrounding States (Spain, Poland, Czech Republic, Hungary & Italy).

The war in Ukraine was credited for significant ATFM delays in Germany, Poland and Hungary due to military restrictions of airspace and increased traffic demand.

In Portugal, almost 80% of en route ATFM delays were attributed to the implementation of the new TOPSKY ATM system.

Delays attributed to adverse weather were an increasing factor in several States including, Italy, Spain, Switzerland.

Cost-efficiency:

Figure 1 (for en route) and Figure 2 (for terminal) provide details per charging zone of the AUC for 2022 against the DUC in real terms in €2017.

| 2022 AUC vs DUC (€2017) for en route | | | |
|--------------------------------------|--------------|----------------------------|-------------------------|
| En route charging zones | AUC vs DUC | Actual vs determined costs | Actual vs forecast TSUs |
| Croatia | -35.7% | -9.4% | 40.9% |
| Hungary | -33.8% | -12.9% | 31.6% |
| Slovakia | -26.1% | -9.9% | 21.9% |
| Bulgaria | -25.1% | -6.8% | 24.5% |
| Portugal Continental | -20.7% | -11.6% | 11.4% |
| Greece | -16.1% | -8.1% | 9.5% |
| Italy | -15.7% | -5.2% | 12.4% |
| Slovenia | -15.3% | -5.9% | 11.1% |
| Spain Canarias | -14.9% | 7.6% | 26.5% |
| Ireland | -14.3% | -9.1% | 6.1% |
| France | -14.2% | -4.5% | 11.2% |
| Czech Republic | -12.3% | -13.6% | -1.4% |
| Netherlands | -8.8% | -9.1% | -0.3% |
| Austria | -8.3% | -0.9% | 8.1% |
| Norway | -7.0% | -5.9% | 1.1% |
| Latvia | -6.0% | -6.0% | -0.1% |
| Belgium-Luxembourg | -5.3% | -5.8% | -0.5% |
| Romania | -3.1% | 0.9% | 4.1% |
| Cyprus | -3.1% | -5.7% | -2.7% |
| Lithuania | -2.8% | -1.8% | 1.0% |
| Malta | 1.4% | -16.6% | -17.8% |
| Switzerland | 2.1% | -1.1% | -3.1% |
| Germany | 4.6% | -4.0% | -8.2% |
| Spain Continental | 8.7% | 7.6% | -1.0% |
| Sweden | 11.4% | 1.1% | -9.3% |
| Denmark | 12.7% | -0.7% | -11.9% |
| Poland | 15.0% | -9.8% | -21.6% |
| Finland | 26.0% | -15.8% | -33.1% |
| Estonia | 50.0% | -11.5% | -41.0% |
| Union-Wide | -7.4% | -3.9% | 3.8% |

Figure 1 - Actual en route unit costs vs the DUC for 2022

| 2022 AUC vs DUC (€2017) for terminal | | | |
|--------------------------------------|-------------|----------------------------|--------------------------|
| Terminal charging zone | AUC vs DUC | Actual vs determined costs | Actual vs forecast TNSUs |
| Malta | -34.0% | -36.6% | -3.9% |
| Hungary | -19.0% | -8.7% | 12.7% |
| France zone 1 | -18.2% | -14.0% | 5.1% |
| Portugal | -18.0% | -8.7% | 11.3% |
| Netherlands | -17.6% | -10.4% | 8.7% |
| Italy zone 2 | -17.4% | -5.4% | 14.5% |
| Poland zone 2 | -10.6% | 1.7% | 13.7% |
| Sweden | -7.0% | -3.8% | 3.4% |
| Czech Republic | -6.8% | -12.0% | -5.6% |
| Belgium Brussels | -3.6% | -4.6% | -1.1% |
| Greece | -3.3% | -4.8% | -1.5% |
| Switzerland | -2.1% | -8.6% | -6.6% |
| Norway | -2.0% | 5.3% | 7.5% |
| Luxembourg | -1.3% | -0.5% | 0.8% |
| Poland zone 1 | 0.6% | -4.0% | -4.6% |
| Ireland | 3.4% | 5.7% | 2.3% |
| Denmark | 3.9% | -4.6% | -8.2% |
| Estonia | 6.0% | 6.2% | 0.2% |
| Spain | 6.6% | 6.3% | -0.3% |
| Italy zone 1 | 7.4% | -3.2% | -9.8% |
| France zone 2 | 7.8% | -2.7% | -9.7% |
| Romania | 11.3% | 5.2% | -5.5% |
| Finland | 16.1% | -12.6% | -24.7% |
| Latvia | 17.4% | 2.6% | -12.6% |
| Germany | 19.3% | -0.5% | -16.6% |
| Austria | 19.6% | 3.6% | -13.4% |
| Union-Wide | 0.6% | -2.9% | -3.5% |

Figure 2 - Actual terminal unit costs vs the DUC for 2022

Table 5 (for en route) and Table 6 (for terminal) provide details per charging zone of the actual unit cost incurred by users for 2022 against the DUC in nominal €.

| En route charging zones | DUC (€) | AUCU (€) | AUCU vs. DUC (%) |
|-------------------------|--------------|--------------|------------------|
| Belgium-Luxembourg | 118.72 | 119.54 | 0.7% |
| Germany | 71.64 | 79.70 | 11.3% |
| Estonia | 36.85 | 66.39 | 80.2% |
| Finland | 50.89 | 68.04 | 33.7% |
| Netherlands | 95.03 | 101.15 | 6.4% |
| Ireland | 31.05 | 30.93 | -0.4% |
| Denmark | 66.31 | 74.37 | 12.1% |
| Norway | 58.73 | 55.12 | -6.2% |
| Poland | 46.89 | 61.12 | 30.3% |
| Sweden | 79.82 | 84.22 | 5.5% |
| Latvia | 43.03 | 44.43 | 3.3% |
| Lithuania | 58.96 | 58.65 | -0.5% |
| Spain Canarias | 69.42 | 48.44 | -30.2% |
| Bulgaria | 36.90 | 33.11 | -10.3% |
| Cyprus | 32.76 | 33.36 | 1.8% |
| Croatia | 54.61 | 41.73 | -23.6% |
| Spain Continental | 55.60 | 70.16 | 26.2% |
| France | 79.85 | 77.04 | -3.5% |
| Greece | 29.41 | 28.67 | -2.5% |
| Hungary | 40.72 | 33.58 | -17.5% |
| Italy | 76.50 | 74.13 | -3.1% |
| Slovenia | 65.05 | 64.31 | -1.1% |
| Czech Republic | 68.50 | 73.65 | 7.5% |
| Malta | 29.30 | 34.39 | 17.4% |
| Austria | 67.16 | 67.45 | 0.4% |
| Portugal Continental | 41.96 | 38.24 | -8.9% |
| Romania | 44.27 | 45.42 | 2.6% |
| Switzerland | 115.51 | 107.89 | -6.6% |
| Slovakia | 74.41 | 68.58 | -7.8% |
| Union-wide | 62.88 | 64.41 | 2.4% |

Table 5 - Actual en route unit cost incurred by users vs plan for 2022

| Terminal charging zones | DUC (€) | AUCU (€) | AUCU vs. DUC (%) |
|-------------------------|---------------|---------------|------------------|
| Belgium Brussels | 287.34 | 236.58 | -17.7% |
| Germany | 229.98 | 278.54 | 21.1% |
| Estonia | 137.76 | 127.88 | -7.2% |
| Finland | 165.79 | 225.77 | 36.2% |
| Netherlands | 238.66 | 246.52 | 3.3% |
| Ireland | 169.21 | 164.74 | -2.6% |
| Denmark | 168.76 | 186.19 | 10.3% |
| Luxembourg | 275.22 | 243.25 | -11.6% |
| Norway | 197.92 | 181.06 | -8.5% |
| Poland zone 1 | 119.54 | 133.20 | 11.4% |
| Poland zone 2 | 257.05 | 258.28 | 0.5% |
| Sweden | 181.17 | 180.34 | -0.5% |
| Latvia | 161.51 | 174.54 | 8.1% |
| Spain | 123.51 | 27.02 | -78.1% |
| France zone 1 | 119.67 | 191.48 | 60.0% |
| France zone 2 | 374.25 | 271.69 | -27.4% |
| Greece | 165.55 | 144.44 | -12.8% |
| Hungary | 339.32 | 331.37 | -2.3% |
| Italy zone 1 | 185.77 | 211.31 | 13.8% |
| Italy zone 2 | 227.73 | 218.92 | -3.9% |
| Czech Republic | 305.15 | 322.31 | 5.6% |
| Malta | 185.71 | 190.37 | 2.5% |
| Austria | 242.02 | 301.37 | 24.5% |
| Portugal | 155.03 | 145.82 | -5.9% |
| Romania | 294.58 | 316.41 | 7.4% |
| Switzerland | 425.94 | 430.65 | 1.1% |
| Union-wide | 217.38 | 211.94 | -2.5% |

Table 6 - Actual terminal unit cost incurred by users vs plan for 2022

4 Cost-efficiency monitoring at State level: Reader's Guide

4.1 Introduction

- 4.1.1 The objective of this section is to facilitate the understanding of the analysis made in the cost-efficiency monitoring reports at State level.
- 4.1.2 The source of the data used for the cost-efficiency monitoring are the June 2023 en route and terminal Reporting Tables provided by the States for each charging zone (CZ). These have been complemented by the updates of ANSPs costs exempted provided in the NSA reports on the verification of cost risk sharing for the year 2022 due to be submitted by 1 September 2023.
- 4.1.3 The analysis is structured into three main parts: en route charging zone(s), terminal charging zone(s) and gate-to-gate ANS cost-efficiency monitoring for all the charging zones covered by the SES performance scheme under the responsibility of the State. Common templates and analytical frameworks are used for both en route and terminal ANS, and for the States having several en route (Spain) or terminal (Italy, France and Poland) charging zones, the framework is replicated for each charging zone.
- 4.1.4 Graphs, tables and comments are displayed into "boxes", with each box focusing on a particular aspect of the monitoring analysis. Section 1.2 below provides explanations on the content of each box constituting the en route and the terminal analysis. Section 1.3 presents the content of the gate-to-gate analysis.

4.2 En route and terminal ANS analysis

1. Contextual economic information

Box 1 presents information on:

- The State's share in SES ANS actual costs in 2022;
- The national currency and the exchange rates against the € (source: Average of the daily "Closing Rates" calculated by Reuters based on daily BID rates) for the years:
 - 2017: used for the conversion in real €2017;
 - 2022: used for the conversion of 2022 costs into €;
- The date of issue of the performance plan and whether or not it was found consistent with the references of the relevant EC decision. Information on the adoption and submission of final performance plans or revised performance plans where applicable.
- For Terminal Charging Zones, box 1 also indicates the number of airports in the TCZ (with a classification per number of air transport movements).

2. Monitoring of the en route (or terminal) determined unit costs (DUC) at charging zone level

Box 2 contains standard text identical for all States, explaining the notions of determined unit costs (DUC) and actual unit cost (AUC).

3. En route (or terminal) actual unit cost (AUC) vs en route (or terminal) determined unit cost.

Box 3 identifies whether the AUC is lower (improvement of the performance indicator) or higher (deterioration of the performance indicator) than the DUC target set in the Performance Plan (PP), and what were the drivers for the improvement or deterioration (costs, traffic).

It provides transparency on the different steps required to undertake the monitoring of the DUC, for the calendar year 2022, showing:

- The planned performance (based on RP3 PP data);
- The actual performance (based on the June 2023 Reporting Tables for all RP3 years);
- And the differences between actual and planned performance.

To ensure consistency with the determined costs data provided in the adopted PP, actual costs are expressed in 2017 prices. Planned and actual inflation indices are also shown in box 3.

4. Focus on en route (or terminal) DUC monitoring at charging zone level

Box 4 contains graphical summaries (right-hand side) of the differences in traffic (service units), costs by entity, and costs by nature for the main ANSP as well as comments (left-hand side) on the situation observed for the calendar year 2022.

The comments provide an analysis and general conclusions on the 2022 DUC at State/Charging zone level, including:

- Comparison between the AUC and the DUC;
- Comparison of actual costs and traffic to the costs and traffic in the PP;
- Comments on the application of the traffic risk sharing mechanism in the State;
- Comments on which entity is driving the difference between actual and planned costs, and on which drivers for the main ANSP.

For the purpose of analysing the differences between determined and actual costs, as presented in box 4, all cost items are expressed in real 2017 terms on the basis of the inflation index computed using the planned/actual inflation rates provided by States in the en route and terminal reporting tables. Specifically, as provided by article 26 of Regulation (EU) 2019/317, costs incurred by competent authorities, qualified entities and EUROCONTROL costs are not corrected for inflation. Similarly, for all the ANSPs and METSPs, depreciation costs and the cost of capital are not corrected for inflation.

5. Monitoring of the en route (or terminal) actual unit cost for users (AUCU) at charging zone level

Box 5 contains standard text identical for all States, explaining the notion of actual unit cost for users (AUCU).

6. En route (or terminal) actual unit cost for users (AUCU) at charging zone level

Box 6 shows all the adjustments required to calculate the AUCU for the calendar year 2022, starting from the DUC (in national currency in nominal terms). This reflects the unit cost that airspace users genuinely incur in respect of the activities performed in 2022.

The bar on the left-hand side of the chart presents the 2022 DUC and each bar moving to the right shows the contribution (in nominal terms) of each adjustment to reach the 2022 AUCU (the last bar on right-hand side of the chart). The detailed figures, both in national currency and in € are given in the table on the right-hand side.

The rationale for the different adjustments, and the methodology used for their conversion into € is provided below:

- Inflation adjustment: to reflect the impact of higher/lower inflation index in 2022 which will be charged/reimbursed to airspace users in year 2024; The adjustment is converted into € at the 2022 average exchange rate.
- Costs reported by the State as being exempted from cost-sharing in accordance with Art. 28(3) to 28(6) of Regulation (EU) 2019/317 (i.e. costs exempt from cost-sharing): to reflect the elements of the cost sharing mechanism, where differences between determined costs included in the performance plan and actual costs for 2022 are shared between air navigation service providers and airspace users, in accordance with the provisions of Article 28 (EU) 2019/317 and will be charged/reimbursed to airspace users in future years' unit rates. The adjustment is converted into € at the 2022 average exchange rate.
- Traffic risk sharing adjustment: to reflect the gain/loss in revenues due to higher/lower traffic than planned in 2022, which will be reimbursed/charged to airspace users in 2024. The adjustment is converted into € at the 2022 average exchange rate.
- Traffic adjustment (for costs not subject to traffic risk sharing): reflects the fact that, for the costs not subject to traffic risk sharing, over/under recoveries due to higher/lower traffic than planned in 2022 will be fully reimbursed/charged to airspace users in 2024. The adjustment is converted into € at the 2022 average exchange rate.
- Traffic adjustment on adjustments: Left blank. The traffic adjustment on adjustments for 2022 relates to adjustments that have already been taken into account in full in the AUCU for the current year (i.e. other revenues or cross-financing between charging zones that relate to years 2022) or previous years (i.e. adjustments from the combined year 2020-2021). As a result, the traffic adjustment is not considered, in order to avoid double counting.
- Financial incentives: Not applicable for 2022.
- Modulation of charges: to reflect the adjustment relating to 2022 that will be fully reimbursed/charged to airspace users in 2024 to ensure that the modulation of charges in respect of points (a) to (c) of Article 32 (1) of Regulation (EU) 2019/317 does not result in any overall change in annual revenue for the ANSP compared to the situation where charges would not have been modulated.

- **Temporary UR:** Left blank. The difference in revenue due to the application of the temporary unit rates in 2022 is already reflected in the DUC presented in the AMR for year 2022 (DUC to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.
- **Cross-financing:** to reflect the amounts of cross-financing between en route charging zones, or between terminal charging zones, in accordance with point (e) of Article 15(2) of Regulation (EC) No 550/2004;
- **Other revenues:** to reflect the deduction of “other revenues” obtained in 2022. The adjustment is converted into € at the 2022 average exchange rate.
- **Application of a lower unit rate:** to reflect the actual reduction per service units given to airspace users through the application of a lower unit rate as foreseen in Art. 29(6) of (EU) 2019/317. The adjustment is converted into € using the 2022 average exchange rates.

For the calculation of the AUCU in box 6, all cost categories listed above are divided by the actual TSUs for the calendar year 2022.

7. En route (or terminal) costs exempted from cost sharing

Box 7 contains a table presenting the costs reported by the State as being exempted from cost-sharing (Differences between determined and actual costs referred to in (EU) 2019/317 Art. 28(4) to 28(6)). Costs are listed by item (in nominal national currency, in nominal €, as well per actual service unit in nominal national currency and in nominal €). The total costs exempted from cost-sharing are summed at the bottom of the table. If the total is negative, the costs are to be recovered from airspace users in future years; if costs are positive, they are to be reimbursed. These data are taken from the June 2023 en route and terminal Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the “NSA Report on the verification of cost risk sharing for the year 2022” submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs). It is to be noted that these amounts may still be updated in the context of the compliance review process in line with Art. 29(3) of (EU) 2019/317.

8. En route (or terminal) regulatory result at charging zone level

Box 8 presents the share of the regulatory result (RR) in the AUCU at charging zone level. For this, the AUCU is considered before the deduction of the other revenues (financing from other sources) in order to show a fair view of the share and to be consistent with the computation of the RR itself (described in boxes 10 to 14).

The RR is shown separately for each ANSP/METSP, in nominal national currency, in nominal €, as well per actual service unit in nominal national currency and in nominal €. For the NSAs and Eurocontrol costs, it is considered that there is no RR since the amounts charged *in fine* to users are their actual costs, through the cost-exempt and traffic adjustment mechanisms.

The RR in percentage of the AUCU corresponds to the total RR for the charging zone divided by the AUCU before the deduction of the other revenues. It indicates the share of “margin” contained in the charges paid *in fine* by the airspace users.

9. Focus on en route (or terminal) AUCU monitoring at charging zone level

Box 9 summarises the conclusions on the AUCU for the calendar year 2022, its components and comparison with the DUC. It also refers to the share of the regulatory result in the AUCU.

10. Monitoring of the en route (or terminal) regulatory results (RR)

Box 10 contains standard text identical for all States, explaining the notion of regulatory result (RR), including the net gain/loss.

11. Net gain/loss for the main ANSP for the en route (or terminal) activity at charging zone level

Box 11 focuses on the main ANSP net gain/loss on ANS activities for the calendar year 2022. A graphical illustration of this analysis is also shown on the left-hand side of box 13. The main ANSP is the most significant contributor to the State’s costs and the only (or main) entity subject to costs and traffic risk sharing mechanisms foreseen by the performance and charging regulation ((EU) 2019/317).

The net gain/loss calculated in the bottom line of box 11 results from the combination of three distinct items:

1. The outcome of the cost-sharing mechanism to be retained by the ANSP, including:
 - the difference between determined and actual costs to be retained/borne by the ANSP;
 - the impact of the inflation adjustment to be charged/reimbursed to airspace users;
 - the impact of the costs exempt from cost-sharing that are foreseen to be recovered from or reimbursed to

users (as per the “NSA Report on the verification of cost-sharing for the calendar year 2022” submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317).

- The outcome of the traffic risk sharing mechanism. For this, the following elements are taken into account:
 - o The difference in total service units (actual vs. PP) in percentage terms.
 - o The determined costs subject to traffic risk-sharing of the main ATSP for the calendar year 2022.
 - o The features of traffic risk sharing mechanism (standard as applied by all Member States): if actual traffic is $\pm 2\%$ compared to the PP, the gain/loss in revenues is borne entirely by the ANSP; between 2% and 10% (higher or lower) than the PP it is shared between the ANSP (30%) and airspace users (70%); and if the difference between actual and planned traffic exceeds $\pm 10\%$, the gain/loss relating to traffic beyond $\pm 10\%$ is entirely borne by the airspace users and has therefore no impact on the ANSP gain/loss from traffic risk sharing.
- 2. The outcome of the financial incentive mechanism for capacity and environment targets is set to zero, as this mechanism is not applicable for 2022.

The computation of the net gain/loss is presented in nominal national currency. The total net gain/loss is also presented in nominal € on the basis of the 2022 average exchange rate.

12. Regulatory result (RR) for the main ANSP at charging zone level

Box 12 presents the computation of the regulatory result (RR) for the main ANSP for the calendar year 2022. It is important to emphasise that this analysis focuses on the ANSP results relating to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Indeed, the latter include revenues from other activities (e.g. consultancy services) which are not covered by the SES performance and charging scheme, as well as revenues and costs pertaining to other years of activity.

The RR combines two elements:

- The return on equity (RoE) in value embedded in the cost of capital; and
- The main ANSP net gain/loss on ANS activities (see box 11).

Box 12 is structured in two parts.

- A first table presents the computation of the ex-ante RR for the charging zone, consisting in the RoE in value included in the determined cost of capital for the main ANSP from the RP3 PP. For an ANSP which is 100% financed through debt, the ex-ante RR will be null, while for an ANSP which 100% financed through equity, the entire cost of capital will be considered as the ex-ante RR.
- The second table shows the computation of the ex-post RR, comprising the RoE in value included in the actual cost of capital for the main ANSP from the RP3 PP and the net gain/loss on ANS activity, as presented in box 11.
- In both tables, indicators are calculated:
 - The RR in percent of en route revenues;
 - And the resulting ex-ante (determined) or ex-post (actual) return on equity (in %).

The elements taken into account to calculate the RoE in value:

- The total asset base, as reported in the PP and the June 2023 Reporting Tables.
- The proportion of financing through equity (in %), as reported in the PP and the June 2023 Reporting Tables.
- The RoE (pre-tax) rate in %, as reported in the PP and in the June 2023 Reporting Tables (with the actual RoE % expected to match the determined RoE % from the PP).

The actual RoE in value is then calculated as the actual (=determined) RoE (pre-tax) rate multiplied by equity (total actual asset base x proportion of financing through equity). The elements taken into account to calculate the net gain/loss on ANS activities are presented in box 11.

For the ANSPs having no equity, the ex-ante and ex-post return on equity cannot be calculated and is indicated as N/A, not applicable.

It is important to note that the computation of the RR does not take into account the use that will be made of it in the sense that some ANSPs reimburse to airspace users all or part of their RR through commercial other revenues, or through the application of a lower unit rate as per Art. 29(6) of (EU) 2019/317. When such case has been identified, it is highlighted in a note in the table.

13. Focus on the main ANSP regulatory result on en route (or terminal) activity

Box 13 provides:

- On the left-hand side, a graphical summary of the ANSP net gain/loss for the calendar year 2022 arising from variations in costs, traffic, and incentives (see box 11).
- On the right-hand side, a bar chart comparing the ex-ante and ex-post RR, both in value (in national currency) and in % of the en route revenue (see box 12).

The notion of revenue used in boxes 12 to 14 corresponds to the revenue arising from the activity in the year, ex-ante it corresponds to the determined costs of the ANSP and ex-post to the sum of the actual costs and the net gain/loss for the ANSP. Box 13 also provides conclusions on the net gain/loss of the main ANSP for the combined year 2020-2021 and the overall regulatory result for the ANSP in the charging zone.

14. Other ANSP(s) / METSP(s) regulatory result on en route (or terminal) activity

Box 14 presents the ex-ante and ex-post regulatory results for the other ANSPs/METSPs providing services in the charging zone, if any. The computation of these results is made in accordance with the same methodology than that described for the main ANSP in boxes 10 to 13. Box 14 also provides conclusions on the net gain/loss of the other ANSPs/METSPs for the calendar year 2022 and the overall regulatory result for the other ANSPs/METSPs in the charging zone.

4.3 Gate-to-gate ANS analysis

1. Monitoring of gate-to-gate ANS costs

The monitoring at gate-to-gate level takes account of all the charging zones covered by the SES under the responsibility of the Member State. Box 1 presents the list of the charging zones concerned. Since, they have a common en route charging zone, Belgium and Luxembourg are presented together in this section.

Box 1 presents an aggregation of en route and terminal costs (in €₂₀₁₇) as well as the share of en route costs in total gate-to-gate costs. It also shows the difference between actual and planned data measured at gate-to-gate level (in €₂₀₁₇ and in %).

2. Share of en route and terminal in gate-to-gate actual costs (2022)

The left-hand side of box 2 shows a graphical presentation of the planned and actual split of gate-to-gate costs between en route and terminal. It helps identify possible changes in cost-allocation methodology. Comments and conclusions are provided on the left-hand side of box 2.

3. Gate-to-gate regulatory result (RR) 2022

Box 3 presents the gate-to-gate regulatory result (RR) covering all the charging zones covered by the SES under the responsibility of the Member States. The ex-ante and ex-post RRs in percentage of the revenues for the ANSPs/METSPS of the State are shown in the graph at the bottom on the right-hand side.

The RR is then shown separately for each ANSP/METSP, in nominal national currency, as well as in percentage of their revenues. Comments and conclusions are provided at the bottom on the left-hand side of box 2.

Annual Monitoring Report 2022

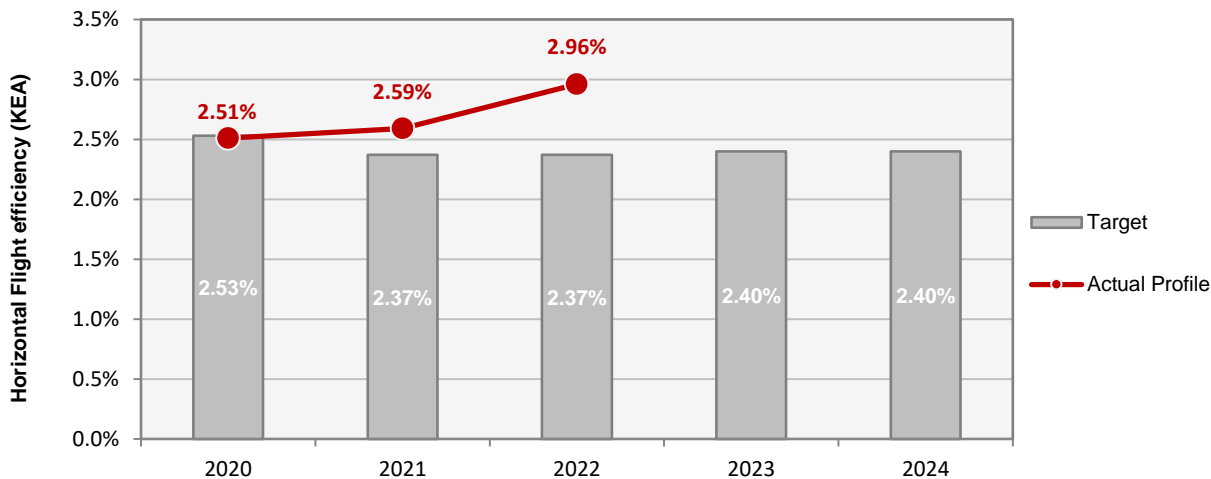
Union-wide view

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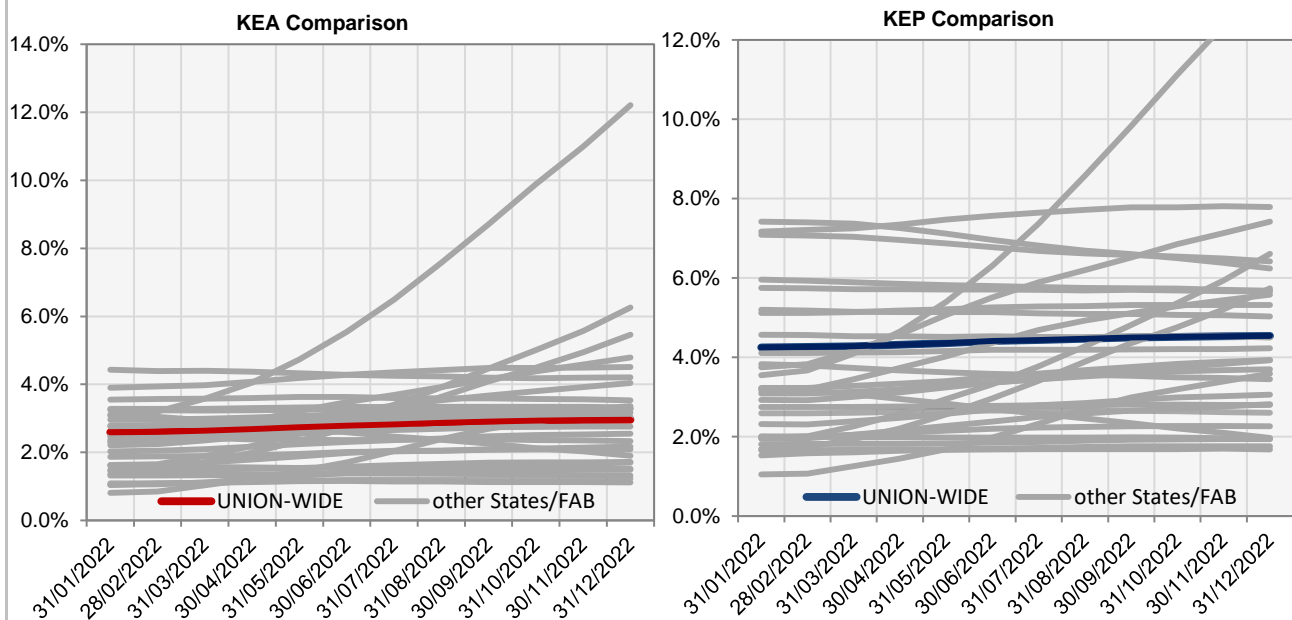
UNION-WIDE

ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.53% | 2.37% | 2.37% | 2.40% | 2.40% |
| Actual performance | 2.51% | 2.59% | 2.96% | | |



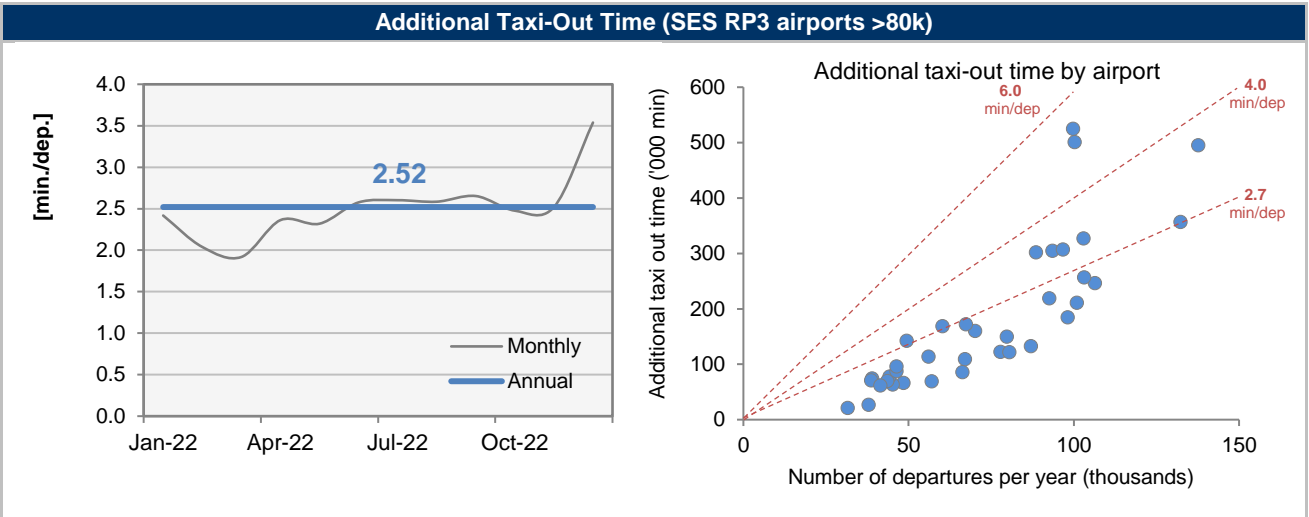
| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 2.59% | 2.60% | 2.64% | 2.68% | 2.74% | 2.79% | 2.82% | 2.87% | 2.91% | 2.93% | 2.95% | 2.96% |
| KEP | 4.25% | 4.26% | 4.28% | 4.32% | 4.36% | 4.41% | 4.44% | 4.47% | 4.50% | 4.52% | 4.53% | 4.54% |
| KES | 3.95% | 3.97% | 4.00% | 4.05% | 4.10% | 4.16% | 4.20% | 4.24% | 4.28% | 4.31% | 4.33% | 4.34% |



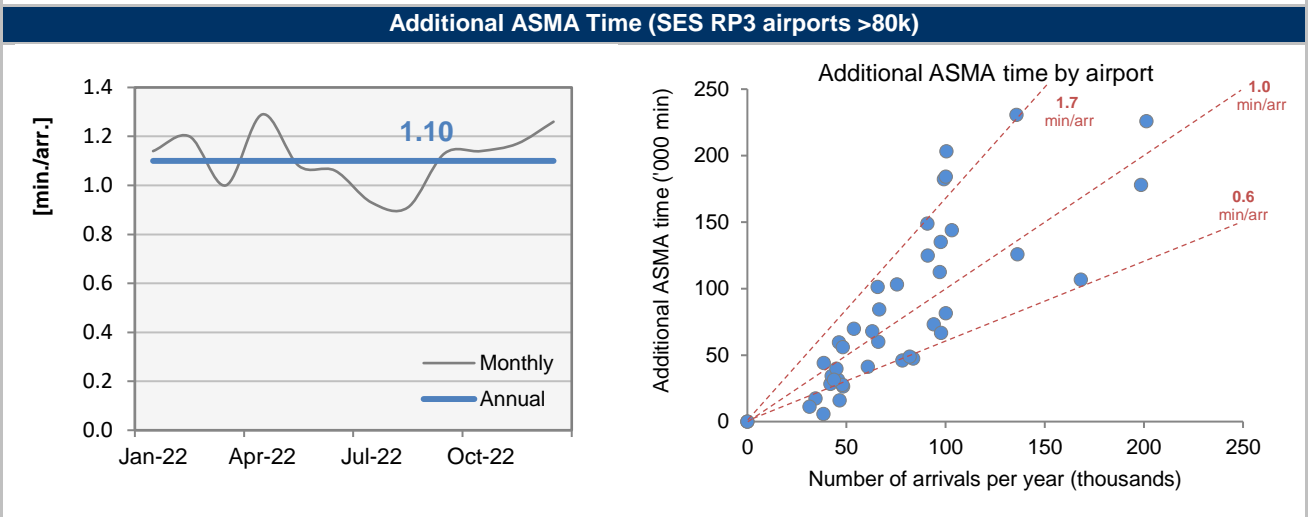
The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Union-wide

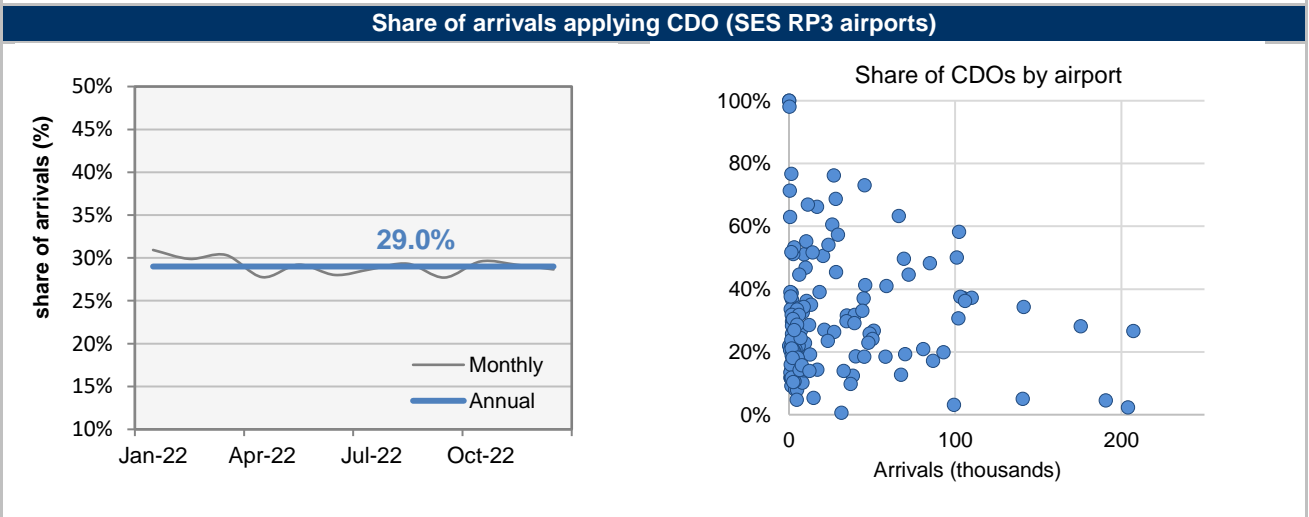
ENVIRONMENT - Airports



In 2022, the average additional taxi out time at the SES RP3 airports (>80k) was 2.52 minutes per departure. At airport level, average additional taxi-out time varied between 0.67 for Toulouse (LFBO) and 5.27 minutes for Dublin (EIDW). No data was available for Bergen (ENBR) and Marseille (LFML) airport.



In 2022, the average additional ASMA time at the SES RP3 airports (>80k) was 1.10 minutes per arrival. At airport level, average additional taxi-out time varied between 0.15 for Lyon (LFLL) and 2.02 minutes for Dublin (EIDW). No data was available for Bergen (ENBR).



In 2022, 29,0% of the arrivals at the SES RP3 airports applied Continuous Descent Operations (CDO). At airport level, the share of arrivals applying CDO varied from close to zero to 100%. Nevertheless, airports above 100k arrivals observed in most cases shares below 40%.

Union wide

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | |
|---|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Union wide Target | 0.90 | 0.35 | 0.50 | 0.50 | 0.50 | The Union -wide value of 1.69 minutes per flight excludes 390k minutes of delay which were considered as due to 'exceptional events', in accordance with Article 2(9) of Commission Regulation (EU) 2019/317 |
| Actual performance | 0.35 | 0.32 | 1.69 | | | |
| Union wide Performance Indicator: Percentage of flights with ATFM delay greater than 15 minutes. | | | | | | |
| As reported by the Network Manager: | | | | | | |
| The percentage of all IFR aircraft with an en route ATFM delay of greater than 15 minutes in 2022: 5%. | | | | | | |
| Average daily number of ATFM regulations producing less than 200 minutes of delay: 50 | | | | | | |
| Average en route ATFM delay per flight at weekend: 2.12 minutes. | | | | | | |
| Target for en route ATFM delay savings by NM: 10% : Actual en route ATFM delay savings by NM: 12% | | | | | | |
| Activation of EACCC due to Russian invasion of Ukraine | | | | | | |
| The European Aviation Crisis Coordination Cell (EACCC) was activated on 24/02/2022 for a period of 3 months. Actions taken by the EACCC include: | | | | | | |
| <ul style="list-style-type: none"> - immediate closure of the areas impacted by the crisis; - preparation of several network impact assessments; - immediate coordination with all operational stakeholders through the enlarged NDOP; - organisation of several EACCC meetings; - coordination of airspace closures with a number of States and ANSPs; - launching of the NATO Rapid Air Mobility procedure; - coordination with EASA on various CZIB versions and on NOTAM templates; - coordination with the European Commission on a variety of aspects related to the Ukrainian crisis; - coordination and briefings with individual operational stakeholders; - implementation in the NM systems of all necessary airspace closures and of measures stipulated in the EU Sanctions Regulation for the Russian Federation and Belarus; - monitoring of NOTAMs published by various States with respect to the sanctions related to the Russian Federation and of the NOTAMs published by the Russian Federation on reciprocal measures; - daily monitoring and reporting of the traffic evolution with respect to the Ukrainian crisis; - monitoring of the CNS / ATM infrastructure and cybersecurity aspects. | | | | | | |

Capacity Planning

The Network Manager worked with ANSPs to prepare and implement the eNM/S22 series of network measures, which regulated and re-routed traffic away from expected capacity hotspots in Karlsruhe UAC and Reims ACC, on-loading adjacent ANSPs. In accordance with procedures approved by the NMB, the Network Manager re-attributed delays from affected ANSPs to DSNA and DFS through the post operations delay attribution process.

For the implementation of 4-flight ATM system in Reims UAC:

- the do-nothing scenario predicted >6 minutes/ flight delay at Reims ACC during Summer season;
- following NM measures: ATFM delays between 1 - 1,5 minutes/ flight during Summer at Reims ACC.

Summary of capacity performance

The Union-wide target for en route capacity was not achieved in 2022. The en route ATFM delay per flight was 1,74 minutes / flight compared to a target of 0,5 minute / flight.

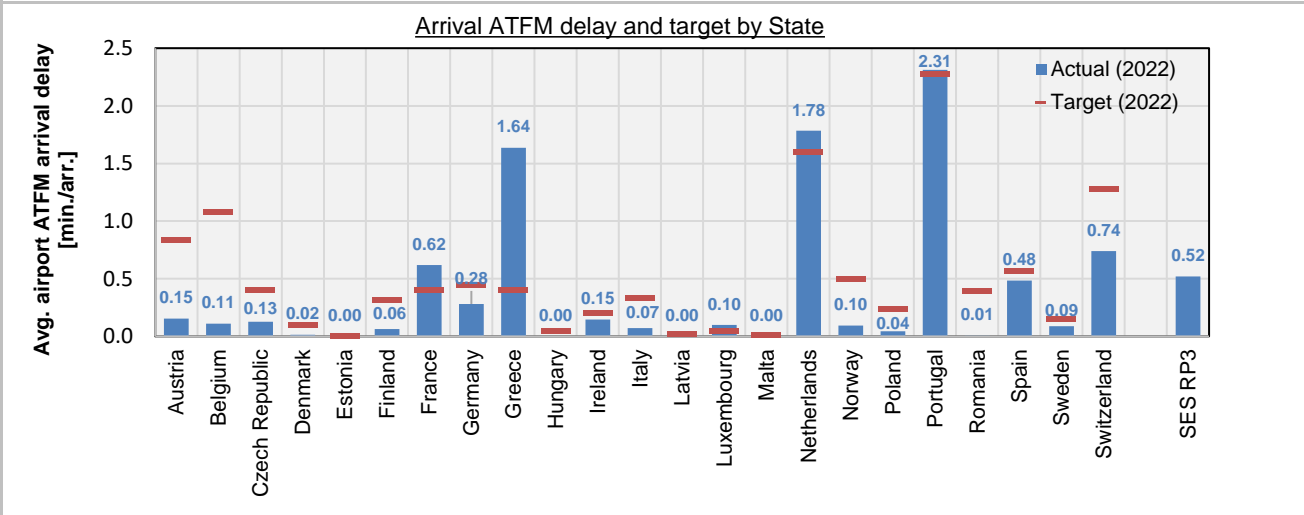
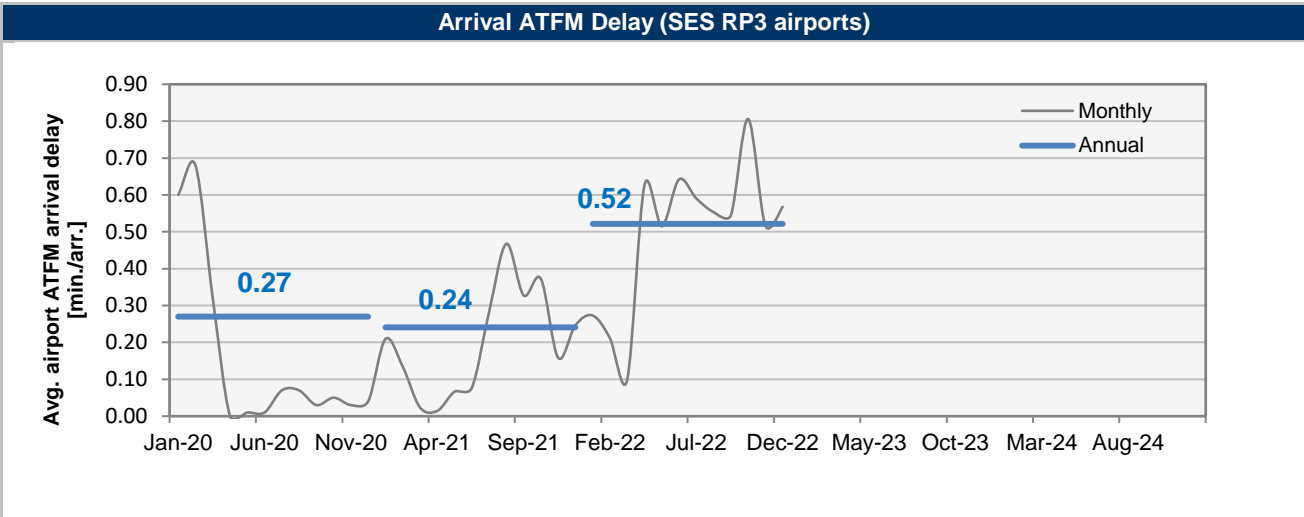
Traffic levels of 8,32 million flights showed a significant increase on 2021's 5,47 million (+52%) although still remained below the pre-COVID level of 9,93 million in 2019.

The main disruptions to network operations were capacity shortfalls in the core area (mainly Karlsruhe UAC and Reims ACC); the Russian invasion of Ukraine causing airspace closures and restrictions, as well as, significantly affecting traffic flows; implementation of new ATM systems; ATC staffing problems and adverse weather.

In 2022, 11 Member States were not able to achieve their national en route performance requirements: Croatia; Czech Republic; France; Germany; Greece; Hungary; Italy; Poland; Portugal; Spain and Switzerland.

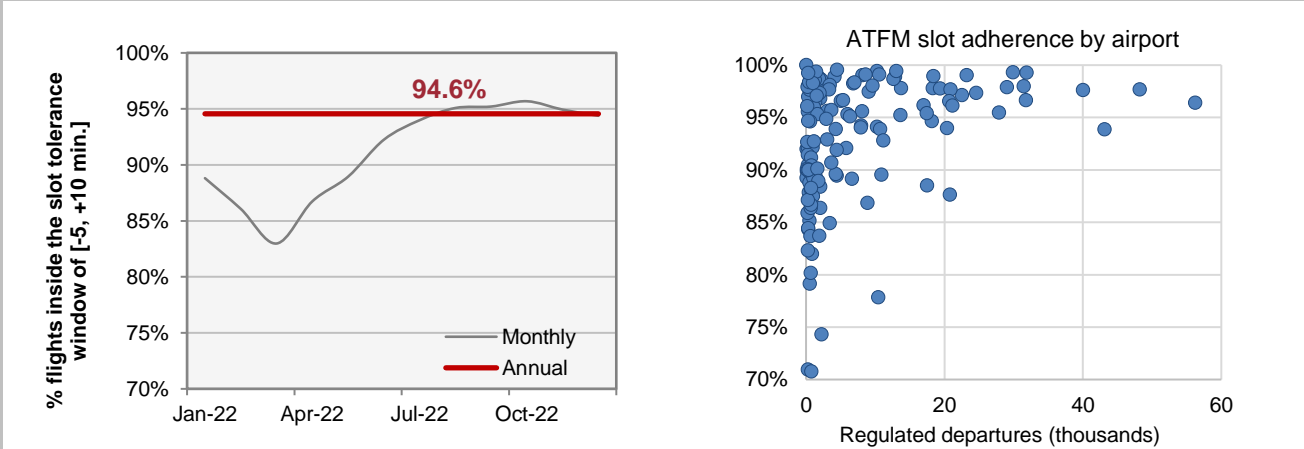
Union-wide

CAPACITY - Airports



In 2022, the average arrival ATFM delay at the SES RP3 airports was 0.52 minutes per arrival. As a result of the traffic recovery, airport arrival ATFM delay at the majority of airports has increased. At local level, France, Greece, Luxembourg, The Netherlands and Portugal did not meet their national target on arrival ATFM delay in 2022,

Adherence to ATFM slots (SES RP3 airports)



In 2022, 94.6% of the ATFM regulated flights at the SES RP3 airports departed inside of the slot tolerance window. ATFM slot adherence also varied notably among airports.

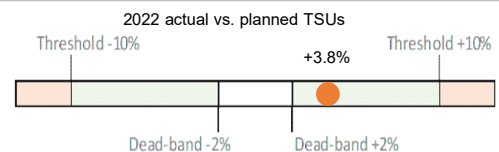
All Causes and ATC Pre-departure Delay (SES RP3 airports >80k)

In 2022, total (all causes) delay compared to the scheduled departure time was 19,03 minutes at the SES RP3 airports (>80k). The ATC-pre departure delay at EU wide level is not available due to data quality issues at many airports.

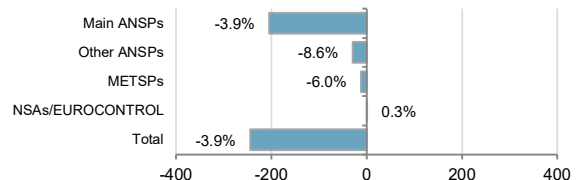
Union-wide en route charging zones

Monitoring of en route COST-EFFICIENCY for 2022

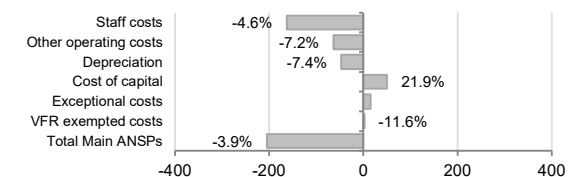
| 1. Union-wide - list of en route charging zones | | | | | | |
|---|---------------|---------------|----------------------|---------------|---------------|---------------|
| 29 en route charging zones | Denmark | Ireland | Poland | Sweden | | |
| Austria | Estonia | Italy | Portugal Continental | Switzerland | | |
| Belgium-Luxembourg | Finland | Latvia | Romania | | | |
| Bulgaria | France | Lithuania | Slovakia | | | |
| Croatia | Germany | Malta | Slovenia | | | |
| Cyprus | Greece | Netherlands | Spain Canarias | | | |
| Czech Republic | Hungary | Norway | Spain Continental | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at Union-wide level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in € in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Assumptions as per EC Decision on revised Union-wide targets for RP3 | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs €2017 | | | 12 157 650 375 | 5 891 940 372 | 6 015 341 177 | 6 077 418 612 |
| Total en route service units | | | 109 968 026 | 86 656 273 | 101 925 348 | 116 358 421 |
| Real en route DUC per service unit €2017 | | | 110.56 | 67.99 | 59.02 | 52.23 |
| Union-wide cost-efficiency performance targets | | | 120.1% | -38.5% | -13.2% | -11.5% |
| Data from RP3 Performance Plans | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs €2017 | 5 985 268 296 | 6 049 525 461 | 12 034 793 758 | 6 239 052 808 | 6 371 960 706 | 6 417 989 347 |
| Total en route service units | 52 500 142 | 65 612 954 | 118 113 096 | 104 404 864 | 120 945 490 | 129 221 449 |
| Real en route DUC per service unit €2017 | 114.00 | 92.20 | 101.89 | 59.76 | 52.68 | 49.67 |
| Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs €2017 | 6 007 001 474 | 5 754 335 046 | 11 761 336 520 | 5 994 823 501 | | |
| Total en route service units | 52 500 142 | 66 892 686 | 119 392 827 | 108 379 886 | | |
| Real en route AUC per service unit €2017 | 114.42 | 86.02 | 98.51 | 55.31 | | |
| Difference between Actuals and EC Decision on Union-wide targets | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real en route costs €2017 | in value | - | -396 313 855 | 102 883 129 | | |
| | in % | - | -3.3% | +1.7% | | |
| Total en route service units | in value | - | 9 424 801 | 21 723 613 | | |
| | in % | - | +8.6% | +25.1% | | |
| Real en route unit cost per service unit €2017 | in value | - | -12.05 | -12.68 | | |
| | in % | - | -10.9% | -18.6% | | |
| Difference between Actuals and Performance Plans | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real en route costs €2017 | in value | 21 733 178 | -295 190 415 | -273 457 237 | -244 229 307 | |
| | in % | +0.4% | -4.9% | -2.3% | -3.9% | |
| Total en route service units | in value | 0 | 1 279 732 | 1 279 732 | 3 975 022 | |
| | in % | - | +2.0% | +1.1% | +3.8% | |
| Real en route unit cost per service unit €2017 | in value | 0.41 | -6.18 | -3.38 | -4.45 | |
| | in % | +0.4% | -6.7% | -3.3% | -7.4% | |
| 4. Focus on en route DUC monitoring at Union-wide level | | | | | | |
| AUC vs. DUC from the EC Decision on Union-wide targets | | | | | | |
| Compared to the EC Decision on Union-wide targets, the en route AUC at Union-wide level was 18.6% (or -12.68€2017) lower than the DUC. This results from the combination of significantly higher TSUs (+25.1%) and higher en route costs in real terms (+1.7%, or +102.9M€2017) compared to the assumptions underpinning the Union-wide cost-efficiency target for the year 2022. | | | | | | |
| AUC vs. DUC from the aggregation of the Member States' performance plans | | | | | | |
| In 2022, the en route AUC at Union-wide level was -7.4% (or -4.45€2017) lower than the planned DUC. This results from the combination of higher than planned TSUs (+3.8%) and lower than planned en route costs in real terms (-3.9%, or -244.2M€2017). | | | | | | |
| En route service units | | | | | | |
| At Union-wide level, the TSUs were higher than planned in the performance plans (by +3.8%). Traffic was higher than planned in 15 charging zones. | | | | | | |
| En route costs by entity | | | | | | |
| Actual real en route costs are -3.9% (-244.2M€2017) lower than planned in the performance plans. This is driven by the main ANSPs (-3.9%, or -204.5M€2017), the other ANSPs (-8.6%, or -29.1M€2017) and the METSPs (-6.0% or -11.9M€2017), while the NSA/EUROCONTROL costs are slightly higher (+0.3%, or +1.3M€2017) than planned. | | | | | | |
| En route costs for the main ANSPs at Union-wide level | | | | | | |
| The lower than planned en route costs in real terms for the main ANSPs (-3.9%, or -204.5M€2017) result from: | | | | | | |
| - lower staff costs (-4.6%, or -162.6M€2017), affected by the high inflation index in 2022 since in nominal terms staff costs are higher than planned (+2.2%); | | | | | | |
| - lower other operating costs (-7.2%, or -63.3M€2017), for all ANSPs except LVNL, Avinor, LfV and Skyguide; | | | | | | |
| - lower depreciation (-7.4%, or -46.6M€2017), of which -25.1M€2017 for DSNA; | | | | | | |
| - higher cost of capital (+21.9%, or +50.3M€2017), of which +37.2M€2017 for DFS; and, | | | | | | |
| - higher exceptional costs (+15.4M€2017). Note that determined exceptional costs were negative for 2022 (-12.3M€2017) mainly due to the reporting of negative amounts by Skyguide and to a lower extent NAVIAIR. | | | | | | |



Costs by entity at Union-wide level (M€2017):



Costs by nature for main ANSPs (M€2017):



Union-wide en route charging zones

Monitoring of en route COST-EFFICIENCY for 2022

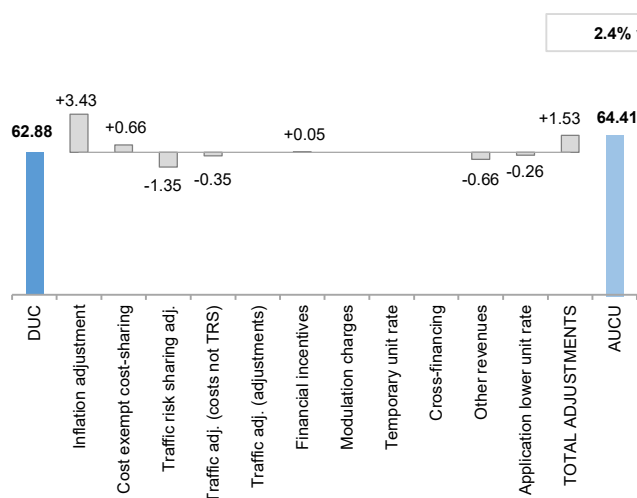
5. Monitoring of the en route actual unit cost for users (AUCU) at Union-wide level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU at Union-wide level is carried out in € in nominal terms.

6. En route actual unit cost for users (AUCU) at Union-wide level

Union-wide 2022 DUC vs. Actual Unit Cost for users in € in nominal terms



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 62.92 |
| DUC to be charged retroactively | -0.04 |
| DUC | 62.88 |
| Inflation adjustment | 3.43 |
| Cost exempt from cost-sharing | 0.66 |
| Traffic risk sharing adjustment | -1.35 |
| Traffic adj. (costs not TRS) | -0.35 |
| Traffic adj. (adjustments)* | 0.05 |
| Financial incentives | 0.05 |
| Modulation of charges | 0.00 |
| Temporary UR** | 0.00 |
| Cross-financing | 0.00 |
| Other revenues | -0.66 |
| Application of lower unit rate | -0.26 |
| Total adjustments | 1.53 |
| AUCU | 64.41 |
| AUCU vs. DUC | 2.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

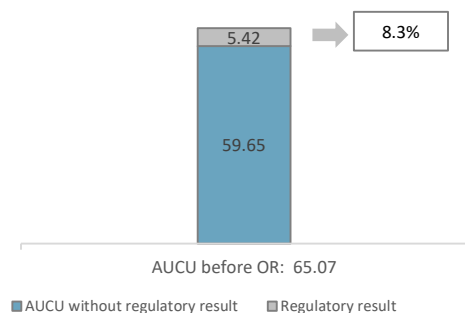
7. En route costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|---------------|-------------|
| New and existing investments | -30 924 | -0.29 |
| Competent authorities and qualified entities costs | -6 061 | -0.06 |
| Eurocontrol costs | 7 339 | 0.07 |
| Pension costs | -1 172 | -0.01 |
| Interest on loans | 3 434 | 0.03 |
| Changes in law | 98 498 | 0.82 |
| Total costs exempt from cost sharing | 71 113 | 0.66 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk -sharing for the calendar year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at Union-wide level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|------------------|--------------|
| Main ANSPs | 533 756 | 4.92 |
| Other ANSPs | 36 194 | 0.33 |
| METSP(s) | € '000 | €/SU |
| Other METSPs | 17 318 | 0.16 |
| Total charging zone | 587 268 | 5.42 |
| Actual cost for users*** | 7 051 968 | 65.07 |
| Regulatory result (% AUCU) | 8.3% | 8.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at Union-wide level

At Union-wide level, the actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (64.41€) is +2.4% higher than the nominal DUC (62.88€) which includes the DUC initially charged: 62.92€; and amounts to be charged retroactively: -0.04€. The difference between these two figures (+1.53€/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.43€/SU);
- the adjustments resulting from the costs exempted from cost-sharing mechanism (+0.66€/SU);
- the traffic risk sharing adjustment (-1.35€/SU);
- the traffic adjustment (-0.35€/SU) for the costs not subject to traffic risk sharing;
- financial incentives (+0.05€/SU) reported by Italy (under the review by European Commission);
- the deduction of the other revenues (-0.66€/SU); and,
- the impact of the application of a lower unit rate by Norway and Switzerland (-0.26€/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 8.3%.

Union-wide en route main ANSPs

Monitoring of en route COST-EFFICIENCY for 2022

| Union-wide - list of main en route ANSPs | | | | | | |
|---|--------------------------|--|-------------------------------------|------------------------|------------------|------------------|
| 29 en route main ANSPs | Denmark - NAVIAIR | Ireland - IAA | Poland - PANSAs | Sweden - LFV | | |
| Austria - Austro Control | Estonia - EANS | Italy - ENAV | Portugal Continental - NAV Portugal | Switzerland - Skyguide | | |
| Belgium-Luxembourg - skeyes | Finland - Fintraffic ANS | Latvia - LGS | Romania - ROMATSA | | | |
| Bulgaria - BULATSA | France - DSNA | Lithuania - Oro Navigacija | Slovakia - LPS | | | |
| Croatia - Croatia Control | Germany - DFS | Malta - MATS | Slovenia - Slovenia Control | | | |
| Cyprus - DCAC Cyprus | Greece - HASP | Netherlands - LVNL | Spain Canarias - ENAIRE | | | |
| Czech Republic - ANS CR | Hungary - HungaroControl | Norway - Avinor | Spain Continental - ENAIRE | | | |
| 10. Monitoring of the en route ANSPs regulatory results (RR) | | | | | | |
| <p>The Regulatory Result (RR) corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account of any opportunity cost.</p> <p>The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.</p> <p>- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.</p> <p>- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.</p> <p>The net gain/loss calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).</p> <p>The monitoring of the RR is carried out in € in nominal terms.</p> | | | | | | |
| 11. Net gain/loss for the main ANSP for the en route activity at Union-wide level | | | | | | |
| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSPs | 193 048 | -98 160 | | | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 47 552 | 336 729 | | | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -31 166 | 64 143 | | | | |
| Gain (+)/Loss (-) to be retained by the ANSPs in respect of cost sharing | 209 434 | 302 712 | | | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Difference in total service units (actual vs PP) % | 1.1% | 3.8% | | | | |
| Determined costs subject to traffic risk sharing for the ANSPs (PP) | 10 324 179 | 5 467 433 | | | | |
| Gain (+)/Loss (-) to be retained by the ANSPs in respect of traffic risk sharing | 104 409 | 57 658 | | | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Gain (+)/Loss (-) to be retained by the ANSPs in respect of incentives (bonus/penalty) | 0 | 5 514 | | | | |
| Net ANSPs gain(+)/loss(-) on en route activity (€ '000) | 313 842 | 365 884 | | | | |
| 12. Regulatory result (RR) for the main ANSP at charging zone level | | | | | | |
| Main ANSPs planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Total asset base | 7 091 441 | 8 228 099 | 15 319 541 | 8 644 932 | 8 434 083 | 8 123 052 |
| RoE (in value) | 167 348 | 170 291 | 337 638 | 164 293 | 180 048 | 189 626 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 167 348 | 170 291 | 337 638 | 164 293 | 180 048 | 189 626 |
| Revenue for the en route charging zone | 5 152 056 | 5 254 125 | 10 406 180 | 5 513 585 | 5 726 399 | 5 852 276 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.2% | 3.2% | 3.2% | 3.0% | 3.1% | 3.2% |
| Main ANSPs actual regulatory result (€'000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 7 089 940 | 7 638 588 | 14 728 528 | 8 344 616 | | |
| RoE (in value) | 168 051 | 161 017 | 329 067 | 167 872 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 313 842 | 313 842 | 365 884 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 168 051 | 474 859 | 642 910 | 533 756 | | |
| Revenue for the en route charging zone | 5 175 803 | 5 351 172 | 10 526 975 | 5 977 629 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.2% | 8.9% | 6.1% | 8.9% | | |
| 13. Focus the main ANSP regulatory result on en route activity | | | | | | |
| <p>Net gain/loss for 2022 MEUR</p> | | <p>En route main ANSP regulatory result in percent of revenues</p> | | | | |
| <p>Net gain on en route activity at Union-wide level in the year 2022</p> <p>At Union-wide level, the net ANSPs gain on en route activity amounts to +365.9 ME, resulting from a gain of +302.7ME arising from the cost sharing mechanism, a gain of +57.7ME arising from the traffic risk sharing mechanism and a gain of +5.5ME arising from the financial incentives (reported by Italy and under the review by EC).</p> <p>Union-wide overall regulatory results (RR) for the en route activity</p> <p>Ex-post, the overall RR corresponding to the net gain from the en route activity mentioned above (+365.9ME) and the RoE (+167.9ME) amounts to +533.8ME and corresponds to 8.9% of the en route revenues, compared to 3.0% ex-ante.</p> | | | | | | |

Union-wide en route other ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity at Union-wide level | | | | | | |
|---|----------------------------|----------------------------|----------------------------|-------------------|--------------|--------------|
| Union-wide - list of other en route ANSPs | | | | | | |
| 14 en route other ANSPs | MUAC (Luxembourg) | Sweden - ACR | | | | |
| Italy - ITAF | MUAC (Netherlands) | Sweden - ARV | | | | |
| Lithuania - NINTA ADAXA | Norway - KJE | Sweden - SDATS | | | | |
| Luxemburg - ANA LUX | Portugal Continental - SAR | | | | | |
| MUAC (Belgium) | Spain Canarias - EA | | | | | |
| MUAC (Germany) | Spain Continental - EA | | | | | |
| Other ANSPs planned regulatory result €'000 | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 226 | 754 | 980 | 879 | 1 154 | 1 449 |
| Revenue for the en route charging zone | 301 748 | 309 749 | 611 497 | 364 833 | 379 126 | 387 107 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.2% | 0.2% | 0.2% | 0.3% | 0.4% |
| Other ANSPs actual regulatory result €'000 | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 226 | 7 407 | 7 633 | 36 194 | | |
| Revenue for the en route charging zone | 301 748 | 316 875 | 618 624 | 387 386 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 2.3% | 1.2% | 9.3% | | |
| Total other ANSP overall regulatory results (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs at Union-wide level corresponds to 9.3% of the en route revenues, compared to 0.2% ex-ante. | | | | | | |
| Union-wide - list of en route METSPs | | | | | | |
| 25 en route METSPs | France - MET | Lithuania - MET | Poland - MET WIM | Sweden - MET | | |
| Austria - MET | Germany - MET | Netherlands - MET | Portugal Continental - MET | Switzerland - MET | | |
| Cyprus - MET | Greece - MET | Norway - MET | Slovakia - MET | | | |
| Czech Republic - MET | Hungary - MET | Poland - MET BYDGOSZCZ | Slovenia - MET | | | |
| Denmark - MET | Ireland - MET | Poland - MET IMWM | Spain Canarias - AEMET | | | |
| Finland - MET | Latvia - MET | Poland - MET Airport Meteo | Spain Continental - AEMET | | | |
| METSPs planned regulatory result €'000 | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 2 695 | 2 805 | 5 501 | 2 857 | 2 990 | 3 007 |
| Revenue for the en route charging zone | 194 735 | 203 550 | 398 285 | 207 034 | 211 236 | 212 700 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% |
| METSPs actual regulatory result €'000 | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 2 695 | 6 798 | 9 493 | 17 318 | | |
| Revenue for the en route charging zone | 194 735 | 205 094 | 399 829 | 220 214 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.4% | 3.3% | 2.4% | 7.9% | | |
| Total METSPs overall regulatory results (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the METSPs at Union-wide level corresponds to 7.9% of the en route revenues, compared to 1.4% ex-ante. | | | | | | |

Union-wide terminal charging zones

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Union-wide - list of terminal charging zones | | | | | | |
|--|---------------|---------------|---------------|--|---------------|---------------|
| 26 terminal charging zones | France zone 2 | Luxembourg | Spain | | | |
| Austria | Germany | Malta | Sweden | | | |
| Belgium Brussels | Greece | Netherlands | Switzerland | | | |
| Czech Republic | Hungary | Norway | | | | |
| Denmark | Ireland | Poland zone 1 | | | | |
| Estonia | Italy zone 1 | Poland zone 2 | | | | |
| Finland | Italy zone 2 | Portugal | | | | |
| France zone 1 | Latvia | Romania | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at Union-wide level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in € in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Data from RP3 Performance Plans | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real terminal costs (€2017) | 1 201 988 985 | 1 235 013 482 | 2 437 002 467 | 1 248 647 031 | 1 279 007 055 | 1 304 558 867 |
| Total terminal service units | 3 013 351 | 3 589 005 | 6 602 356 | 6 083 242 | 6 771 716 | 7 155 361 |
| Real terminal DUC per service unit (€2017) | 398.89 | 344.11 | 369.11 | 205.26 | 188.87 | 182.32 |
| Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real terminal costs (€2017) | 1 202 417 708 | 1 182 243 355 | 2 384 661 062 | 1 212 167 013 | | |
| Total terminal service units | 3 013 351 | 3 649 683 | 6 663 034 | 5 868 991 | | |
| Real terminal AUC per service unit (€2017) | 399.03 | 323.93 | 357.89 | 206.54 | | |
| Difference between Actuals and Planned Performance Plans | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real terminal costs (€ 2017) | in value | 428 723 | -52 770 127 | -52 341 404 | -36 480 018 | |
| | in % | +0.04% | -4.3% | -2.1% | -2.9% | |
| Total terminal service units | in value | 0 | 60 678 | 60 678 | -214 251 | |
| | in % | - | +1.7% | +0.9% | -3.5% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.14 | -20.18 | -11.22 | 1.28 | |
| | in % | +0.04% | -5.9% | -3.0% | 0.6% | |
| 4. Focus on terminal DUC monitoring at Union-wide level | | | | | | |
| <p>AUC vs. DUC from the aggregation of the Member States' performance plans</p> <p>In 2022, the terminal AUC at Union-wide level was +0.6% (or +1.28€2017) higher than the planned DUC. This results from the combination of lower than planned TNSUs (-3.5%) and lower than planned terminal costs in real terms (-2.9%, or -36.5M€2017).</p> | | | | <p>2022 actual vs. planned TNSUs</p> | | |
| <p>Terminal service units</p> <p>At Union-wide level, the TNSUs were lower than planned in the performance plans (by -3.5%). Traffic was lower than planned in 15 charging zones.</p> | | | | <p>Costs by entity at Union-wide level (M€2017):</p> | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -2.9% (-36.5M€2017) lower than planned in the performance plans. This is driven by the main ANSPs (-2.7%, or -31.9M€2017), the other ANSPs (-1.3%, or -0.1M€2017) and the METSPs (-12.2% or -5.8M€2017), while the NSAs costs are higher (+12.0%, or +1.3M€2017) than planned.</p> | | | | <p>Costs by nature for main ANSPs (M€2017):</p> | | |
| <p>Terminal costs for the main ANSPs at Union-wide level</p> <p>The lower than planned terminal costs in real terms for the main ANSPs (-2.7%, or -31.9M€2017) result from:</p> <ul style="list-style-type: none"> - lower staff costs (-3.6%, or -29.0M€2017) affected by the high inflation index in 2022 since in nominal terms staff costs are higher than planned (+3.2%); - lower other operating costs (-4.1%, or -8.8M€2017) affected by the high inflation index in 2022 since in nominal terms other operating costs are higher than planned (+2.4%); - lower depreciation (-11.0%, or -15.7M€2017) for all ANSPs except skeyes, EANS, PANSA and LGS; - higher cost of capital (+32.2%, or +15.0M€2017), of which +13.6M€2017 for DFS; and, - higher exceptional costs (+7.2M€2017). Note that determined exceptional costs were negative for 2022 (-5.9M€2017) mainly due to the reporting of negative amounts by Skyguide. | | | | | | |

Union-wide Terminal charging zones

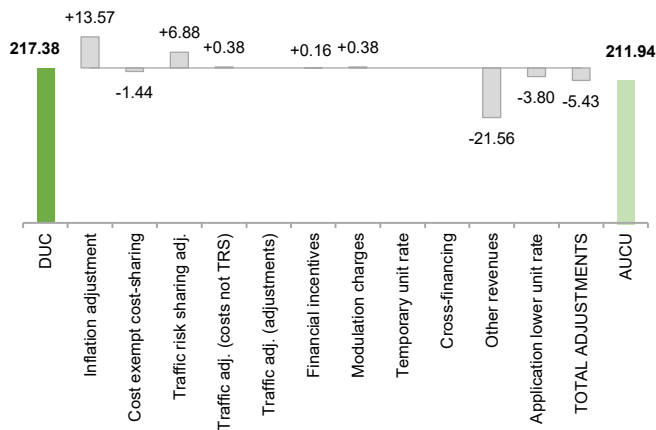
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at Union-wide level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year. The monitoring of the AUCU is carried out in € in nominal terms.

6. Terminal actual unit cost for users (AUCU) at Union-wide level

Union-wide 2022 DUC vs. Actual Unit Cost for users in € in nominal terms



| Components of the AUCU | EUR/SU |
|---------------------------------|---------------|
| Initial DUC charged | 217.04 |
| DUC to be charged retroactively | 0.33 |
| DUC | 217.38 |
| Inflation adjustment | 13.57 |
| Cost exempt from cost-sharing | -1.44 |
| Traffic risk sharing adjustment | 6.88 |
| Traffic adj. (costs not TRS) | 0.38 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.16 |
| Modulation of charges | 0.38 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -21.56 |
| Application of lower unit rate | -3.80 |
| Total adjustments | -5.43 |
| AUCU | 211.94 |
| AUCU vs. DUC | -2.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

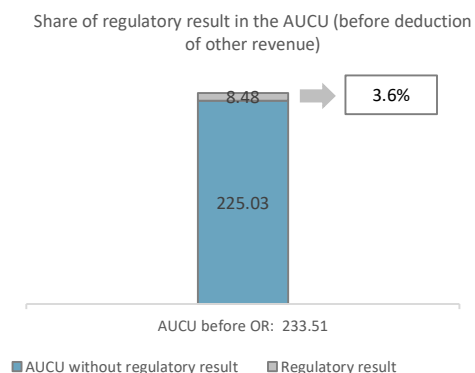
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | €'000 | €/SU |
|---|--|---------------|--------------|
| by item | New and existing investments | -15 970 | -2.72 |
| | Competent authorities and qualified entities costs | 1 277 | 0.22 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 1 796 | 0.31 |
| | Interest on loans | 656 | 0.11 |
| | Changes in law | 3 800 | 0.65 |
| Total costs exempt from cost sharing | | -8 440 | -1.44 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk-sharing for the calendar year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at Union-wide level



| ANSP(S) | €'000 | €/SU |
|-----------------------------------|------------------|---------------|
| Main ANSPs | 42 767 | 7.29 |
| Other ANSPs | 394 | 0.07 |
| METSP(s) | €'000 | €/SU |
| Other METSPs | 6 612 | 1.13 |
| Total charging zone | 49 773 | 8.48 |
| Actual cost for users*** | 1 370 455 | 233.51 |
| Regulatory result (% AUCU) | 3.6% | 3.6% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at Union-wide level

At Union-wide level, the actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (211.94€) is -2.5% lower than the nominal DUC (217.38€) which includes DUC initially charged: 217.04€; and amounts to be charged retroactively: 0.33€. The difference (-5.43€/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+13.57€/SU);
- the adjustments resulting from the costs exempted from cost-sharing mechanism (-1.44€/SU);
- the traffic risk sharing adjustment (+6.88€/SU);
- the traffic adjustment (+0.38€/SU) for the costs not subject to traffic risk sharing;
- financial incentives (+0.16€/SU) reported by Italy (under the review by European Commission);
- the modulation of charges (+0.38 €/SU) by Belgium and Luxembourg;
- the deduction of significant other revenues (-21.56€/SU); and,
- the application of a lower unit rate by Norway, Greece, Spain, Switzerland and the Czech Republic (-3.80€/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 3.6%.

Union Wide terminal main ANSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| Union-wide - list of main terminal ANSPs | | | | | | |
|---|--------------------------|-----------------------|--|------------------|------------------|------------------|
| 26 terminal main ANSPs | France zone 1 - DSNA | Italy zone 2 - ENAV | Poland zone 2 - PANSA | | | |
| Austria - Austro Control | France zone 2 - DSNA | Latvia - LGS | Portugal - NAV Portugal | | | |
| Belgium - skeyes | Germany - DFS | Luxembourg - ANA LUX | Romania - ROMATSA | | | |
| Czech Republic - ANS CR | Greece - HASP | Malta - MATS | Spain - ENAIRE | | | |
| Denmark - NAVIAIR | Hungary - HungaroControl | Netherlands - LVNL | Sweden - LFV | | | |
| Estonia - EANS | Ireland - IAA | Norway - Avinor | Switzerland - Skyguide | | | |
| Finland - Fintraffic ANS | Italy zone 1 - ENAV | Poland zone 1 - PANSA | | | | |
| 10. Monitoring of the terminal ANSPs regulatory results (RR) | | | | | | |
| <p>The Regulatory Result (RR) corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account of any opportunity cost.</p> <p>The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.</p> <p>- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.</p> <p>- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.</p> <p>The net gain/loss calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).</p> <p>The monitoring of the RR is carried out in € in nominal terms.</p> | | | | | | |
| 11. Net gain/loss for the main ANSP for the terminal activity at charging zone level | | | | | | |
| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 42 698 | -39 250 | | | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 10 786 | 76 350 | | | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -8 585 | -9 352 | | | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 44 899 | 27 748 | | | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Difference in total service units (actual vs PP) % | 0.9% | -3.5% | | | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 2 363 981 | 1 242 989 | | | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 16 394 | -17 945 | | | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 936 | | | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 61 293 | 10 739 | | | | |
| 12. Regulatory result (RR) for the main ANSP at charging zone level | | | | | | |
| Main ANSPs planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Total asset base | 1 553 780 | 1 833 476 | 3 387 256 | 2 128 617 | 2 088 265 | 2 006 841 |
| RoE (in value) | 28 517 | 28 390 | 56 907 | 31 989 | 35 186 | 37 666 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 28 517 | 28 390 | 56 907 | 31 989 | 35 186 | 37 666 |
| Revenue for the terminal charging zone | 1 168 733 | 1 217 536 | 2 386 269 | 1 255 066 | 1 301 117 | 1 344 685 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.4% | 2.3% | 2.4% | 2.5% | 2.7% | 2.8% |
| Main ANSPs actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 1 553 929 | 1 788 568 | 3 342 497 | 2 038 673 | | |
| RoE (in value) | 28 818 | 26 055 | 54 873 | 32 028 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 61 293 | 61 293 | 10 739 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 28 818 | 87 348 | 116 166 | 42 767 | | |
| Revenue for the terminal charging zone | 1 169 163 | 1 235 701 | 2 404 864 | 1 305 055 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.5% | 7.1% | 4.8% | 3.3% | | |
| 13. Focus on main ANSP regulatory result on terminal activity | | | | | | |
| <p>Net gain/loss for 2022 MEUR</p> | | | <p>Terminal main ANSP regulatory result in percent of revenues</p> | | | |
| <p>Net gain on terminal activity at Union-wide level in the year 2022</p> <p>At Union-wide level, the net ANSPs gain on terminal activity amounts to +10.7M€, resulting from a gain of +27.7M€ arising from the cost sharing mechanism, a loss of -17.9 M€ arising from the traffic risk sharing mechanism and a gain of +0.9M€ arising from the financial incentives (reported by Italy and under the review by EC).</p> <p>Union-wide overall regulatory results (RR) for the terminal activity</p> <p>Ex-post, the overall RR corresponding to the net gain from the terminal activity mentioned above (+10.7M€) and the RoE (+32.0M€) amounts to +42.8M€, corresponding to 3.3% of the terminal revenues, compared to 2.5% ex-ante.</p> | | | | | | |

Union Wide terminal other ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|---------------------------|-------------------------------|-------------------------------|-------------|-------------|-------------|
| Union-wide - list of terminal other ANSPs | | | | | | |
| 4 terminal other ANSPs | Malta - MIA | Poland zone 2 -Warmia-Mazury | | | | |
| | Poland zone 2 - BYDGOSZCZ | Sweden-SWEDAVIA | | | | |
| Other ANSPs planned regulatory result EUR'000 | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 239 | 277 | 516 | 325 | 373 | 446 |
| Revenue for the terminal charging zone | 5 915 | 6 031 | 11 945 | 6 320 | 6 709 | 6 992 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.0% | 4.6% | 4.3% | 5.1% | 5.6% | 6.4% |
| Other ANSPs actual regulatory result EUR'000 | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 239 | 1 052 | 1 292 | 394 | | |
| Revenue for the terminal charging zone | 5 915 | 6 443 | 12 357 | 6 603 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.0% | 16.3% | 10.5% | 6.0% | | |
| Total other ANSP overall regulatory results (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs at Union-wide level corresponds to 6.0% of the terminal revenues, compared to 5.1% ex-ante. | | | | | | |
| Union-wide - list of terminal METSPs | | | | | | |
| 22 terminal other METSPs | France zone 2 - MET | Netherlands - MET | Poland Zone 2 - Airport Meteo | | | |
| Austria - MET | Germany - MET | Norway - MET | Portugal - MET | | | |
| Czech Republic - MET | Greece - MET | Poland Zone 1 - MET IMWM | Spain - AEMET | | | |
| Denmark - MET | Hungary - MET | Poland Zone 2 - MET IMWM | Sweden - Arlanda MET | | | |
| Finland - MET | Ireland - MET | Poland Zone 2 - MET BYDGOSZCZ | Switzerland - MET | | | |
| France zone 1 - MET | Latvia - MET | Poland Zone 2 - Warmia-Mazury | | | | |
| METSPs planned regulatory result EUR'000 | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 362 | 361 | 723 | 321 | 355 | 366 |
| Revenue for the terminal charging zone | 47 500 | 49 137 | 96 637 | 50 510 | 51 433 | 51 925 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.8% | 0.7% | 0.7% | 0.6% | 0.7% | 0.7% |
| METSPs actual regulatory result EUR'000 | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 362 | 1 275 | 1 637 | 6 612 | | |
| Revenue for the terminal charging zone | 47 500 | 49 204 | 96 704 | 53 278 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.8% | 2.6% | 1.7% | 12.4% | | |
| Total METSPs overall regulatory results (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the METSPs at Union-wide level corresponds to 12.4% of the terminal revenues, compared to 0.6% ex-ante. | | | | | | |

Union-wide gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | |
|--|----------------|------------------|--|--|------------------|----------------------|
| Data from RP3 performance plan | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | 5 985 268 296 | 6 049 525 461 | 12 034 793 758 | 6 239 052 808 | 6 371 960 706 | 6 417 989 347 |
| Real terminal costs (€2017) | 1 201 988 985 | 1 235 013 482 | 2 437 002 467 | 1 248 647 031 | 1 279 007 055 | 1 304 558 867 |
| Real gate-to-gate costs (€2017) | 7 187 257 281 | 7 284 538 943 | 14 471 796 224 | 7 487 699 839 | 7 650 967 761 | 7 722 548 214 |
| En route share (%) | 83.3% | 83.0% | 83.2% | 83.3% | 83.3% | 83.1% |
| Actual data from reporting tables | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | 6 007 001 474 | 5 754 335 046 | 11 761 336 520 | 5 994 823 501 | | |
| Real terminal costs (€2017) | 1 202 417 708 | 1 182 243 355 | 2 384 661 062 | 1 212 167 013 | | |
| Real gate-to-gate costs (€2017) | 7 209 419 182 | 6 936 578 401 | 14 145 997 583 | 7 206 990 514 | | |
| En route share (%) | 83.3% | 83.0% | 83.1% | 83.2% | | |
| Difference between actuals and planned (actuals vs. PP) | | | | | | |
| | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | |
| in value | 22 161 900 | -347 960 542 | -325 798 642 | -280 709 325 | | |
| in % | 0.3% | -4.8% | -2.3% | -3.7% | | |
| En route share | | | | | | |
| in p.p. | 0.0 p.p. | -0.1 p.p. | -0.0 p.p. | -0.1 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | |
| | | | <p>In the 2022, actual gate-to-gate ANS costs are -3.7% (-280.7M€2017) lower than planned, as en route costs were lower than planned by -244.2M€2017 and terminal costs by -36.5M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (83.2%) is in line with that planned in the PP for 2022 (83.3%).</p> | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | |
| In € '000 | | | | | | |
| | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues |
| Main ANSPs | 196 282 | 6 768 651 | 2.9% | 576 524 | 7 282 684 | 7.9% |
| Other ANSPs | 1 204 | 371 153 | 0.3% | 36 587 | 393 989 | 9.3% |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues |
| METSPs | 3 178 | 257 544 | 1.2% | 23 930 | 273 492 | 8.7% |
| Total | 200 665 | 7 397 348 | 2.7% | 637 041 | 7 950 166 | 8.0% |
| <p>For the ANSPs providing services in the en route and terminal charging zones covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +637.0M€ (+587.3M€ for en route; +49.8M€ for terminal (see boxes 10 to 14 for the detailed analysis at Union-wide level), corresponding to 8.0% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year included in the performance plans (2.7%). This difference between the ex-ante and ex-post RR (+436.4M€) is mainly due to +451.9M€ inflation adjustment, while difference in cost is -121.1M€ (of which, 60.1M€ is compensated with cost exempt from cost sharing).</p> | | | | <p>Union-wide gate-to-gate 2022 regulatory result in % of revenues</p> | | |

Annual Monitoring Report 2022

Local level view

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Annual Monitoring Report 2022

Local level view

Austria

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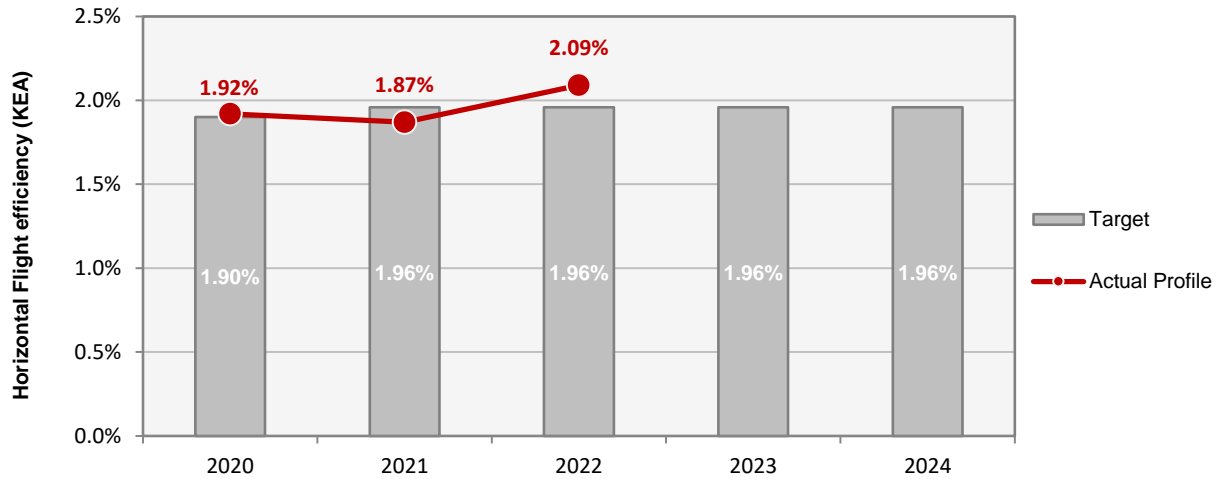
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Austro Control | 69 | B | B | C | B | B |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components to achieve RP3 targets. | | | | | | |

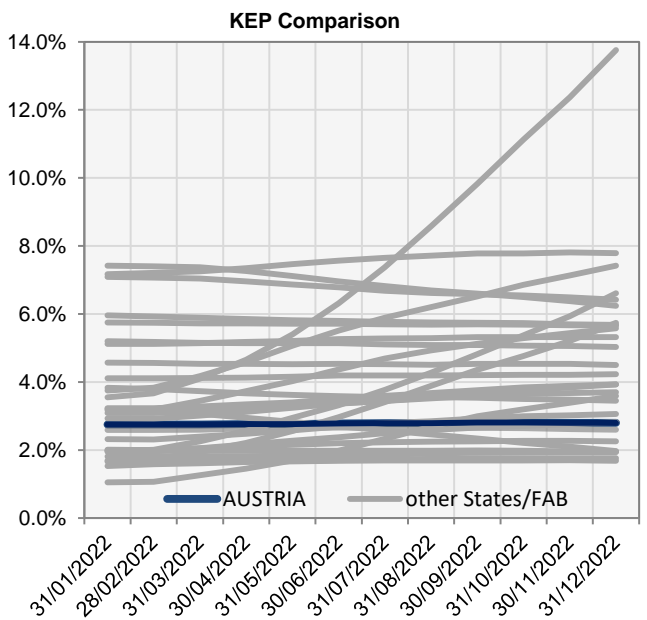
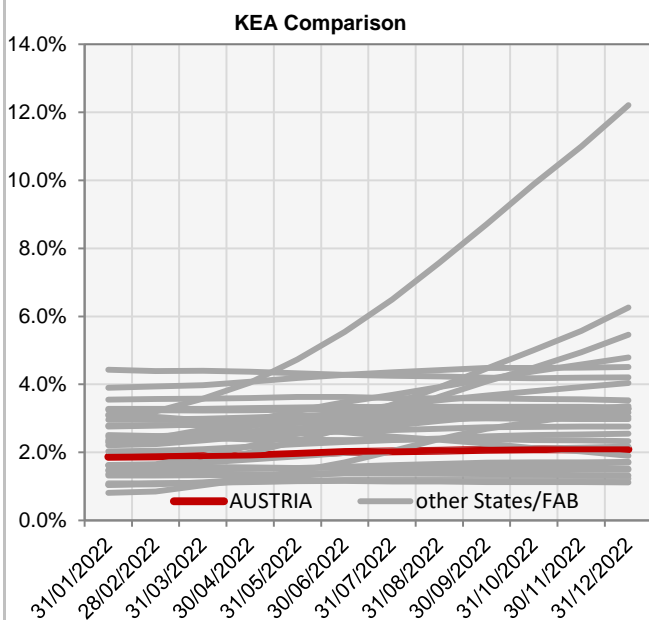
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ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.90% | 1.96% | 1.96% | 1.96% | 1.96% |
| Actual performance | 1.92% | 1.87% | 2.09% | | |



| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 1.87% | 1.88% | 1.89% | 1.91% | 1.96% | 2.01% | 2.03% | 2.05% | 2.08% | 2.09% | 2.09% | 2.09% |
| KEP | 2.75% | 2.75% | 2.75% | 2.76% | 2.76% | 2.78% | 2.79% | 2.79% | 2.81% | 2.81% | 2.80% | 2.80% |
| KES | 2.52% | 2.52% | 2.53% | 2.55% | 2.56% | 2.58% | 2.61% | 2.62% | 2.65% | 2.65% | 2.65% | 2.66% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

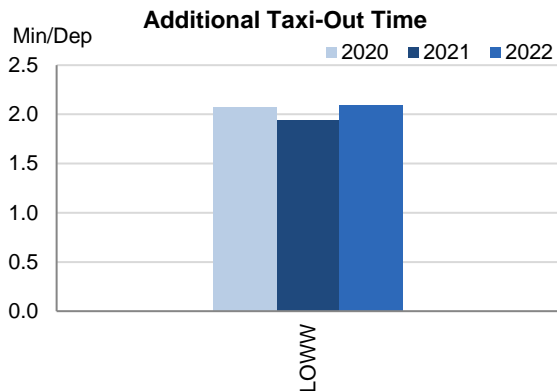
Austria identified six airports as subject to RP3 monitoring. According to the traffic figures at these 6 airports, only Vienna (LOWW) must be monitored for additional taxi-out and ASMA times.

The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.

Traffic at the ensemble of these airports increased by 58% in 2022 with respect to 2021 but it is still 25% below 2019 levels.

Observed additional times at Vienna remain low- compared to pre-COVID levels. The share of CDO flights reduced from 29.2% to 27.9% in 2022.

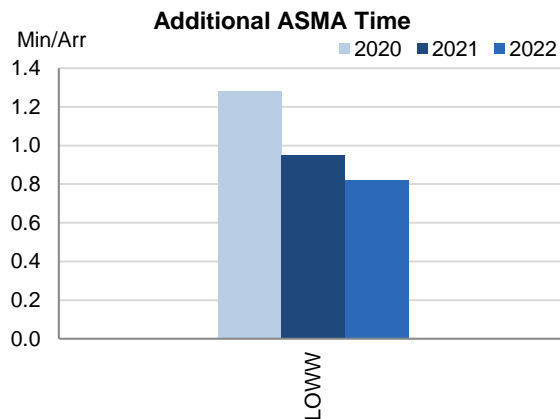
2. Additional Taxi-Out Time



Additional taxi-out times at Vienna remain around 2 min/dep in 2022 (LOWW; 2019: 3.1 min/dep.; 2020: 2.07 min/dep.; 2021: 1.94 min/dep.; 2022: 2.09 min/dep.)

According to the Austrian monitoring report: *Continuous improvements are made to shorten taxi times, nonetheless, various facts like partial closure of gates due to COVID at the beginning of 2022 were influencing ground movements.*

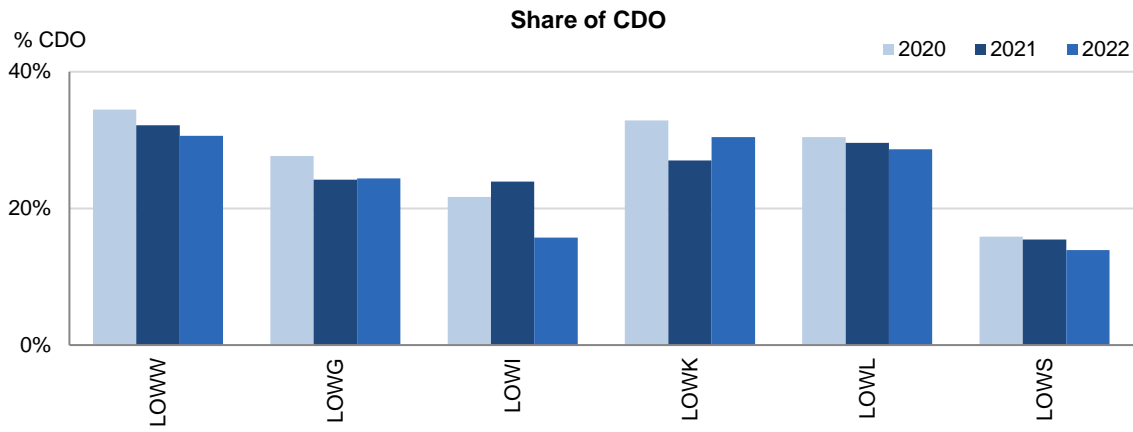
3. Additional ASMA Time



Additional ASMA times at Vienna lowered again in 2022 and are now 61% lower than pre-COVID (LOWW; 2019: 2.13 min/arr.; 2020: 1.28 min/arr.; 2021: 0.95 min/arr.; 2022: 0.82 min/arr.)

According to the Austrian monitoring report the *AMAN functionality has been fully applied.*

4. Share of arrivals applying CDO



Vienna (LOWW) has the highest share of CDO flights in Austria: 30.6% which is slightly higher than the overall RP3 value in 2022 (29.0%).

The other airports have 24-30% of CDO flights, except for Innsbruck (LOWI): 15.7% and Salzburg (LOWS): 13.9%. All airports have seen a (slight) reduction of the share of CDO flights, except for Klagenfurt (LOWK) which had an increase of 3.4 percentage points.

According to the Austrian monitoring report: *Awareness campaigns on both sides, ATCOs and Airlines increase the CDO application. Despite additional traffic compared to 2020 and 2021, the CDO value could be maintained or even improved.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-----------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Vienna-LOWW | 2.07 | 1.94 | 2.09 | | | 1.28 | 0.95 | 0.82 | | | 34% | 32% | 31% | | |
| Graz-LOWG | - | - | - | | | - | - | - | | | 28% | 24% | 24% | | |
| Innsbruck-LOWI | - | - | - | | | - | - | - | | | 22% | 24% | 16% | | |
| Klagenfurt-LOWK | - | - | - | | | - | - | - | | | 33% | 27% | 30% | | |
| Linz-LOWL | - | - | - | | | - | - | - | | | 30% | 30% | 29% | | |
| Salzburg-LOWS | - | - | - | | | - | - | - | | | 16% | 15% | 14% | | |

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ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Military dimension has little to no impact on the environmental KPA, due to a highly efficient and flexible use of airspace with close military coordination.

Practically no impact of MIL dimension on the capacity KPA.

The planning of airspace use at pre-tactical level is done via the civil/military joint unit Airspace Management Cell (AMC). Day-to-day co-ordination of Operational Air Traffic (OAT) and General Air Traffic (GAT) is handled at the tactical level between civil ATS Units and representatives of the Military Control Centre (MCC).

FUA Level 3 is fully applied.

Military - related measures implemented or planned to improve capacity

n/a

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Austria | 66% | 69% | 65% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vienna | 66% | 69% | 65% | | |

Initiatives implemented or planned to improve PI#6

Preparations for LARA implementation are set, which is planned for operational use by end 2023.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Austria | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vienna | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

nothing reported

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Austria | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vienna | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

Not yet measured, as CDRs are not in place, and due to extremely flexible usage of airspace, nearly all aircraft planning through reserved area are able to do so.

Only a few aircraft might be subject to minor reroutings (horizontal / vertical).

AUSTRIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|--|------|------|------|------|------|--|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | n/a | 0.10 | 0.17 | 0.17 | 0.16 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. | |
| Actual performance | 0.00 | 0.00 | 0.06 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>Despite ongoing effects of the COVID-19 pandemic, traffic started to return with particularly and unexpectedly high figures during the summer period. Staff availability was still impaired by various waves of the pandemic, yet the provision of ANS was not severely impacted.</p> <p>Capacity targets were met despite the return of traffic, shifted traffic flows due to the Russian war of aggression against Ukraine and ongoing COVID effects on staff availability.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>Apart from permanent ATFCM processes in place, monitoring traffic during the strategic, pretactical, and tactical phase as well as post OPS analyses are regularly executed. Furthermore, a daily, weekly, monthly, yearly monitoring of capacity and delay is executed.</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>Based on NM TFC predictions (STATFOR, NOP), capacity is planned and managed in terms of sector opening hours based inter alia on human resources and traffic distribution.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Vienna ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 135 | 138 | 140 | 140 | |
| Actual | 131 | 129 | 136 | 140 | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| <p>Not applicable.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Austria experienced an increase in traffic from 739k flights in 2021 to 1267k flights in 2022; however, traffic levels were still below the 1,365k flights in 2019.</p> <p>In 2022, Austro Control had 78k minutes of en-route AFTM delay, up from <1k minutes of delay in 2021. However, in 2019 when Austria had 1365k flights, Austro Control had more than 1530k minutes of delay.</p> <p>There were an additional 27k minutes of en route ATFM delay originating in the Vienna ACC that were re-attributed to DFS (>17k) and DSNA (>9k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.</p> | | | | | | | |

1. Overview

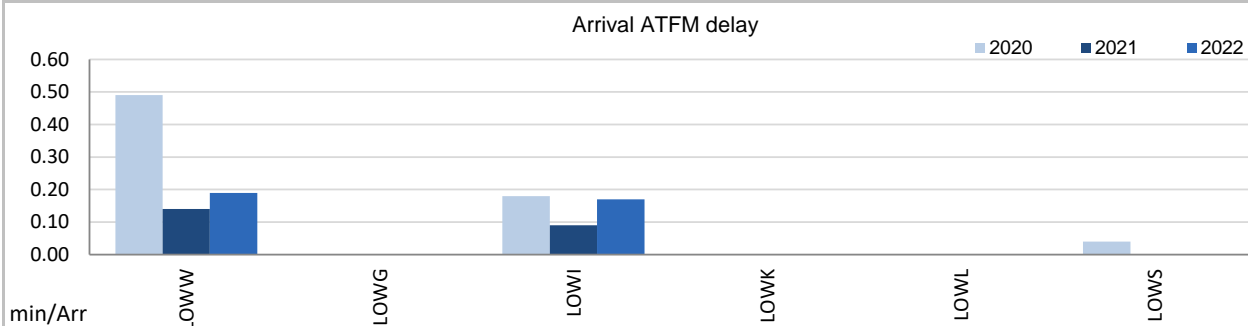
Austria identified six airports as subject to RP3 monitoring. According to the traffic figures at these 4 airports, only Vienna (LOWW) must be monitored for pre-departure delays.

The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly established where required and the monitoring of all capacity indicators can be performed.

Traffic at the ensemble of these airports increased by 58% in 2022 with respect to 2021 but it is still 25% below 2019 levels.

During 2022, arrival ATFM delays in Austria remained very low and ATFM slot adherence improved (2022: 98.8%; 2021: 97.4%) resulting in values above 95% for all airports.

2. Arrival ATFM Delay



Average arrival ATFM delay in Austria in 2022 was 0.15 min/arr, compared to 0.11 min/arr in 2021.

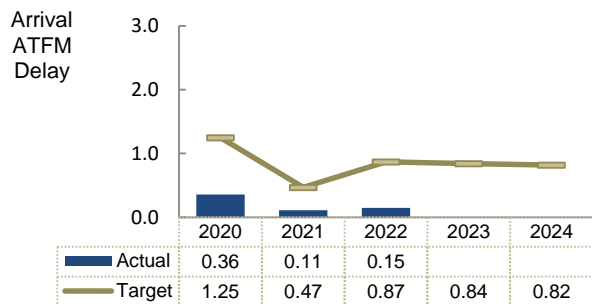
Only Vienna and Innsbruck registered delays in 2022.

At Vienna (LOWW: 2019: 0.91 min/arr.; 2020: 0.49 min/arr.; 2021: 0.14 min/arr.; 2022: 0.19 min/arr.) 68% of these delays were attributed to weather and 26% to ATC staffing issues.

Innsbruck (LOWI: 2020: 0.18 min/arr.; 2021: 0.09 min/arr.; 2022: 0.17 min/arr.) observed arrival ATFM delays only in January, February and December and were all related to weather.

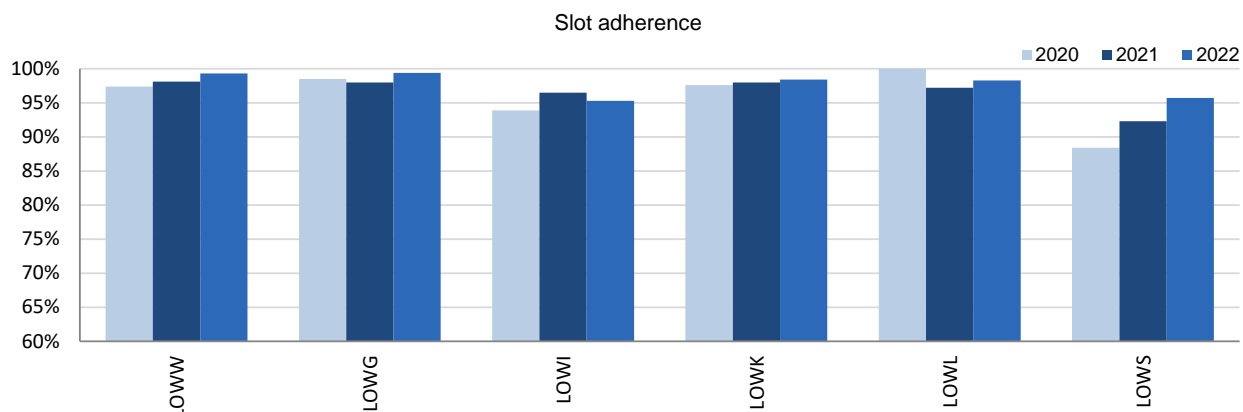
According to the Austrian monitoring report there were no changes in TFC flows / patterns around airports due to the Russian war.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



All Austrian airports showed adherence above 95% and the national average was 98.8%, an improvement with respect to 2021 (97.4%). With regard to the 1.2% of flights that did not adhere, 0.9% was early and 0.3% was late

According to the Austrian monitoring report: *In general, slot adherence improved again, compared to the previous COVID years and has reached the high standards as before COVID-19.*

5. ATC Pre-departure Delay

Vienna is the only Austrian airport subject to the monitoring of this indicator. The performance has deteriorated (LOWW; 2019: 1.56 min/dep.; 2020: 0.75 min/dep.; 2021: 0.63 min/dep.; 2022: 0.92min/dep.) but remained under 2019 values.

According to the Austrian monitoring report: *Performance is stable and improved even in comparison to traffic volumes of previous years, including 2019 and 2018. Main reason is full implementation of Airport CDM since April 2022.*

6. All Causes Pre-departure Delay

Vienna is the only Austrian airport subject to the monitoring of this indicator.

The total (all causes) delay in the actual off block time at Vienna in 2022 increased drastically to 14.60 min/dep. The highest delays per flight were observed from June to August.

According to the Austrian monitoring report: *Increasing traffic caused additional 'All cause departure delays per flight'. No ATC Departure Delays have been applied.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-----------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Vienna-LOWW | 0.49 | 0.14 | 0.19 | | | 97.4% | 98.1% | 99.3% | | | 0.75 | 0.63 | 0.92 | | | 8.27 | 9.75 | 14.60 | | |
| Graz-LOWG | 0 | 0 | 0 | | | 98.5% | 98.0% | 99.4% | | | - | - | - | | | - | - | - | | |
| Innsbruck-LOWI | 0.18 | 0.09 | 0.17 | | | 93.9% | 96.5% | 95.3% | | | - | - | - | | | - | - | - | | |
| Klagenfurt-LOWK | 0 | 0 | 0 | | | 97.6% | 98.0% | 98.4% | | | - | - | - | | | - | - | - | | |
| Linz-LOWL | 0 | 0 | 0 | | | 100.0% | 97.2% | 98.3% | | | - | - | - | | | - | - | - | | |
| Salzburg-LOWS | 0.04 | 0 | 0 | | | 88.4% | 92.3% | 95.7% | | | - | - | - | | | - | - | - | | |

AUSTRIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|--|-----------------|---------------|--|--------------|--------------|--------------|
| <ul style="list-style-type: none"> Austria ECZ represents 3.1% of the SES en route ANS actual costs in 2022 National currency: EUR Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/774 of 13 April 2022 The final version of the plan was adopted and published by Austria in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Austria: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal €) | 174 545 896 | 206 197 475 | 380 743 371 | 201 741 388 | 196 174 218 | 195 739 912 |
| Inflation % | 1.4% | 2.5% | | 2.5% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 105.1 | 107.7 | | 110.3 | 112.5 | 114.8 |
| Real en route costs (€2017) | 167 914 396 | 194 360 427 | 362 274 823 | 186 498 664 | 178 662 064 | 175 470 975 |
| Total en route service units | 1 508 629 | 1 806 569 | 3 315 198 | 3 003 888 | 3 268 998 | 3 504 613 |
| Real en route DUC per service unit (€2017) | 111.30 | 107.59 | 109.28 | 62.09 | 54.65 | 50.07 |
| Austria: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | 174 545 896 | 188 909 523 | 363 455 419 | 210 778 609 | | |
| Inflation % | 1.4% | 2.8% | | 8.6% | | |
| Inflation index (100 in 2017) | 105.1 | 108.0 | | 117.3 | | |
| Real en route costs (€2017) | 167 914 396 | 177 539 651 | 345 454 047 | 184 821 653 | | |
| Total en route service units | 1 508 629 | 1 799 440 | 3 308 069 | 3 247 862 | | |
| Real en route AUC per service unit (€2017) | 111.30 | 98.66 | 104.43 | 56.91 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | in value | 0 | -17 287 952 | -17 287 952 | 9 037 221 | |
| | in % | - | -8.4% | -4.5% | +4.5% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.4 p.p. | | 6.2 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.4 p.p. | | 7.0 p.p. | |
| Real en route costs (€2017) | in value | 0 | -16 820 776 | -16 820 776 | -1 677 011 | |
| | in % | - | -8.7% | -4.6% | -0.9% | |
| Total en route service units | in value | 0 | -7 129 | -7 129 | 243 974 | |
| | in % | - | -0.4% | -0.2% | +8.1% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -8.92 | -4.85 | -5.18 | |
| | in % | - | -8.3% | -4.4% | -8.3% | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TSUs Threshold -10% Threshold +10% Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the en route AUC was -8.3% (or -5.18 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+8.1%) and slightly lower than planned en route costs in real terms (-0.9%, or -1.7 M€2017). It should be noted that actual inflation index in 2022 was +7.0 p.p. higher than planned.</p> | | | | | | |
| En route service units | | | <p>The difference between actual and planned TSUs (+8.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Austro Control) retaining an amount of +5.8 M€2017.</p> | | | |
| En route costs by entity | | | <p>Actual real en route costs are -0.9% (-1.7 M€2017) lower than planned. This is the result of lower costs for the MET service provider (-14.0%, or -1.7 M€2017) and the NSA/EUROCONTROL (-1.7%, or -0.2 M€2017) and higher costs for the main ANSP, Austro Control (+0.1%, or +0.2 M€2017).</p> | | | |
| En route costs for the main ANSP (Austro Control) at charging zone level | | | <p>Costs by entity at ECZ level (M€2017):</p> | | | |
| <p>Slightly higher than planned en route costs in real terms for Austro Control in 2022 (+0.1%, or +0.2 M€2017) result from:</p> <ul style="list-style-type: none"> - Higher staff costs (+3.8%), due to overtime hours to cope with the increase in traffic, impact of the inflation on salaries and the higher pension costs than determined; - Lower other operating costs (-4.7%), mainly due to the inflation index impact (+7.0 p.p.) since in nominal terms the costs are just slightly higher than planned (+1.4%); - Lower depreciation (-9.3%), reflecting delays in investments due to the impact of COVID-19; - Significantly lower cost of capital (-25.6%) reflecting delayed investments and "short-term financing conditions of the Republic of Austria, due to which the average net working capital was subject to interest at 0% in 2021" - Lower exceptional costs (-6.0%), due to the inflation index (+7.0 p.p.) since in nominal terms the actual costs are equal to determined; and, - Lower deduction for VFR exempted flights (-6.6%). | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

AUSTRIA: En route charging zone

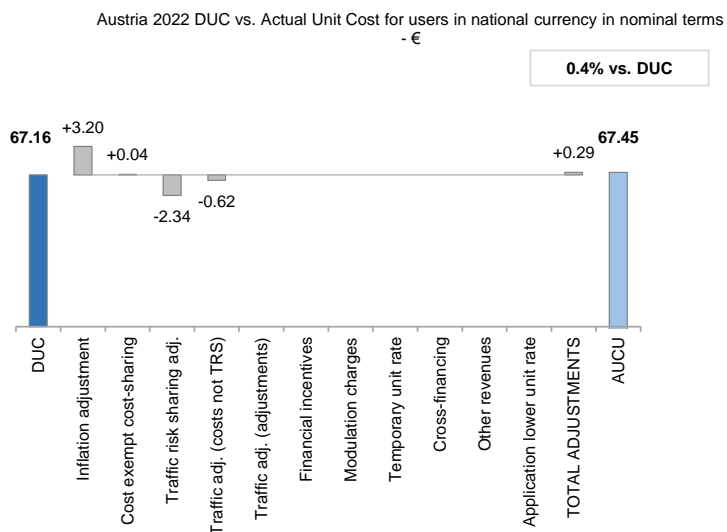
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 67.16 |
| DUC to be charged retroactively | 0.00 |
| DUC | 67.16 |
| Inflation adjustment | 3.20 |
| Cost exempt from cost-sharing | 0.04 |
| Traffic risk sharing adjustment | -2.34 |
| Traffic adj. (costs not TRS) | -0.62 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 0.29 |
| AUCU | 67.45 |
| AUCU vs. DUC | +0.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

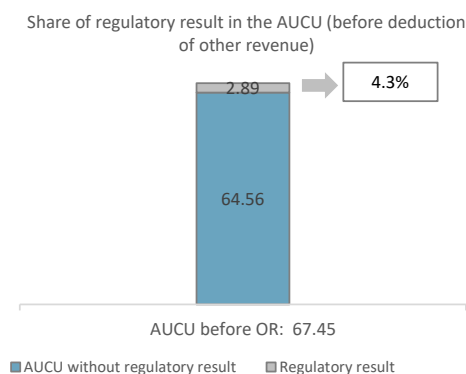
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|------------|-------------|
| New and existing investments | -3 319 | -1.02 |
| Competent authorities and qualified entities costs | -352 | -0.11 |
| Eurocontrol costs | 149 | 0.05 |
| Pension costs | 3 662 | 1.13 |
| Interest on loans | 0 | 0.00 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | 140 | 0.04 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| Austro Control | 6 714 | 2.07 |
| METSP(s) | € '000 | €/SU |
| Austria MET | 2 688 | 0.83 |
| Total charging zone | 9 402 | 2.89 |
| Actual cost for users*** | 219 067 | 67.45 |
| Regulatory result (% AUCU) | 4.3% | 4.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (67.45 €) is +0.4% higher than the nominal DUC (67.16 €). The difference between these two figures (+0.29 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.20 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+0.04 €/SU);
- the deduction of the traffic risk sharing adjustments (-2.34 €/SU); and
- the deduction of the traffic adjustment (-0.62 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 4.3%.

AUSTRIA: En route main ANSP (Austro Control)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 85% debt used in the Performance Plan for RP3. The actual gearing of Austro Control should be reported.

Note 2: The analysis presented in items 11 to 13 excludes MET services of Austro Control since MET data are disclosed separately in en route and terminal reporting tables.

The regulatory result of Austro Control's MET services is shown in item 14.

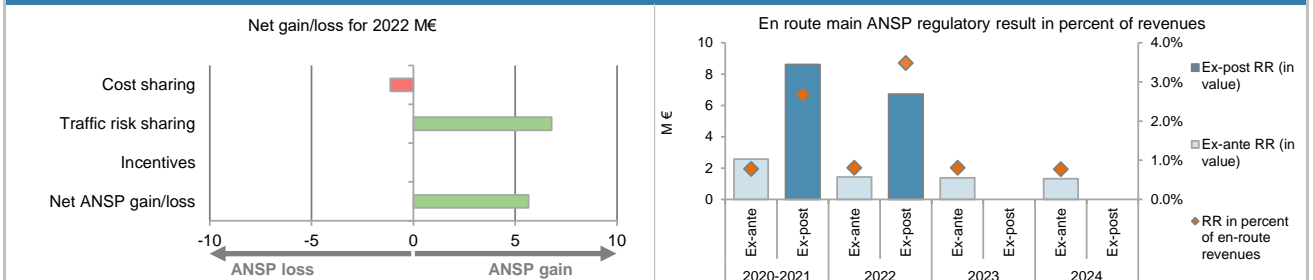
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 15 356 | -10 433 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 528 | 9 656 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -8 808 | -358 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 7 076 | -1 135 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.2% | 8.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 331 281 | 176 989 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -712 | 6 790 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 6 364 | 5 655 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Austro Control planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 103 930 | 124 683 | 228 613 | 126 650 | 122 398 | 117 143 |
| Proportion of financing through equity (in %) (see Note 1) | 15% | 15% | 15% | 15% | 15% | 15% |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| RoE (in value) | 1 168 | 1 402 | 2 570 | 1 424 | 1 376 | 1 317 |
| Ex-ante regulatory result (+/-) for the en route charging zone (see Note 2) | 1 168 | 1 402 | 2 570 | 1 424 | 1 376 | 1 317 |
| Revenue for the en route charging zone | 151 348 | 179 933 | 331 281 | 176 989 | 171 523 | 170 951 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| Austro Control actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 103 930 | 96 839 | 200 768 | 94 225 | | |
| Proportion of financing through equity (in %) (see Note 1) | 15% | 15% | 15% | 15% | | |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | | |
| RoE (in value) | 1 168 | 1 089 | 2 257 | 1 059 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 6 364 | 6 364 | 5 655 | | |
| Ex-post regulatory result (+/-) for the en route charging zone (see Note 2) | 1 168 | 7 452 | 8 621 | 6 714 | | |
| Revenue for the en route charging zone | 151 348 | 170 941 | 322 289 | 193 077 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.8% | 4.4% | 2.7% | 3.5% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 50.0% | 27.9% | 46.3% | | |

13. Focus on the main ANSP regulatory result on en route activity



Austro Control net gain on activity in the Austria en route charging zone in the year 2022

Austro Control reported a net gain of +5.7 M€, as a combination of a loss of -1.1 M€ arising from the cost sharing mechanism, with a gain of +6.8 M€ arising from the traffic risk sharing mechanism.

Austro Control overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+5.7 M€) and the actual RoE (+1.1 M€) amounts to +6.7 M€ (3.5% of the en route revenues). The resulting ex-post rate of return on equity is 46.3%, which is higher than the 7.3% planned in the PP.

AUSTRIA: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| Austria MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 60 | 76 | 135 | 74 | 75 | 75 |
| Revenue for the en route charging zone | 10 846 | 13 173 | 24 019 | 13 019 | 12 814 | 12 873 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.5% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| Austria MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 60 | 777 | 836 | 2 688 | | |
| Revenue for the en route charging zone | 10 846 | 13 119 | 23 966 | 14 459 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.5% | 5.9% | 3.5% | 18.6% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 100.9% | 52.8% | 358.6% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Austria (Austria MET) corresponds to 18.6% of the en route revenues. The ex-post RoE 358.6% is higher than planned 7.3%. | | | | | | |

AUSTRIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|---|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Austria TCZ represents 3.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 6 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 5 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Austria: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 36 466 224 | 41 691 065 | 78 157 289 | 44 823 694 | 43 225 405 | 43 083 154 |
| Inflation % | 1.4% | 2.5% | | 2.5% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 105.1 | 107.7 | | 110.3 | 112.5 | 114.8 |
| Real terminal costs (€2017) | 35 061 142 | 39 298 049 | 74 359 191 | 41 398 122 | 39 302 081 | 38 540 503 |
| Total terminal service units | 83 866 | 96 929 | 180 795 | 185 206 | 201 458 | 215 289 |
| Real terminal DUC per service unit (€2017) | 418.06 | 405.43 | 411.29 | 223.52 | 195.09 | 179.02 |
| Austria: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 36 466 224 | 40 309 443 | 76 775 667 | 49 081 986 | | |
| Inflation % | 1.4% | 2.8% | | 8.6% | | |
| Inflation index (100 in 2017) | 105.1 | 108.0 | | 117.3 | | |
| Real terminal costs (€2017) | 35 061 142 | 37 846 285 | 72 907 427 | 42 885 522 | | |
| Total terminal service units | 83 866 | 94 952 | 178 818 | 160 366 | | |
| Real terminal AUC per service unit (€2017) | 418.06 | 398.58 | 407.72 | 267.42 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -1 381 622 | -1 381 622 | 4 258 292 | |
| | in % | - | -3.3% | -1.8% | +9.5% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.4 p.p. | | 6.2 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.4 p.p. | | 7.0 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -1 451 764 | -1 451 764 | 1 487 400 | |
| | in % | - | -3.7% | -2.0% | +3.6% | |
| Total terminal service units | in value | 0 | -1 977 | -1 977 | -24 840 | |
| | in % | - | -2.0% | -1.1% | -13.4% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -6.85 | -3.57 | 43.90 | |
| | in % | - | -1.7% | -0.9% | +19.6% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +19.6% (or +43.9 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-13.4%) and higher than planned terminal costs in real terms (+3.6%, or +1.5 M€2017). It should be noted that actual inflation index in 2022 was +7.0 p.p. higher than planned.</p> | | | | | | |
| Terminal service units | | | <p>The difference between actual and planned TNSUs (-13.4%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Austro Control) bearing a loss of -1.5 M€2017.</p> | | | |
| Terminal costs by entity | | | <p>Actual real terminal costs are +3.6% (+1.5 M€2017) higher than planned. This is the result of higher costs for the main ANSP, Austro Control (+5.8%, or +2.2 M€2017) and lower costs for the NSA (-39.7%, or -0.1 M€2017), and the MET service provider (-18.2%, or -0.7 M€2017).</p> | | | |
| Terminal costs for the main ANSP (Austro Control) at charging zone level | | | <p>Higher than planned terminal costs in real terms for Austro Control in 2022 (+5.8%, or +2.2 M€2017) result from:</p> <ul style="list-style-type: none"> Significantly higher staff costs (+13.6%), "staff costs were impacted by inflation and effects of Coronavirus on the smaller units. In addition, the pension costs were higher than determined." Lower other operating costs (-3.4%), due to the inflation index impact (+7.0 p.p.) since in nominal terms the costs are higher than planned (+2.7%); Significantly lower depreciation (-8.1%), reflecting delayed investments due to the impact of COVID-19; Significantly lower cost of capital (-29.1%), reflecting delayed investments and "short-term financing conditions of the Republic of Austria, due to which the average net working capital was subject to interest at 0% in 2021"; Lower exceptional costs (-6.0%). | | | |
| | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

AUSTRIA: Terminal charging zone

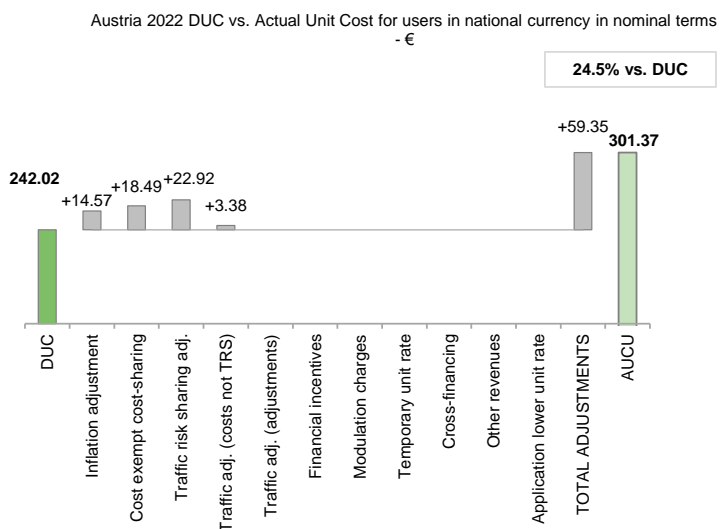
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 242.02 |
| DUC to be charged retroactively | 0.00 |
| DUC | 242.02 |
| Inflation adjustment | 14.57 |
| Cost exempt from cost-sharing | 18.49 |
| Traffic risk sharing adjustment | 22.92 |
| Traffic adj. (costs not TRS) | 3.38 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 59.35 |
| AUCU | 301.37 |
| AUCU vs. DUC | 24.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

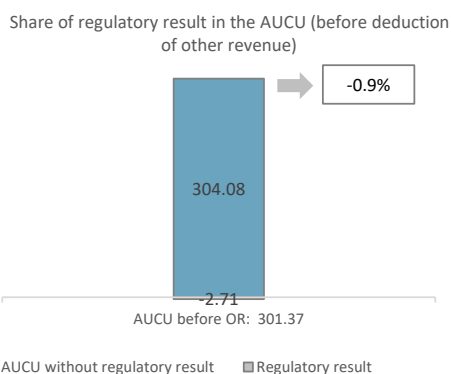
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | -958 | -5.98 |
| | Competent authorities and qualified entities costs | -66 | -0.41 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 3988 | 24.87 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | 2965 | 18.49 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| Austro Control | -1 385 | -8.64 |
| METSP(s) | € '000 | €/SU |
| Austria-MET | 950 | 5.93 |
| Total charging zone | -434 | -2.71 |
| Actual cost for users*** | 48 330 | 301.37 |
| Regulatory result (% AUCU) | -0.9% | -0.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (301.37 €) is +24.5% higher than the nominal DUC (242.02 €). The difference between these two figures (+59.35 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+14.57 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+18.49 €/SU);
- the addition of the traffic risk sharing adjustments (+22.92 €/SU); and
- the addition of the traffic adjustment (+3.38 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -0.9%.

AUSTRIA: Terminal main ANSP (Austro Control)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 85% debt used in the Performance Plan for RP3. The actual gearing of Austro Control should be reported.

Note 2: The analysis presented in items 11 to 13 excludes MET services of Austro Control since MET data are disclosed separately in en route and terminal reporting tables.

The regulatory result of Austro Control's MET services is shown in item 14.

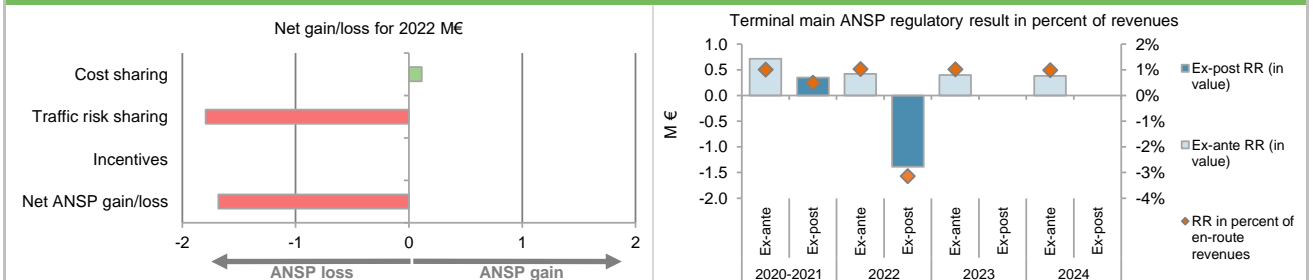
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|-------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 190 | -4 862 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 104 | 2 121 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -792 | 2 853 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 503 | 112 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -1.1% | -13.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 71 061 | 40 787 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -777 | -1 795 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | -274 | -1 682 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Austro Control planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 28 056 | 35 733 | 63 789 | 37 293 | 35 481 | 34 143 |
| Proportion of financing through equity (in %) (see Note 1) | 15% | 15% | 15% | 15% | 15% | 15% |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| RoE (in value) | 315 | 402 | 717 | 419 | 399 | 384 |
| Ex-ante regulatory result (+/-) for the terminal charging zone (see Note 2) | 315 | 402 | 717 | 419 | 399 | 384 |
| Revenue for the terminal charging zone | 33 145 | 37 916 | 71 061 | 40 787 | 39 231 | 39 046 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.0% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| Austro Control actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 28 056 | 27 172 | 55 228 | 26 448 | | |
| Proportion of financing through equity (in %) (see Note 1) | 15% | 15% | 15% | 15% | | |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | | |
| RoE (in value) | 315 | 305 | 621 | 297 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | -274 | -274 | -1 682 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 2) | 315 | 31 | 347 | -1 385 | | |
| Revenue for the terminal charging zone | 33 145 | 36 451 | 69 596 | 43 968 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.0% | 0.1% | 0.5% | -3.1% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 0.7% | 4.1% | -34.0% | | |

13. Focus on main ANSP regulatory result on terminal activity



Austro Control net gain on activity in the Austria terminal charging zone in the year 2022

Austro Control reported a net loss of -1.7 M€, as a combination of a gain of +0.1 M€ arising from the cost sharing mechanism, with a loss of -1.8 M€ arising from the traffic risk sharing mechanism.

Austro Control overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-1.7 M€) and the actual RoE (+0.3 M€) amounts to -1.4 M€ (-3.1% of the terminal revenues). The resulting ex-post rate of return on equity is -34.0%.

AUSTRIA: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|--------|-------|-------|
| Austria-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 23 | 26 | 48 | 26 | 26 | 26 |
| Revenue for the terminal charging zone | 3 165 | 3 615 | 6 780 | 3 871 | 3 820 | 3 857 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| Austria-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 23 | 149 | 172 | 950 | | |
| Revenue for the terminal charging zone | 3 165 | 3 595 | 6 760 | 4 263 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.7% | 4.2% | 2.5% | 22.3% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 51.2% | 28.7% | 338.4% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Austria (Austria-MET) corresponds to 22.3% of the terminal revenues. The ex-post RoE 338.4% is higher than planned 7.3%. | | | | | | |

AUSTRIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|----------------|---------------|--------------|----------------|---------------|-------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Austria | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Austria | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Austria: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 167 914 396 | 194 360 427 | 362 274 823 | 186 498 664 | 178 662 064 | 175 470 975 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 35 061 142 | 39 298 049 | 74 359 191 | 41 398 122 | 39 302 081 | 38 540 503 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 202 975 538 | 233 658 476 | 436 634 014 | 227 896 786 | 217 964 145 | 214 011 478 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 82.7% | 83.2% | 83.0% | 81.8% | 82.0% | 82.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Austria: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 167 914 396 | 177 539 651 | 345 454 047 | 184 821 653 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 35 061 142 | 37 846 285 | 72 907 427 | 42 885 522 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 202 975 538 | 215 385 936 | 418 361 474 | 227 707 176 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 82.7% | 82.4% | 82.6% | 81.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -18 272 540 | -18 272 540 | -189 610 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -7.8% | -4.2% | -0.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.8 p.p. | -0.4 p.p. | -0.7 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>83%</td> <td>17%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>82%</td> <td>18%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>83%</td> <td>17%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td>81%</td> <td>19%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td>82%</td> <td>18%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td>82%</td> <td>18%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 83% | 17% | Actual | 83% | 17% | 2021 | Determined | 83% | 17% | Actual | 82% | 18% | 2020-2021 | Determined | 83% | 17% | Actual | 83% | 17% | 2022 | Determined | 82% | 18% | Actual | 81% | 19% | 2023 | Determined | 82% | 18% | Actual | 82% | 18% | 2024 | Determined | 82% | 18% | Actual | 82% | 18% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -0.1% (-0.2 M€2017) lower than planned, as en route costs are lower than planned by -1.7 M€2017 and terminal costs are higher than planned by +1.5 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (81.2%) is slightly lower than planned in the PP for 2022 (81.8%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Austro Control | 1 843 | 217 776 | 0.8% | 5 329 | 237 044 | 2.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Austria MET | 99 | 16 890 | 0.6% | 3 638 | 18 721 | 19.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 1 942 | 234 666 | 0.8% | 8 968 | 255 766 | 3.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Austria covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +9.0 M€ (+9.4 M€ for en route and -0.4 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 3.5% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (0.8% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Austria gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Austria gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>0.8%</td> </tr> <tr> <td>Ex-post</td> <td>3.5%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 0.8% | Ex-post | 3.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 0.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 3.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Belgium

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BELGIUM

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Skeyes | 82 | B | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Three out of five EoSM components of the ANSP meet the RP3 target level. Compared with 2021, in 2022 the "Safety Policy and Objectives" component was improved and consequently achieved the RP3 target. Two remaining components: "Safety Culture" and "Safety Risk Assessment" are below the RP3 target for three questions and are to be improved during RP3. | | | | | | |

MUAC

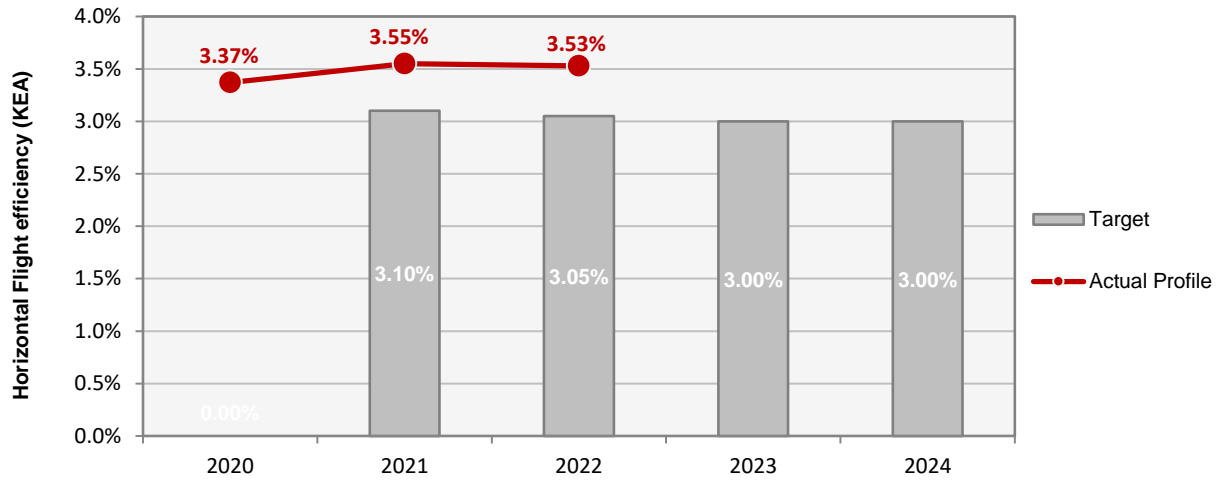
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| MUAC | 95 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> <p>MUAC oversight is exercised in a coordinated manner by the Four States' NSAs (Belgium, Germany, Luxembourg and the Netherlands) over which territories and airspace MUAC provides air traffic services. Safety performance of MUAC is reported separately of these four States as it has been assessed and agreed by the four NSAs.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet the RP3 target levels. Further improvements on three questions were observed during 2022 compared with 2021.</p> <p>IMPORTANT: EASA/European Commission did not receive the verified questionnaire from the NSA on time. This is an important step to receive confirmation that the self-evaluated questionnaire by the ANSP has been actually verified. It should be sent in due time to allow proper and timely drafting of the Monitoring Report.</p> | | | | | | |

BELGIUM-LUXEMBOURG

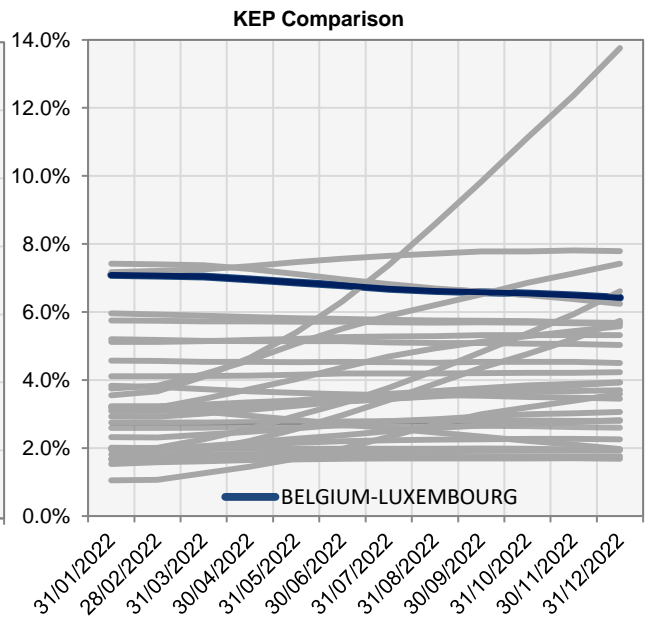
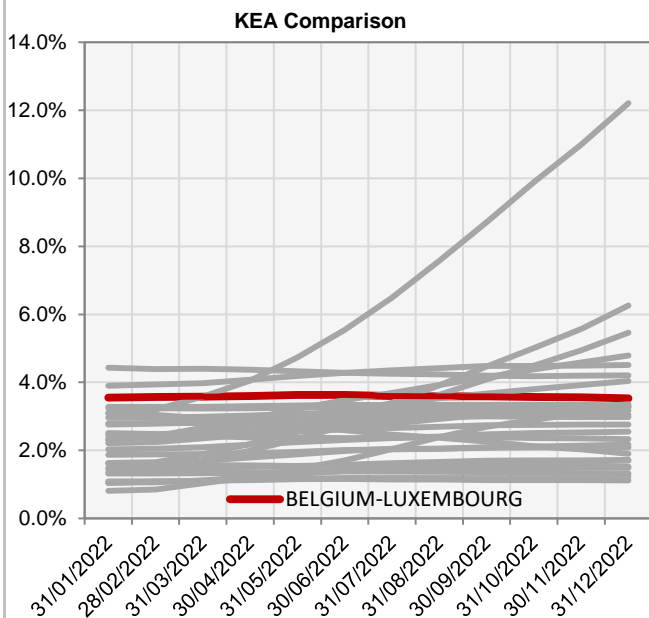
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | n/a | 3.10% | 3.05% | 3.00% | 3.00% |
| Actual performance | 3.37% | 3.55% | 3.53% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 3.55% | 3.57% | 3.58% | 3.60% | 3.63% | 3.63% | 3.60% | 3.59% | 3.59% | 3.57% | 3.56% | 3.53% |
| KEP | 7.09% | 7.07% | 7.04% | 6.96% | 6.87% | 6.78% | 6.68% | 6.62% | 6.58% | 6.54% | 6.49% | 6.42% |
| KES | 6.91% | 6.89% | 6.86% | 6.78% | 6.68% | 6.56% | 6.44% | 6.36% | 6.31% | 6.26% | 6.20% | 6.13% |

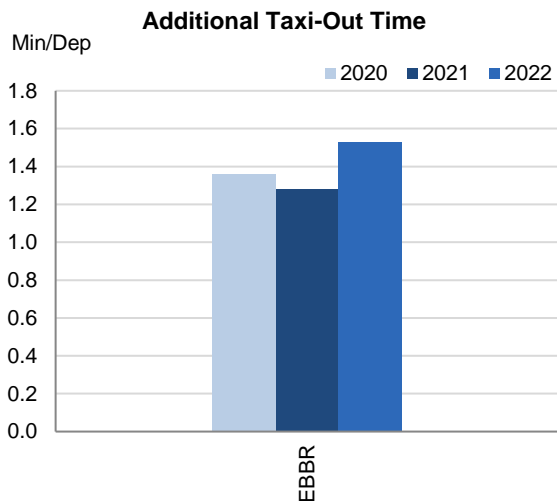


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Belgium identifies only Brussels airport as subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed. Traffic levels in 2022 were still 24% less than in 2019 at Brussels airport, despite the 53% increase with respect to 2021. Both additional times in 2022 are around a 20% higher than in 2021 but still below 2019 levels. The share of CDO flights decreased from 19.6% to 17.1% in 2022.

2. Additional Taxi-Out Time



Additional taxi-out times at Brussels (EBBR; 2019: 2.21 min/dep.; 2020: 1.36 min/dep.; 2021: 1.28 min/dep.; 2022: 1.53 min/dep) increased in 2022 but remained well below the SES average of 2.52 min/dep.

According to the Belgian monitoring report:

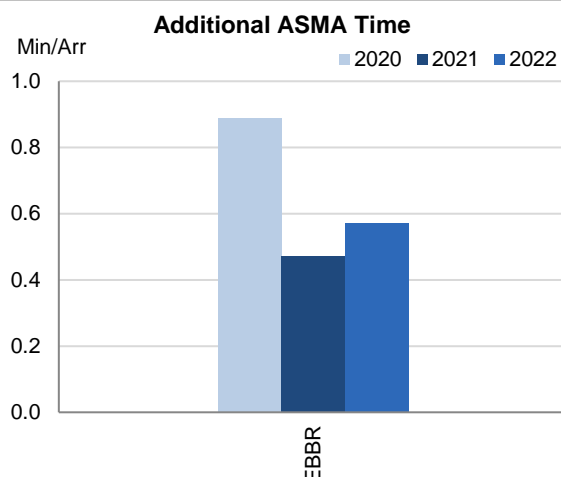
It is noted that some factors included in the Taxi-out time (for example: push-back time) influence this indicator but are beyond control of ANSP. A-CDM is implemented for many years, and continuously being improved. Latest improvements were focused on incorporating de-icing (and hence reducing taxi times).

Taxi-out time includes – for example – push-back time. Those (and other) factors – influencing the indicator – are beyond control of ANSP.

Improvement of A-CDM is also part of Stargate (EU Green Deal Project for more sustainable aviation). Within this framework, skeyes will provide support to Brussels Airport in developing e-learning modules to create awareness and better understanding of the concept for the airport stakeholders and the fellow airports. The Lighthouse will also enhance reporting and monitoring of KPIs within A-CDM towards more efficient and, thus, more sustainable operations.

The monitoring report also mentions: *The additional taxi-out time is computed by EUROCONTROL/PRU and can be retrieved on the SES e-dashboard (<https://www.eurocontrol.int/prudata/dashboard/data/>) but the indicator is not available for all airports. However, the methodology defined by PRU is still under discussion because it remains unclear what the time difference from year to year indicates, or the meaningfulness of an airport A versus airport B comparison, in particular when focussing on the ANSP influence on the performance.*

3. Additional ASMA Time



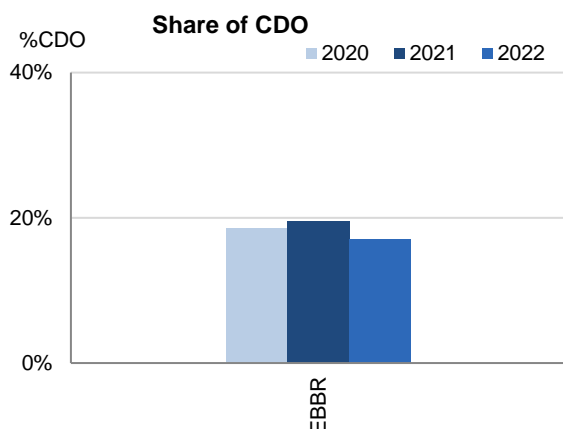
Additional ASMA times at Brussels slightly increased in 2022 (EBBR; 2019: 1 min/arr.; 2020: 0.89 min/arr.; 2021: 0.47 min/arr.; 2022: 0.57 min/arr.)

According to the Belgian monitoring report: ASMA is considered to be intended primarily to capture terminal holdings. Within EBBR, stacking aircraft in holding to absorb delays (similar to EGLL) is seldomly applied. Within a radius of 30 NM around EBBR, radar vectoring is most often applied. Depending on the traffic demand, shorter or longer trajectories are being flown (-> sequencing). However radar vectoring has the advantage that shortest routes can be issued, hence leading to 'best possible' ASMA values, while of course taking into account applicable restrictions (e.g. noise abatement).

Purely for the sake of ASMA, the current working methods (vectoring), probably leave very limited room for improvement. The real challenge is improving predictability in the arrival process (vectoring -> increased use of fixed routings), without deteriorating ASMA. In this context, in summer 2022, skeyes has organized a trial period of increased use of RNP approach at EBBR. Within this period skeyes has promoted RNP APCH with the incentive to fly the full procedure, in order to optimize the vertical as well as horizontal flight efficiency of incoming traffic. Based on lessons learned during the first trial period, skeyes plans to organize RNP trials 2.0, in summer/autumn 2023. These initiatives are part of the Stargate project (EU Green Deal Project for more sustainable aviation).

The monitoring report also mentions: The additional time in terminal airspace (ASMA) is computed by EUROCONTROL/PRU and can be retrieved on the SES e-dashboard (<https://www.eurocontrol.int/prudata/dashboard/data/>). However, the methodology defined by PRU is still under discussion. FABEC trials showed that changes of the ambient air temperature alone can significantly influence the measured performance.

4. Share of arrivals applying CDO



The share of CDO flights for Brussels is 17.1% which is a decrease of 2.5 percentage points but still quite low compared to other airports with similar traffic numbers and the overall RP3 value in 2022 (29.0%).

According to the Belgian monitoring report: skeyes has been running several initiatives/projects to improve the facilitation of CDOs at EBBR. This includes implementation of PBN procedures, promotion of RNP (Required Navigation Performance) procedures (in the framework of Stargate project – see 2.2.2.(d)) and operational demonstration of ISGS (Increased Second Glide Slope) at Brussels airport (in the framework of HERON project, currently in its planning phase; demonstrations are planned to take place in 2024). Besides, skeyes maintains a collaboration with main OPS stakeholders at EBBR (ATC/airport/airlines) through CEM (Collaborative Environmental Management) platform to further reduce the environmental impact of airport operations.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|---------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Brussels-EBBR | 1.36 | 1.28 | 1.53 | | | 0.89 | 0.47 | 0.57 | | | 18% | 20% | 17% | | |

BELGIUM

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:

At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.

At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Information related to Russia's war of aggression against Ukraine

No general answer possible here as it depends a lot of the geographical position of the different States and their related political-military status (e.g. within or outside an alliance), decisions and military means. To mitigate the impact of the Ukraine crisis related operations, Military were actively involved within the EACCC (European Aviation Crisis Coordination Cell) and NM processes at tactical level.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Belgium | 98% | 89% | 92% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Brussels | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#6

Since January 2022, Belgium implemented the R-UUP process, while in March 2022 a trial started to adapt the AUP booking principles coordinated between civ and Mil, resulting in a more stable network for the airline users and ANSPs without impacting too much the flexibility of the military.

ATM-Portal will be used to propose improved routings to aircraft operators in pre-tract. The tool takes into account the expected airspace availability.

The BB-AUP was introduced in the Belgian Airspace

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Belgium | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Brussels | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#7

Please refer to the report of the BEL FUA WG on the results of the BB-AUP trial

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Belgium | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Brussels | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#8

Please refer to the report of the BEL FUA WG on the results of the BB-AUP trial

BELGIUM-LUXEMBOURG

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | n/a | n/a | 0.17 | 0.17 | 0.17 | |
| Actual performance | n/a | n/a | 0.13 | | | |
| NSA's assessment of capacity performance | | | | | | |
| Both en route and Terminal capacity targets were achieved. | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>For skyes, capacity monitoring is executed via the process as described in the manual of the NSA. Relevant data are collected from skyes, FABEC and other entities (Eurocontrol dashboard). If occurring delays a justification can be requested from skyes, with potential corrective action request afterwards.</p> <p>MUAC reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the AFG/PMG (ANSP FABEC Group / Performance Management Group) capacity report. This report is based on MUAC data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values.</p> <p>Even though the FABEC states now have national performance plans, the monitoring for en-route capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate.</p> <p>On a monthly basis and through the AFG/PMG (ANSP FABEC Group / Performance Management Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the FABEC target set and reference or indicative values and on the results and analysis of the en- route capacity achievement.</p> <p>In case the target set and/or the annual/reference values are threatened not to be met, AFG/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at FAB, national and/or ACC level, in order to remedy the situation.</p> <p>The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the AFG/PMG, to the FABEC Council for such appropriate measures, after consultation with the AFG/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values.</p> <p>This monitoring process is described in the FABEC FPC States Performance Process description, which is regularly updated.</p> | | | | | | |
| Capacity Planning | | | | | | |
| <p>Initial Network Operation Plan 2020 launched in Winter 2019/2020 has been overwhelmed by the COVID-19 pandemic and the massive drop of traffic.</p> <p>A new NOP Recovery Plan process initiated and launched by the Network Manager and its first edition was published on 30 April 2020, as European traffic began a slow recovery from its lowest point of just 2,099 flights across the network on 12 April 2020.</p> <p>Since then a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.</p> | | | | | | |

| ATCO in OPS (FTE) | | | | | | | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Brussels ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 87 | 86 | 87 | 92 | |
| Actual | n/a | 84 | 82 | 82 | | | |
| Maastricht ACC | | | | | | | Observations |
| 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| Planned (Perf Plan) | - | - | 290 | 309 | 315 | 317 | |
| Actual | n/a | 286 | 288 | 293 | | | |

Comments regarding ATCO in OPS

MUAC: more ATCOs than anticipated have stopped working in OPS.

Regarding ATCO planning, the Belgian NSAs and ANSPs, together with their FABEC-colleagues, question if ATCO planning figures are legally required by the performance regulation to be included in the Performance Monitoring for RP3, as it is not a prescribed indicator. In addition, we question if this is the right level of detail to be monitored by the EC. Technically the plans are and will always be subject to change, creating the unnecessary burden of tracking, supervising and explaining the figures within the SES performance scheme domain.

However, ATCO hiring and assignment is one of the major driver for current capacity and staffing issues solving. ACE figures are provided and can be referred to. Nevertheless, we consider that they cannot be considered as a commitment where planning figures are requested, due to the high level of uncertainties related to such ATCO recruitment plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3.

There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all, the Labour Law and the Collective Labour Agreement in place in an ANSP play a major role in the availability of ATCOs to fulfill the ops needs. Then, there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, leading to high rate of unforeseen leaves.

Another factor which cannot be significantly mitigated further impacting the availability of ATCOs is the number of suitable applicants, the failure rate of the theoretical training at the academies and the success rate during the on-the-job training phases of trainees.

The final retirement age is firmly set by law, but in many countries employees may go earlier. ANSPs can only assume a certain amount of people opting out/in. It is common culture now that companies offer varying working hours to enable employees to adjust their work to different phases of their life. Again, ANSPs can only assume a certain amount of people opting in/out. On top of all that, future social agreements will significantly determine the ATCO availability per person and by that the total available FTE per ANSP.

Before the planned ATCO FTE can be reported in an harmonised and consistent way, a revised specification for information disclosure is required, clearly describing how to count ATCOs partially working in projects (another uncertainty factor) and (very important) standardising the assumptions for the uncertainties mentioned above.

Application of Corrective Measures for Capacity (if applicable)

skeyes: Brussels ACC has a capacity gap in 2023 and 2024.

In the LSSIP 2022, skeyes developed various initiatives to fill the gap :

- recruitment of new ATCO at the maximum training capacity
- TCAST in 2023
- segregation of traffic flows between EBBR (Brussels) and EBCI (Charleroi)
- upgrade of ATM system

The NSA considers that the actions taken will be sufficient to remedy the situation.

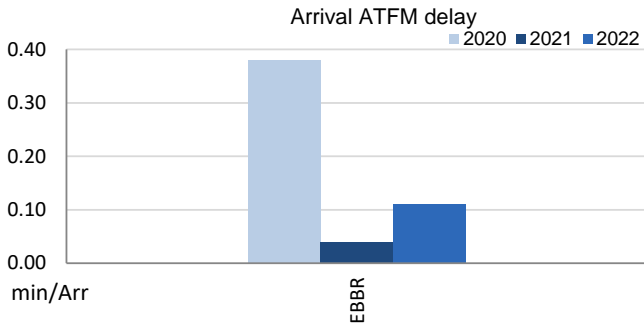
Summary of capacity performance

Belgium & Luxembourg achieved the required en route capacity performance in 2022. There were 1 038k flights handled in the airspace of Belgium and Luxembourg (both Brussels ACC and the Brussels sectors in MUAC). There were 131k minutes of en route ATFM delay attributed to ANSPs in Belgium and Luxembourg airspace.

1. Overview

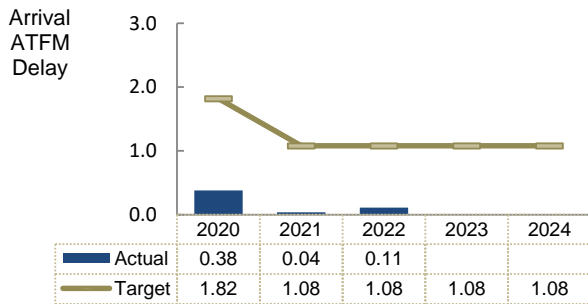
Belgium identifies only Brussels airport as subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of pre-departure delays can be performed. The data quality of the pre-departure delay reporting, which did not allow the calculation of the ATC pre-departure delay in the previous years, has improved allowing the calculation of this indicator in 2022. Traffic levels in 2022 were still 24% less than in 2019 at Brussels airport, despite the 53% increase with respect to 2021. Average arrival ATFM delays in 2022 was 0.11 min/arr, compared to 0.04 min/arr in 2021. ATFM slot adherence has slightly deteriorated (2022: 95.5%; 2021: 96.6%)

2. Arrival ATFM Delay



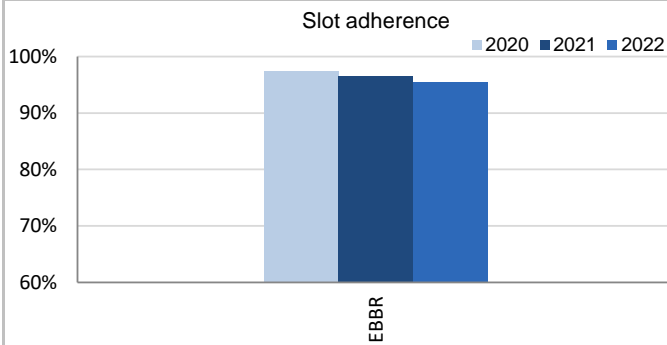
ATFM arrival delays at Brussels have increased in 2022 but remain very low (EBBR; 2019: 0.90 min/arr; 2020: 0.38 min/arr; 2021: 0.04 min/arr; 2022: 0.11 min/arr). Most of these delays were attributed to weather (77%) followed by ATC staffing (11%) and special events (6%)

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Brussels ATFM slot compliance in 2022 was 95.5%. With regard to the 4.5% of flights that did not adhere, 3.1% was early, 1.4% was late. The Belgian monitoring report highlights that *national level and main national individual airports involved are above the 80% threshold of compliance.*

5. ATC Pre-departure Delay

ATC pre-departure delay at Brussels (EBBR: 2022: 0.57 min/dep) is still below the pre-pandemic value (0.78 min/dep)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Brussels increased in 2022 (EBBR: 2020: 13.88 min/dep.; 2021: 15.29 min/dep.; 2022: 20.59 min/dep.)

The highest delays per flight were observed in June-July.

According to the Belgian monitoring report: *Skeyes focusses its effort on the reduction of ATFM delays which are directly under the control of ANSP.*

All cause departure delay is very generic and ATFM delay is only a small contributor. Departure delay can be generated by ATFM en-route delay (not only local airport, but the complete Network) but also reactionary and turnaround delay, technical issues with the aircraft, airport operations, problems with passengers and or luggage, etc. In other words, it is not always possible to address a specific reason as this delay is quite generic.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|---------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Brussels-EBBR | 0.38 | 0.04 | 0.11 | | | 97.4% | 96.6% | 95.5% | | | n/a | n/a | 0.57 | | | 13.88 | 15.29 | 20.59 | | |

BELGIUM-LUXEMBOURG: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Belgium-Luxembourg ECZ represents 3.5% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: Belgium-Luxembourg has submitted a revised draft performance plan in July 2022, currently under detailed examination procedure

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Belgium-Luxembourg: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|---------------|---------------|---------------|---------------|--------------|--------------|
| En route costs (nominal €) | 214 796 327 | 227 401 527 | 442 197 853 | 250 216 368 | 269 472 006 | 271 693 533 |
| Inflation % | 0.4% | 1.7% | | 7.8% | 3.4% | 1.9% |
| Inflation index (100 in 2017) | 103.9 | 105.7 | | 115.6 | 119.6 | 121.8 |
| Real en route costs (€2017) | 207 900 840 | 216 999 041 | 424 899 880 | 220 164 809 | 230 239 134 | 228 481 759 |
| Total en route service units | 1 080 873 | 1 161 104 | 2 241 977 | 2 107 529 | 2 444 554 | 2 542 413 |
| Real en route DUC per service unit (€2017) | 192.35 | 186.89 | 189.52 | 104.47 | 94.18 | 89.87 |

| Belgium-Luxembourg: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|---------------|---------------|---------------|--------------|-------|-------|
| En route costs (nominal €) | 214 796 327 | 216 987 149 | 431 783 476 | 240 279 741 | | |
| Inflation % | 0.4% | 3.2% | | 10.3% | | |
| Inflation index (100 in 2017) | 103.9 | 107.3 | | 118.3 | | |
| Real en route costs (€2017) | 207 900 840 | 204 483 829 | 412 384 668 | 207 326 224 | | |
| Total en route service units | 1 080 873 | 1 166 899 | 2 247 771 | 2 096 176 | | |
| Real en route AUC per service unit (€2017) | 192.35 | 175.24 | 183.46 | 98.91 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------------------------|-------------|---------------|--------------|--------------|------|------|
| En route costs (nominal €) | in value | 0 | -10 414 378 | -10 414 378 | -9 936 627 | | |
| | in % | - | -4.6% | -2.4% | -4.0% | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.5 p.p. | | 2.5 p.p. | | |
| | Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.6 p.p. | 2.7 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -12 515 212 | -12 515 212 | -12 838 585 | | |
| | in % | - | -5.8% | -2.9% | -5.8% | | |
| Total en route service units | in value | 0 | 5 795 | 5 795 | -11 353 | | |
| | in % | - | +0.5% | +0.3% | -0.5% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -11.65 | -6.06 | -5.56 | | |
| | in % | - | -6.2% | -3.2% | -5.3% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -5.3% (or -5.56 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-5.8%, or -12.8 M€2017) and slightly lower than planned TSUs (-0.5%). It should be noted that actual inflation index in 2022 was +2.7 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-0.5%) falls inside the $\pm 2\%$ dead band. Hence loss of en route revenues is borne by the ANSPs (see items 10 to 14).

En route costs by entity

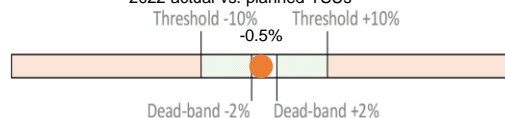
Actual real en route costs are -5.8% (-12.8 M€2017) lower than planned. This is the result of lower costs for the other ANSPs (ANA and MUAC, -12.5%, or -10.0 M€2017) and the main ANSP, skeyes (-2.4%, or -3.0 M€2017), while the NSA/EUROCONTROL costs are higher (+1.1%, or +0.2 M€2017) than planned.

En route costs for the main ANSP (skeyes) at charging zone level

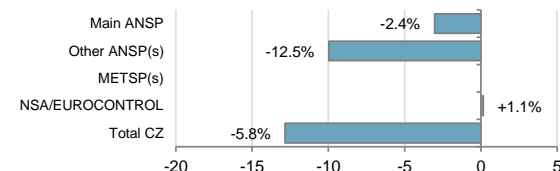
Lower than planned en route costs in real terms for skeyes in 2022 (-2.4%, or -3.0 M€2017) result from:

- Slightly higher staff costs (+0.4%) in real terms, but in nominal terms the staff costs are higher than planned (+2.7%) mainly due to the Belgium automatic mandatory salary indexation of salaries based on the actual inflation (10.3%) which was higher than the planned (7.8%);
- Significantly lower other operating costs (-13.7%), due to delay of certain projects, which has negatively impacted the involvement of external support and license costs.
- Slightly higher depreciation (+0.4%),
- Significantly lower cost of capital (-21.6%), mainly due to a lower fixed asset base.

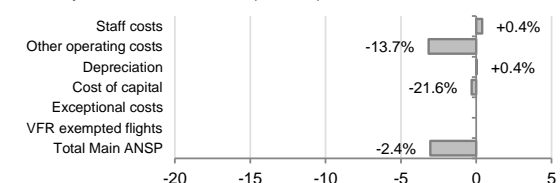
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



BELGIUM-LUXEMBOURG: En route charging zone

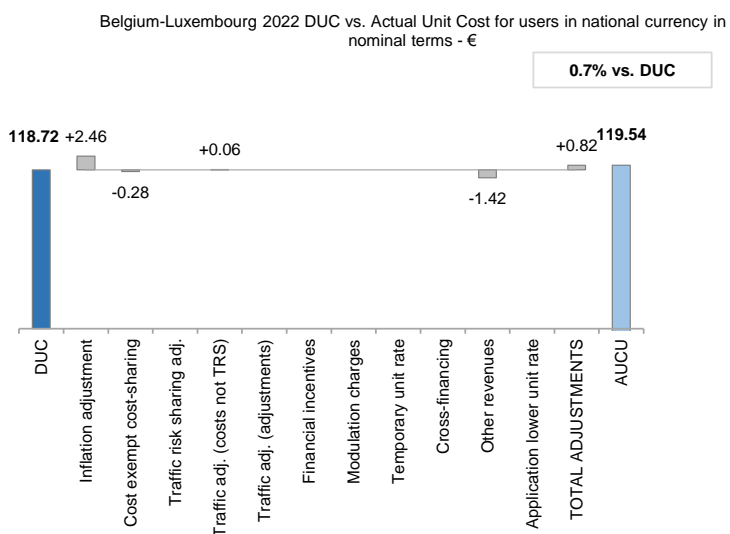
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 120.95 |
| DUC to be charged retroactively | -2.22 |
| DUC | 118.72 |
| Inflation adjustment | 2.46 |
| Cost exempt from cost-sharing | -0.28 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.06 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -1.42 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 0.82 |
| AUCU | 119.54 |
| AUCU vs. DUC | +0.7% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

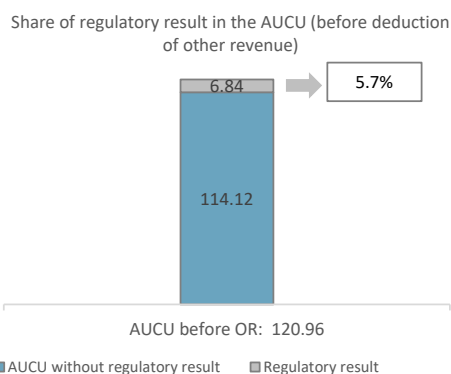
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-------------|--------------|
| by item | New and existing investments | -730 | -0.35 |
| | Competent authorities and qualified entities costs | -27 | -0.01 |
| | Eurocontrol costs | 191 | 0.09 |
| | Pension costs | -30 | -0.01 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -596 | -0.28 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs). □

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| skeyes (Belgium-Lux) | 3 591 | 1.71 |
| ANA LUX | -285 | -0.14 |
| MUAC (Belgium) | 10 705 | 5.11 |
| MUAC (Luxembourg) | 331 | 0.16 |
| METSP(s) | € '000 | €/SU |
| | | |
| Total charging zone | 14 342 | 6.84 |
| Actual cost for users*** | 253 549 | 120.96 |
| Regulatory result (% AUCU) | 5.7% | 5.7% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (119.54 €) is +0.7% higher than the nominal DUC (118.72 €). The difference between these two figures (+0.82 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+2.46 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.28 €/SU);
- the addition of the traffic adjustment (+0.06 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-1.42 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 5.7%.

BELGIUM-LUXEMBOURG: En route main ANSP (skeyes)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

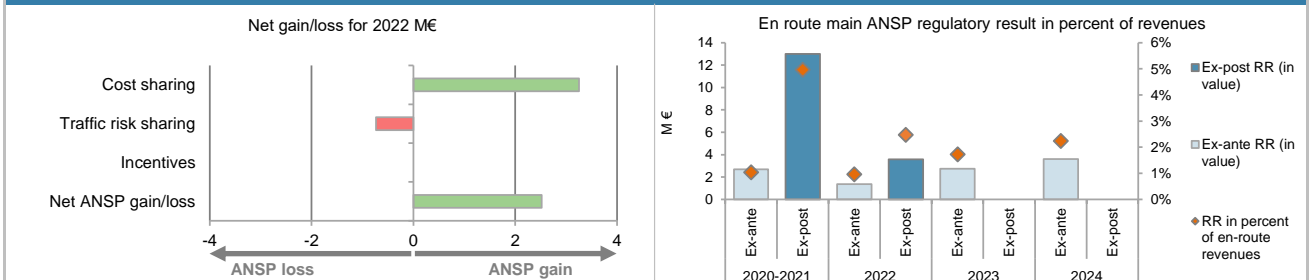
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 8 267 | 445 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 828 | 3 100 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -338 | -292 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 9 757 | 3 254 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.3% | -0.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 246 514 | 136 433 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 637 | -735 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 10 395 | 2 519 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| skeyes (Belgium-Lux) planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 77 960 | 70 127 | 148 088 | 80 148 | 96 528 | 113 624 |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | 74% | 83% |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| RoE (in value) | 1 532 | 1 157 | 2 689 | 1 368 | 2 729 | 3 597 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 532 | 1 157 | 2 689 | 1 368 | 2 729 | 3 597 |
| Revenue for the en route charging zone | 125 844 | 134 183 | 260 028 | 143 554 | 158 956 | 160 967 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.2% | 0.9% | 1.0% | 1.0% | 1.7% | 2.2% |
| Ex-ante RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| skeyes (Belgium-Lux) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 77 960 | 65 584 | 143 544 | 62 860 | | |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | | |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | | |
| RoE (in value) | 1 532 | 1 082 | 2 614 | 1 073 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 10 395 | 10 395 | 2 519 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 532 | 11 477 | 13 009 | 3 591 | | |
| Revenue for the en route charging zone | 125 844 | 136 311 | 262 155 | 145 627 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.2% | 8.4% | 5.0% | 2.5% | | |
| Ex-post RoE pre-tax rate (in %) | 2.2% | 24.4% | 11.1% | 8.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



skeyes net gain on activity in the Belgium-Luxembourg en route charging zone in the year 2022

skeyes reported a net gain of +2.5 M€, as a combination of a gain of +3.3 M€ arising from the cost sharing mechanism, with a loss of -0.7 M€ arising from the traffic risk sharing mechanism.

skeyes overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+2.5 M€) and the actual RoE (+1.1 M€) amounts to +3.6 M€ (2.5% of the en route revenues). The resulting ex-post rate of return on equity is 8.4%, which is higher than the 2.5% planned in the PP.

BELGIUM-LUXEMBOURG: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| ANA LUX planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 74 | 198 | 272 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 7 230 | 7 734 | 14 964 | 7 312 | 7 568 | 7 407 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.0% | 2.6% | 1.8% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 1.8% | 1.8% | 1.8% | 0.0% | 0.0% | 0.0% |
| ANA LUX actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 74 | 601 | 675 | -285 | | |
| Revenue for the en route charging zone | 7 230 | 7 822 | 15 052 | 7 237 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.0% | 7.7% | 4.5% | -3.9% | | |
| Ex-post RoE pre-tax rate (in %) | 1.8% | 14.6% | 8.2% | -4.5% | | |
| MUAC (Belgium) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 62 219 | 61 994 | 124 213 | 81 791 | 85 630 | 88 348 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Belgium) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 1 101 | 1 101 | 10 705 | | |
| Revenue for the en route charging zone | 62 219 | 63 095 | 125 314 | 82 927 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.7% | 0.9% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| MUAC (Luxembourg) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 1 924 | 1 917 | 3 842 | 2 530 | 2 648 | 2 733 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Luxembourg) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 34 | 34 | 331 | | |
| Revenue for the en route charging zone | 1 924 | 1 952 | 3 876 | 2 565 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.8% | 0.9% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 74 | 198 | 272 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 71 374 | 71 645 | 143 019 | 91 633 | 95 847 | 98 488 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.3% | 0.2% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 74 | 1 736 | 1 811 | 10 751 | | |
| Revenue for the en route charging zone | 71 374 | 72 869 | 144 242 | 92 729 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 2.4% | 1.3% | 11.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Belgium-Luxembourg (ANA, MUAC Belgium and MUAC Luxembourg) corresponds to 11.6% of the en route revenues. The RoE cannot be calculated for MUAC, as it has no equity. | | | | | | |

BELGIUM BRUSSELS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Belgium Brussels TCZ represents 2.6% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Belgium Brussels: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 33 736 743 | 35 784 167 | 69 520 910 | 38 337 098 | 43 166 363 | 43 811 473 |
| Inflation % | 0.4% | 1.7% | | 7.8% | 3.4% | 1.9% |
| Inflation index (100 in 2017) | 103.9 | 105.7 | | 115.6 | 119.6 | 121.8 |
| Real terminal costs (€2017) | 32 616 947 | 34 053 447 | 66 670 395 | 33 645 140 | 36 843 247 | 37 032 815 |
| Total terminal service units | 72 921 | 94 454 | 167 375 | 133 421 | 153 720 | 159 060 |
| Real terminal DUC per service unit (€2017) | 447.29 | 360.53 | 398.33 | 252.17 | 239.68 | 232.82 |
| Belgium Brussels: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 33 736 743 | 33 691 784 | 67 428 527 | 37 323 168 | | |
| Inflation % | 0.4% | 3.2% | | 10.3% | | |
| Inflation index (100 in 2017) | 103.9 | 107.3 | | 118.3 | | |
| Real terminal costs (€2017) | 32 616 947 | 31 654 167 | 64 271 114 | 32 089 365 | | |
| Total terminal service units | 72 921 | 93 631 | 166 553 | 131 969 | | |
| Real terminal AUC per service unit (€2017) | 447.29 | 338.07 | 385.89 | 243.16 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -2 092 383 | -2 092 383 | -1 013 931 | |
| | in % | - | -5.8% | -3.0% | -2.6% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.5 p.p. | | 2.5 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.6 p.p. | | 2.7 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -2 399 281 | -2 399 281 | -1 555 774 | |
| | in % | - | -7.0% | -3.6% | -4.6% | |
| Total terminal service units | in value | 0 | -823 | -823 | -1 452 | |
| | in % | - | -0.9% | -0.5% | -1.1% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -22.46 | -12.44 | -9.01 | |
| | in % | - | -6.2% | -3.1% | -3.6% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -3.6% (or -9.01 €2017) lower than the planned DUC. This results from the combination of lower than planned terminal costs in real terms (-4.6%, or -1.6 M€2017) and lower than planned TNSUs (-1.1%). It should be noted that actual inflation index in 2022 was +2.7 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal charging zone 1 service units</p> <p>The difference between actual and planned TNSUs (-1.1%) falls inside the ±2% dead band. Hence loss of terminal revenues is borne by the ANSPs (see items 10 to 13).</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal charging zone 1 costs by entity</p> <p>Actual real terminal costs are -4.6% (-1.6 M€2017) lower than planned. This is the result of lower costs for the main ANSP, skeyes (-4.7%, or -1.5 M€2017) and the NSA (-2.8%, or 0.02 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal charging zone 1 costs for the main ANSP (skeyes) at charging zone level</p> <p>Lower than planned terminal costs in real terms for skeyes in 2022 (-4.7%, or -1.5 M€2017) result from:</p> <ul style="list-style-type: none"> - Lower staff costs (-3.2%), mainly due to the inflation index impact (+2.7 p.p., -1.0% difference in nominal terms). The impact of the automatic inflation indexation on salaries was compensated by lower training costs than planned for the EBBR Tower; - Significantly lower other operating costs (-10.8%), due to delay of certain projects, which has negatively impacted the involvement of external support and license costs. - Slightly higher depreciation (+1.7%), - Significantly lower cost of capital (-25.9%), mainly due to a lower fixed asset base. | | | | | | |

BELGIUM BRUSSELS: Terminal charging zone

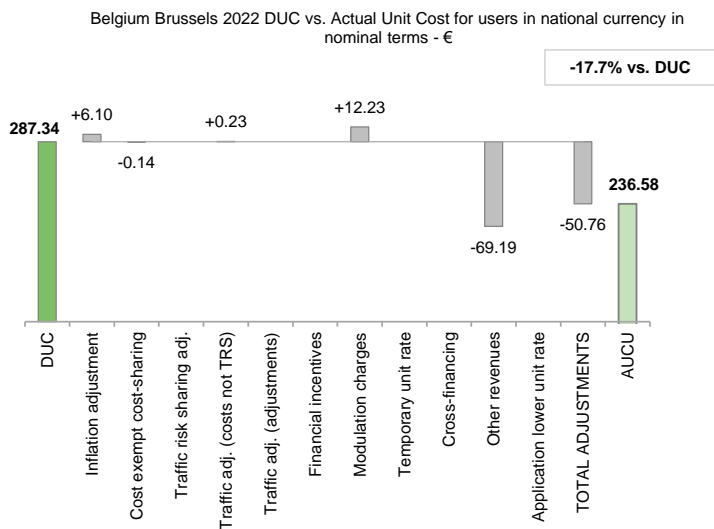
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 289.09 |
| DUC to be charged retroactively | -1.75 |
| DUC | 287.34 |
| Inflation adjustment | 6.10 |
| Cost exempt from cost-sharing | -0.14 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.23 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 12.23 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -69.19 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -50.76 |
| AUCU | 236.58 |
| AUCU vs. DUC | -17.7% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

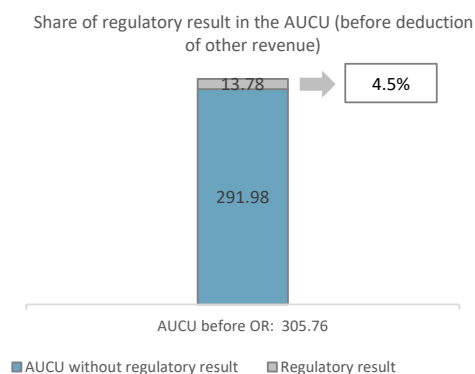
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|------------|--------------|
| by item | New and existing investments | 0 | 0.00 |
| | Competent authorities and qualified entities costs | -18 | -0.14 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -18 | -0.14 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| skeyes | 1 819 | 13.78 |
| METSP(s) | | |
| | | |
| Total charging zone | 1 819 | 13.78 |
| Actual cost for users*** | 40 351 | 305.76 |
| Regulatory result (% AUCU) | 4.5% | 4.5% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (236.58 €) is -17.7% lower than the nominal DUC (287.34 €). The difference between these two figures (-50.76 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+6.10 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.14 €/SU);
- the addition of the traffic adjustment (+0.23 €/SU) for the costs not subject to traffic risk sharing;
- the modulation of charges (+12.23 €/SU); and
- the deduction of the other revenues (-69.19 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 4.5%.

BELGIUM BRUSSELS: Terminal main ANSP (skeys)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

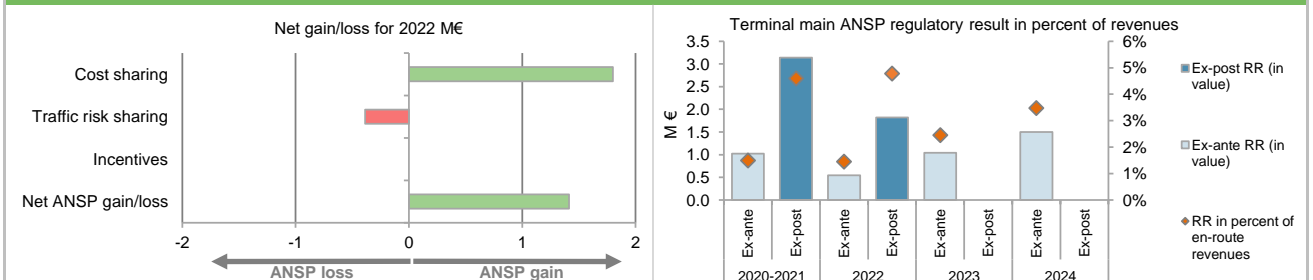
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 2 084 | 996 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 473 | 805 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -66 | 0 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 491 | 1 800 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.5% | -1.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 64 241 | 35 522 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -316 | -387 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 2 175 | 1 414 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| skeys planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 28 427 | 28 182 | 56 609 | 32 001 | 36 884 | 47 381 |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | 74% | 83% |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| RoE (in value) | 559 | 465 | 1 024 | 546 | 1 043 | 1 500 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 559 | 465 | 1 024 | 546 | 1 043 | 1 500 |
| Revenue for the terminal charging zone | 33 130 | 35 164 | 68 294 | 37 678 | 42 485 | 43 117 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.7% | 1.3% | 1.5% | 1.4% | 2.5% | 3.5% |
| Ex-ante RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| skeys actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 28 427 | 24 680 | 53 106 | 23 712 | | |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | | |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | | |
| RoE (in value) | 559 | 407 | 966 | 405 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 2 175 | 2 175 | 1 414 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 559 | 2 582 | 3 141 | 1 819 | | |
| Revenue for the terminal charging zone | 33 130 | 35 255 | 68 385 | 38 096 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.7% | 7.3% | 4.6% | 4.8% | | |
| Ex-post RoE pre-tax rate (in %) | 2.2% | 14.6% | 7.3% | 11.2% | | |

13. Focus on main ANSP regulatory result on terminal activity



skeys net gain on activity in the Belgium terminal charging zone in the year 2022

skeys reported a net gain of +1.4 M€, as a combination of a gain of +1.8 M€ arising from the cost sharing mechanism, with a loss of -0.4 M€ arising from the traffic risk sharing mechanism.

skeys overall regulatory results (RR) for the Belgium terminal charging zone activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.4 M€) and the actual RoE (+0.4 M€) amounts to +1.8 M€ (4.8% of the terminal revenues). The resulting ex-post rate of return on equity is 11.2%, which is higher than the 2.5% planned in the PP.

BELGIUM-LUXEMBOURG: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|--|--------------|----------------|---------------|---------------|----------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Belgium-Luxembourg | | | | | | | |
| Terminal charging zone 1: Belgium Brussels Terminal charging zone 2: Luxembourg | | | | | | | |
| Belgium-Luxembourg: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 207 900 840 | 216 999 041 | 424 899 880 | 220 164 809 | 230 239 134 | 228 481 759 |
| Real terminal costs (€2017) | | 47 043 378 | 49 456 299 | 96 499 677 | 46 890 820 | 50 328 791 | 50 751 819 |
| Real gate-to-gate costs (€2017) | | 254 944 217 | 266 455 340 | 521 399 557 | 267 055 629 | 280 567 925 | 279 233 578 |
| En route share (%) | | 81.5% | 81.4% | 81.5% | 82.4% | 82.1% | 81.8% |
| Belgium-Luxembourg: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 207 900 840 | 204 483 829 | 412 384 668 | 207 326 224 | | |
| Real terminal costs (€2017) | | 47 043 378 | 45 719 716 | 92 763 094 | 45 273 566 | | |
| Real gate-to-gate costs (€2017) | | 254 944 217 | 250 203 545 | 505 147 762 | 252 599 790 | | |
| En route share (%) | | 81.5% | 81.7% | 81.6% | 82.1% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| in value | | 0 | -16 251 795 | -16 251 795 | -14 455 839 | | |
| in % | | 0.0% | -6.1% | -3.1% | -5.4% | | |
| En route share | | | | | | | |
| in p.p. | | -0.0 p.p. | 0.3 p.p. | 0.1 p.p. | -0.4 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -5.4% (-14.5 M€2017) lower than planned, as en route costs are lower than planned by -12.8 M€2017 and terminal costs are lower than planned by -1.6 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (82.1%) is slightly lower than planned in the PP for 2022 (82.4%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| skeyes (Belgium-Lux) | 1 914 | 181 232 | 1.1% | 5 410 | 183 724 | 2.9% | |
| ANA LUX | 0 | 22 070 | 0.0% | -630 | 21 956 | -2.9% | |
| MUAC (Belgium) | 0 | 81 791 | 0.0% | 10 705 | 82 927 | 12.9% | |
| MUAC (Luxembourg) | 0 | 2 530 | 0.0% | 331 | 2 565 | 12.9% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| | | | | | | | |
| Total | 1 914 | 287 623 | 0.7% | 15 816 | 291 172 | 5.4% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Belgium-Luxembourg covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +15.8 M€ (+14.3 M€ for en route and +1.5 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 5.4% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (0.7% of gate-to-gate revenues).</p> | | | | | | | |
| <p>Belgium-Luxembourg gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Bulgaria

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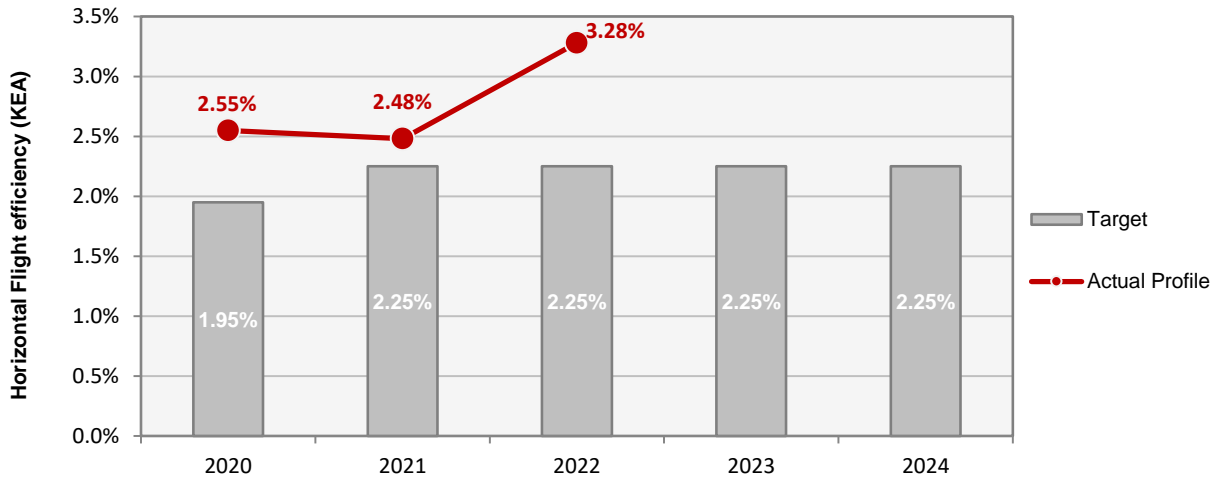
BULGARIA**Monitoring of SAFETY for 2022**

| Effectiveness of Safety Management | | | | | | |
|---|--------------|-----------------------|-------------------------------------|-------------------------------|-------------------------|-------------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Bulatsa | 96 | C | C | C | D | D |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>Four out of five EoSM components of the ANSP meet or exceed already the RP3 EoSM target levels. Only one question in "Safety Risk Management" component is below the RP3 EoSM target level.</p> | | | | | | |

BULGARIA

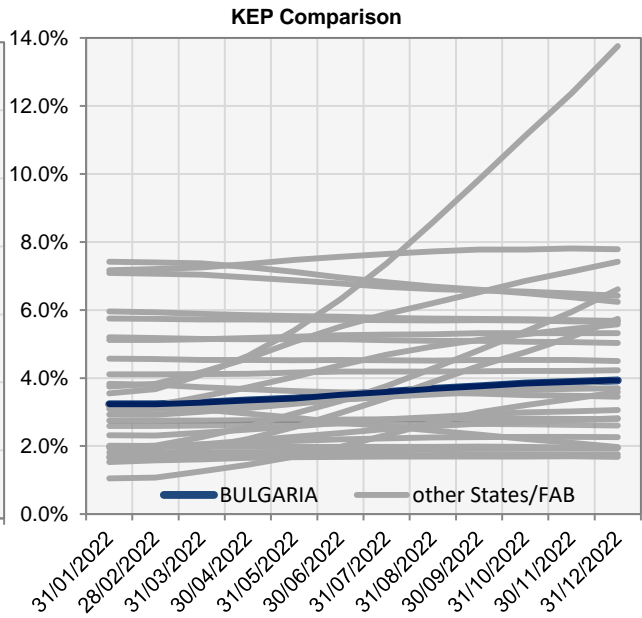
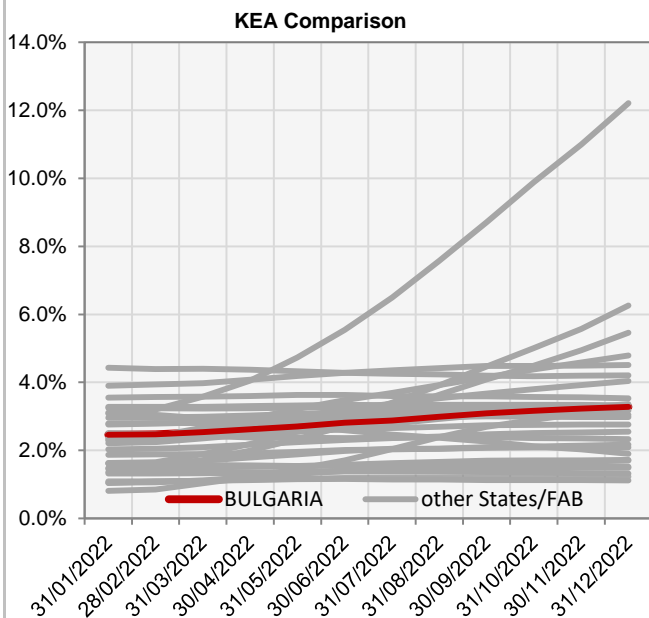
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.95% | 2.25% | 2.25% | 2.25% | 2.25% |
| Actual performance | 2.55% | 2.48% | 3.28% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.46% | 2.47% | 2.54% | 2.62% | 2.70% | 2.81% | 2.88% | 2.99% | 3.09% | 3.16% | 3.23% | 3.28% |
| KEP | 3.23% | 3.23% | 3.28% | 3.34% | 3.40% | 3.51% | 3.59% | 3.68% | 3.76% | 3.84% | 3.89% | 3.93% |
| KES | 2.82% | 2.84% | 2.92% | 3.01% | 3.11% | 3.26% | 3.37% | 3.49% | 3.59% | 3.68% | 3.74% | 3.79% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

BULGARIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The number of military aircraft increased since the outbreak of the war between Russia and Ukraine

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bulgaria | n/a | n/a | n/a | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sofia | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bulgaria | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sofia | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bulgaria | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sofia | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

BULGARIA**CAPACITY - En-route**

| Minutes of ATFM en-route delay | | | | | | Observations |
|--|-------------|-------------|-------------|-------------|-------------|---------------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.17 | 0.04 | 0.08 | 0.07 | 0.08 | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | |
| NSA's assessment of capacity performance | | | | | | |
| <p>During 2022 the number of serviced aircraft gradually increased, approaching 2019 levels. As a follow-up to the events in Ukraine, reciprocal bans have been imposed on the use of EU airspace by Russian aircraft and on the use of Russian Federation airspace by European aircraft. These actions led to a significant extension of the flight time for some destinations (mainly from/to the Far East and the aggregate flow from/to Other ICAO regions in Asia) and to the shift of non-traditional traffic to the Bulgarian airspace. BULATSA carried out the necessary preparations in a timely manner and successfully dealt with the increased air traffic over Bulgaria by developing sector configurations to handle the traffic and providing the necessary number of air traffic controllers. The number of serviced aircraft was 832,923, which is a increase of 58% compared to the previous year but was still below (~ 6.5%) the pre-pandemic 2019.</p> <p>The reported delay figure for Bulgaria in 2022 is 0.00.</p> | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>Monitoring of capacity performance is effected through regular monitoring of the minutes of delay generated, based on the information provided by NM. Monitoring is done on a monthly basis.</p> | | | | | | |

Capacity Planning

Capacity planning is done on a network level as part of the capacity planning processes established by NM. Additionally, BULATSA has established internal capacity planning which is based on the traffic forecast produced by STATFOR, but also based on the internally produced traffic forecasts, which take into account local specifics. The capacity planning process includes:

- HR availability and rostering, both in long term (new ATCO hiring and training) , but also in the medium (seasonal) and short term (monthly). HR requirements are assessed and measures are taken to re-prioritize available resources during the busy periods.
- Medium and long term planning of capacity availability based on technological improvements, introduction of SESAR innovations, system upgrades
- Airspace changes, sectorization and development of interfaces with adjacent FIRs.

The issues and plans are regularly reviewed and reassess in relation to current operational environment and forecasts. A Capacity Management Board is established internally that convenes once a month in order to discuss the latest information and trends. The Capacity Board includes a broad range of experts (technical, operational, financial and legal) in order to ensure that multidisciplinary approach to capacity is undertaken.

War in Ukraine

As a response to the situation, BULATSA introduced the utilization of new airspace configurations (now the lateral split of Sofia east sectors is actively used). A new organization of the interfaces with Turkey were agreed and will be implemented for Summer 2023. Cross training between sector cluster was initiated and successfully completed to allow for more flexibility in the human resources re-allocation. Meetings were carried out with major airspace users (Turkish Airlines) to review flight planning practices and agree on some traffic flow initiatives. Administrative staff with operational competence was reallocated for the peak traffic periods. At the same time, BULATSA has continued the work on key technological projects (rostering system, complexity management system, ATM system) in order to ensure that capacity will be improved in the medium and long term.

ATCO in OPS (FTE)

| Sofia ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
|----------------------------|------|------|------|------|------|------|--------------|
| Planned (Perf Plan) | - | - | 152 | 154 | 155 | 158 | |
| Actual | 156 | 147 | 154 | 156 | | | |

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Bulgaria experienced an increase in traffic from 516k flights in 2021 to 822k flights in 2022, with zero ATFM delay. However, traffic levels were still substantially below the 879k flights in 2019. Although traffic levels were still below 2019 on an annual basis, over the second half of 2022 the number of flights were quite close to 2019, and in some cases exceeded the 2019 summer peaks.

BULGARIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Bulgaria ECZ represents 1.7% of the SES en route ANS actual costs in 2022
- National currency: BGN Exchange rates (1 EUR=) 2017: 1.95543 BGN 2022: 1.95525 BGN
- Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/778 of 13 April 2022
The final version of the plan was adopted and published by Bulgaria in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Bulgaria: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------------|--------------|--------------|---------------|--------------|--------------|
| En route costs (nominal BGN) | 194 468 706 | 206 093 314 | 400 562 021 | 224 347 422 | 247 033 089 | 252 002 257 |
| Inflation % | 1.2% | 1.0% | | 2.0% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 106.4 | 107.5 | | 109.6 | 111.8 | 114.0 |
| Real en route costs (BGN2017) | 186 261 520 | 195 988 055 | 382 249 574 | 210 065 962 | 227 827 874 | 229 524 354 |
| Total en route service units | 1 766 031 | 2 232 254 | 3 998 285 | 3 109 171 | 3 709 112 | 4 126 500 |
| Real en route DUC per service unit (BGN2017) | 105.47 | 87.80 | 95.60 | 67.56 | 61.42 | 55.62 |
| Real en route DUC per service unit (€2017) | 53.94 | 44.90 | 48.89 | 34.55 | 31.41 | 28.44 |
| Bulgaria: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal BGN) | 194 468 706 | 195 845 084 | 390 313 791 | 227 367 002 | | |
| Inflation % | 1.2% | 2.8% | | 13.0% | | |
| Inflation index (100 in 2017) | 106.4 | 109.4 | | 123.6 | | |
| Real en route costs (BGN2017) | 186 261 520 | 184 211 984 | 370 473 503 | 195 751 340 | | |
| Total en route service units | 1 766 031 | 2 269 765 | 4 035 796 | 3 870 654 | | |
| Real en route AUC per service unit (BGN2017) | 105.47 | 81.16 | 91.80 | 50.57 | | |
| Real en route AUC per service unit (€2017) | 53.94 | 41.50 | 46.94 | 25.86 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal BGN) | in value 0 | -10 248 230 | -10 248 230 | 3 019 581 | | |
| | in % - | -5.0% | -2.6% | +1.3% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.8 p.p. | | 11.0 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.9 p.p. | | 14.1 p.p. | | |
| Real en route costs (BGN2017) | in value 0 | -11 776 071 | -11 776 071 | -14 314 622 | | |
| | in % - | -6.0% | -3.1% | -6.8% | | |
| Total en route service units | in value 0 | 37 511 | 37 511 | 761 483 | | |
| | in % - | +1.7% | +0.9% | +24.5% | | |
| Real en route unit cost per service unit (BGN2017) | in value 0.00 | -6.64 | -3.81 | -16.99 | | |
| | in % - | -7.6% | -4.0% | -25.1% | | |
| Real en route unit cost per service unit (€2017) | in value 0.00 | -3.40 | -1.95 | -8.69 | | |
| | in % - | -7.6% | -4.0% | -25.1% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -25.1% (or -16.99 BGN2017, -8.69 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+24.5%) and significantly lower than planned en route costs in real terms (-6.8%, or -14.3 MBGN2017, -7.3 ME2017). It should be noted that actual inflation index in 2022 was +14.1 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+24.5%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (BULATSA) retaining an amount of +3.6 ME2017.

En route costs by entity

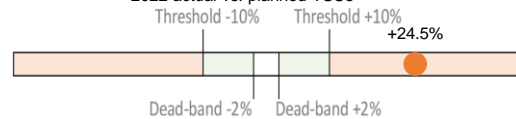
Actual real en route costs are -6.8% (-7.3 ME2017) lower than planned. This is the result higher than planned inflation with a significant impact on costs for the main ANSP, BULATSA (-6.5%, or -6.4 ME2017) and the NSA/EUROCONTROL (-10.8%, or -0.9 ME2017).

En route costs for the main ANSP (BULATSA) at charging zone level

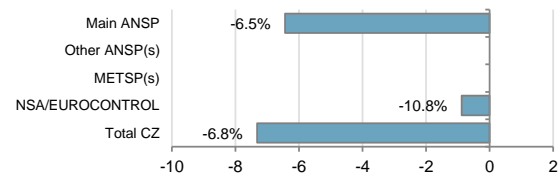
Significantly lower than planned en route costs in real terms for BULATSA in 2022 (-6.5%, or -6.4 ME2017) result mainly from a higher than planned inflation:

- Significantly lower than planned staff costs (-8.6%) in real terms but higher in nominal terms (+3.1%), reported to be due to "BULATSA normalising levels of payment in line with traffic levels increase and in response to high inflation in Bulgaria over 2022 (>15% on a monthly roll-over basis)";
- Significantly lower than planned other operating costs (-19.4%), reported to be mainly due to "lower than expected impairment of receivables, lower mission and training costs, etc";
- Significantly higher than planned depreciation costs (+11.7%), reported to be due to "BULATSA continued fulfilment of all critically important investments and commissioned assets";
- Higher cost of capital (+1.2%).

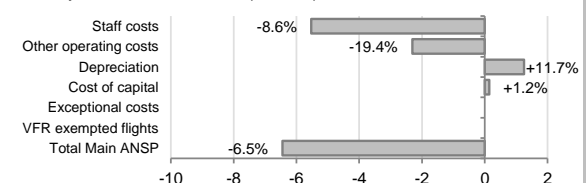
2022 actual vs. planned TSUs



Costs by entity at ECZ level (ME2017):



Costs by nature for main ANSP (ME2017):



BULGARIA: En route charging zone

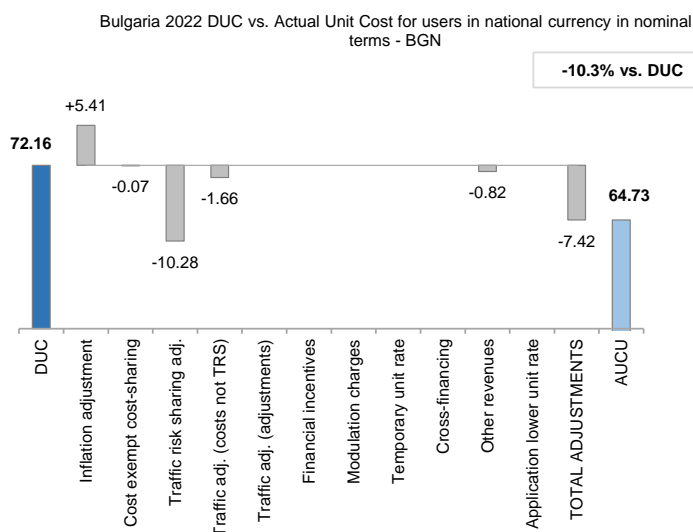
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | BGN/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 72.16 | 36.90 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 72.16 | 36.90 |
| Inflation adjustment | 5.41 | 2.77 |
| Cost exempt from cost-sharing | -0.07 | -0.04 |
| Traffic risk sharing adjustment | -10.28 | -5.26 |
| Traffic adj. (costs not TRS) | -1.66 | -0.85 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -0.82 | -0.42 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | -7.42 | -3.80 |
| AUCU | 64.73 | 33.11 |
| AUCU vs. DUC | -10.3% | -10.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

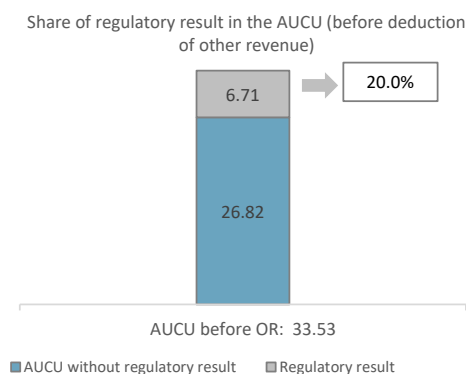
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | BGN '000 | € '000 | BGN/SU | €/SU |
|---|--|-------------|-------------|--------------|--------------|
| by item | New and existing investments | 921 | 471 | 0.24 | 0.12 |
| | Competent authorities and qualified entities costs | -899 | -460 | -0.23 | -0.12 |
| | Eurocontrol costs | -819 | -419 | -0.21 | -0.11 |
| | Pension costs | 523 | 268 | 0.14 | 0.07 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -274 | -140 | -0.07 | -0.04 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | BGN '000 | € '000 | BGN/SU | €/SU |
|-----------------------------------|----------------|----------------|--------------|--------------|
| BULATSA | 50 796 | 25 980 | 13.12 | 6.71 |
| METSP(s) | | | | |
| | | | | |
| Total charging zone | 50 796 | 25 980 | 13.12 | 6.71 |
| Actual cost for users*** | 253 742 | 129 774 | 65.56 | 33.53 |
| Regulatory result (% AUCU) | 20.0% | 20.0% | 20.0% | 20.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (64.73 BGN or 33.11 €) is -10.3% lower than the nominal DUC (72.16 BGN or 36.90 €). The difference between these two figures (-7.42 BGN/SU or -3.80 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+5.41 BGN/SU or +2.77 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.07 BGN/SU or -0.04 €/SU);
- the deduction of the traffic risk sharing adjustments (-10.28 BGN/SU or -5.26 €/SU);
- the deduction of the traffic adjustment (-1.66 BGN/SU or -0.85 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.82 BGN/SU or -0.42 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 20.0%.

BULGARIA: En route main ANSP (BULATSA)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

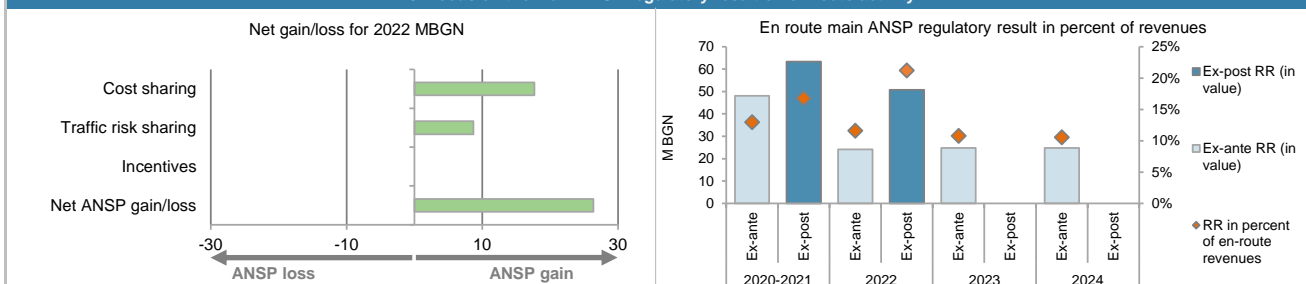
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (BGN '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 8 862 | -4 738 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 2 608 | 20 954 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 383 | 1 444 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 11 853 | 17 661 | | |
| Traffic risk sharing (BGN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.9% | 24.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 352 457 | 198 041 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 307 | 8 714 | | |
| Incentives (BGN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (BGN '000) | 15 159 | 26 375 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 7 753 | 13 489 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| BULATSA planned regulatory result (BGN '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 348 232 | 338 623 | 686 856 | 344 872 | 354 469 | 353 508 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 7.0% | 7.0% | 7.0% | 7.0% | 7.0% | 7.0% |
| RoE (in value) | 24 376 | 23 704 | 48 080 | 24 141 | 24 813 | 24 746 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 24 376 | 23 704 | 48 080 | 24 141 | 24 813 | 24 746 |
| Revenue for the en route charging zone | 180 948 | 190 389 | 371 337 | 208 458 | 230 421 | 234 663 |
| Ex-ante regulatory result (+/-) in percent of revenues | 13.5% | 12.5% | 12.9% | 11.6% | 10.8% | 10.5% |
| Ex-ante RoE pre-tax rate (in %) | 7.0% | 7.0% | 7.0% | 7.0% | 7.0% | 7.0% |
| BULATSA actual regulatory result (BGN '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 348 232 | 339 530 | 687 763 | 348 884 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 7.0% | 7.0% | 7.0% | 7.0% | | |
| RoE (in value) | 24 376 | 23 767 | 48 143 | 24 422 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 15 159 | 15 159 | 26 375 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 24 376 | 38 926 | 63 303 | 50 796 | | |
| Revenue for the en route charging zone | 180 948 | 196 686 | 377 634 | 239 570 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 13.5% | 19.8% | 16.8% | 21.2% | | |
| Ex-post RoE pre-tax rate (in %) | 7.0% | 11.5% | 9.2% | 14.6% | | |

13. Focus on the main ANSP regulatory result on en route activity

**BULATSA net gain on activity in the Bulgaria en route charging zone in the year 2022**

BULATSA reported a net gain of +26.4 MBGN, as a combination of a gain of +17.7 MBGN arising from the cost sharing mechanism, with a gain of +8.7 MBGN arising from the traffic risk sharing mechanism.

BULATSA overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+26.4 MBGN) and the actual RoE (+24.4 MBGN) amounts to +50.8 MBGN (21.2% of the en route revenues). The resulting ex-post rate of return on equity is 14.6%, which is higher than the 7.0% planned in the PP.

Annual Monitoring Report 2022

Local level view

Croatia

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CROATIA

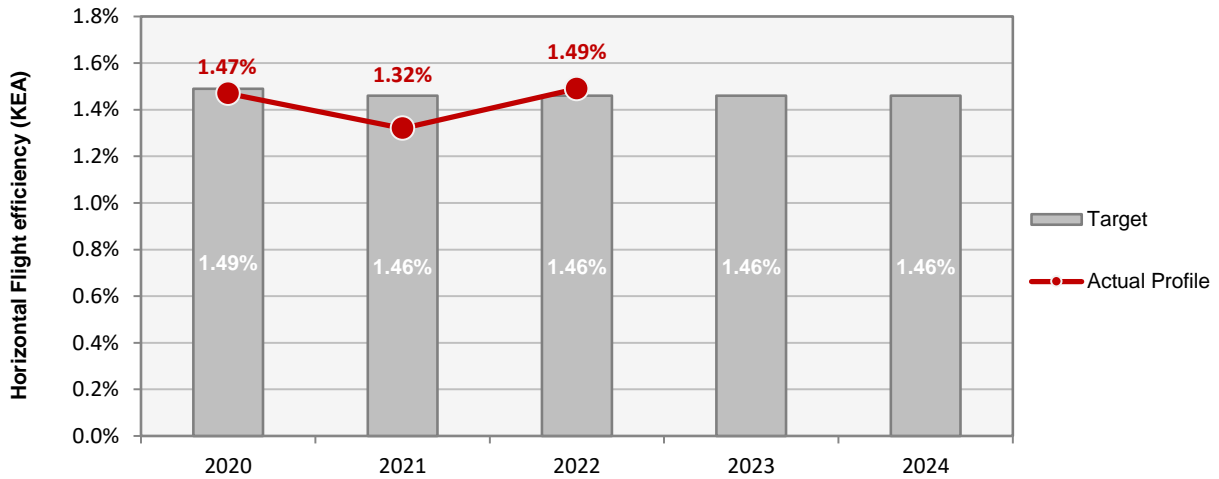
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Croatia Control | 86 | C | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Four out of five EoSM components of the ANSP meet the RP3 EoSM target level. Only "Safety Risk Management" is below 2024 target level. Over 2022, one question was improved for this component, but two remaining questions are still below the RP3 target. | | | | | | |

CROATIA

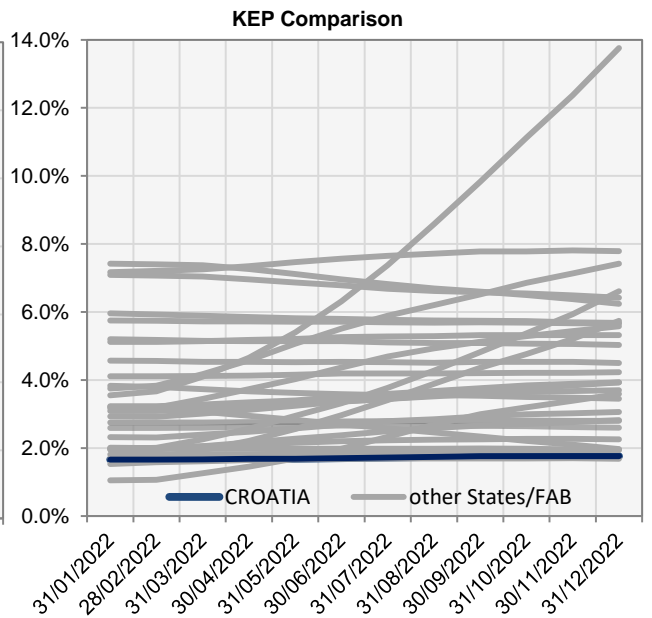
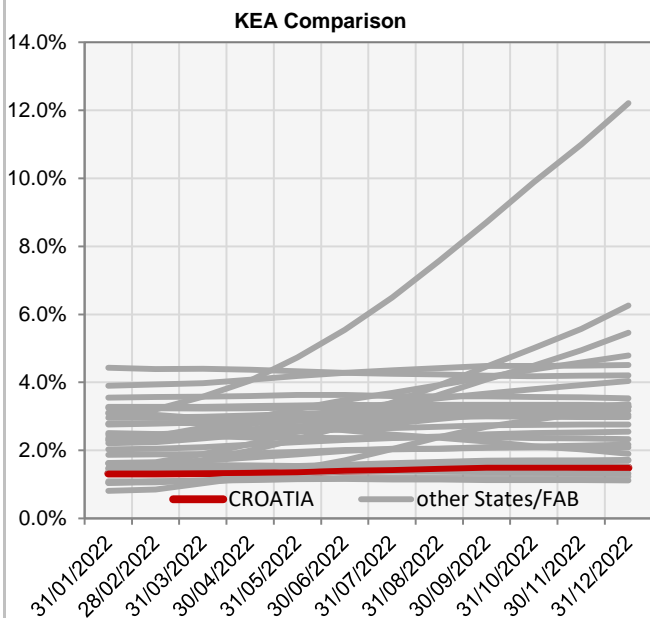
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.49% | 1.46% | 1.46% | 1.46% | 1.46% |
| Actual performance | 1.47% | 1.32% | 1.49% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.32% | 1.32% | 1.33% | 1.34% | 1.36% | 1.40% | 1.42% | 1.46% | 1.49% | 1.49% | 1.49% | 1.49% |
| KEP | 1.66% | 1.66% | 1.67% | 1.68% | 1.68% | 1.70% | 1.72% | 1.74% | 1.76% | 1.76% | 1.76% | 1.76% |
| KES | 1.51% | 1.51% | 1.52% | 1.53% | 1.54% | 1.56% | 1.58% | 1.61% | 1.62% | 1.63% | 1.63% | 1.63% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

CROATIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The analysis can not be provided due to reason that all required data for ENV PI #6, PI #7 and PI #8 are not yet available on the NM/PRU dashboards nor delivered by NM upon request.

During the preparation of the EUROCONTROL CAPAN study in 2022, it was recognized that military traffic has no significant impact on the sector capacities of the LDZO ACC.

Military - related measures implemented or planned to improve capacity

FUA restrictions and CDRs have been implemented which are managed by AMC on ASM Level 2 and notified to NM but were sparsely used or required due to significant decrease of military activities and air traffic affected by COVID-19 crisis.

No remedial measures identified.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Croatia | 88% | 90% | 97% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Zagreb | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#6

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to Regulation (EU) 2019/317 point 6 of Annex VI.

The data regarding ratio of using available airspace structures has been received from NM upon request but the data regarding number of aircraft flying via reserved or segregated airspace and CDRs and number of aircraft that could have planned through those airspace structures have not been delivered by NM upon request nor such data are available on the NM/PRU dashboards.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Croatia | 50% | 50% | 8% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Zagreb | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to Regulation (EU) 2019/317 point 6 of Annex VI.

The data regarding ratio of using available airspace structures has been received from NM upon request but the data regarding number of aircraft flying via reserved or segregated airspace and CDRs and number of aircraft that could have planned through those airspace structures have not been delivered by NM upon request nor such data are available on the NM/PRU dashboards.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|
| Croatia | 19% | 19% | 11% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---------------|------|------|------|------|------|
| Zagreb | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to Regulation (EU) 2019/317 point 6 of Annex VI.

The data regarding ratio of using available airspace structures has been received from NM upon request but the data regarding number of aircraft flying via reserved or segregated airspace and CDRs and number of aircraft that could have planned through those airspace structures have not been delivered by NM upon request nor such data are available on the NM/PRU dashboards.

CROATIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--------------------------------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.43 | 0.09 | 0.16 | 0.17 | 0.17 | |
| Actual performance | 0.00 | 0.07 | 0.57 | | | |

NSA's assessment of capacity performance

The COVID-19 pandemic has had significant impact on the aviation industry in 2020/2021 while bounce back of the traffic in FIR Zagreb was among highest in the Europe resulting in the actual traffic being at the 2019 level, whilst traffic during 2022 summer season (May – September) was 4% higher than in the same period of the 2019.

The ANSP did not meet the set CAP target due to the significant increase of traffic in LDZO ACC where actual traffic was 42% higher than planned in the RP3 Performance plan. As a consequence, limitations occurred during summer season due to unplanned high increase of traffic demand in peak hours.

Croatian Civil Aviation Agency has established an agreement with CroControl Ltd. to convene biannually as part of the performance monitoring process. If the need is determined, a meeting can be organized to discuss the identified issues and/or discrepancies. Croatian Civil Aviation Agency identified the factors that directly affected the increase in minutes of delay compared to what was planned in the performance plan. Recognized factors are:

1. Traffic Levels – The target delay values were determined based on STATFOR's traffic forecast from May 2021, specifically the Base scenario. According to that specific forecast, Croatia was expected to have 501,000 flights in 2022. However, EUROCONTROL's NOP document (2022-2026) considered the STATFOR forecast from October 2021, which indicated that it was realistic to anticipate traffic levels higher than the High scenario of traffic demand. In other words, Croatia was projected to have approximately 700,000 flights. By the end of 2022, CroControl Ltd. recorded over 700,000 flights, which represents a 40% increase in traffic compared to the forecasted levels at the time when the performance plan targets were established.

Furthermore, the South-East Axis stands out as a transportation corridor that experienced the swiftest and most significant recovery of traffic at the European level following the COVID restrictions. This can be exemplified by comparing traffic levels in 2019 with those in 2022. According to data from the Aviation Intelligence Portal, Croatia had only 1,000 fewer flights in 2022 compared to 2019.

2. Number of Available ATCOs – In August 2022, there was an unexpected departure of controllers due to eight resignations classified as extraordinary. Additionally, one individual requested to cease working in operations for personal reasons.

3. Priority of Training for new ATCOs – CroControl Ltd. places high priority on the training of controllers. Consequently, during the summer season, eight ATCO instructors were assigned to provide simulator training to new controllers as part of the ATCO TO program.

Monitoring process for capacity performance

Monitoring of all available KPI's and PI's is done through the Single European Sky Data Portal which is considered as the main source of information.

In the year 2022 there were significant challenges for LDZO ACC capacity KPI as the actual traffic was 42% higher than planned in the RP3 Performance plan while summer season traffic was 4% above historical highest year (2019). As a consequence, limitations occurred during summer season due to unplanned high increase of traffic demand in peak hours.

Capacity Planning

Capacity planning is done in line with NM's initiative for development of a rolling NOP document in which short-term capacity and demand on the Network level is described. The expected traffic outlook is given for eight weeks ahead and revised weekly, while capacity is adapted to traffic demand and reported to NM which assesses the efficiency for planned period. In the planning process on local level, several departments are involved in strategic and tactical development of the plan.

| ATCO in OPS (FTE) | | | | | | | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Zagreb ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 92 | 107 | 115 | 121 | |
| Actual | 107 | 92 | 94 | 101 | | | |

During 2022 there was an increase in the ATCO in OPS FTE compared to 2021 due to the new ATCO licences coupled with increased ATCO in OPS utilisation following high traffic recovery during summer season on Southeast Axis traffic flow.

Difference between planned and actual number of ATCO in OPS FTE is mainly due to higher than planned number of ATCOs in OPS who have stopped working in the OPS room and lower than planned ATCO training success rate.

Application of Corrective Measures for Capacity (if applicable)

The shortage of air traffic controllers is a recognized problem that is being continuously addressed. Sector capacities and available staff have been communicated with the Network Manager, and on a daily basis, additional management of available capacities is carried out to optimize the utilization of resources to the fullest extent possible.

CroControl Ltd. has re-evaluated its sector capacities in late 2022 in order to optimize available resources. The new sector capacity values have been in effect since March 6, 2023.

Furthermore, CroControl Ltd. continuously improves its ATS system, staff training, and sharing of best practices which has resulted in significantly more efficient utilization of existing capacities. This is evidenced by comparing traffic and delays in June and July 2022 to the same period in 2019.

In late 2022, a refreshment course for FMP personnel was conducted, and in 2023, CroControl Ltd., in collaboration with EUROCONTROL, has agreed to share best practices in preparation for the summer period.

Summary of capacity performance

Croatia experienced an increase in traffic from 461k flights in 2021 to 713k flights in 2022, compared to 714k flights in 2019.

Actions taken and results of improved capacity performance are visible in the handling of traffic during June 2022. In June 2022 Croatia had 24k minutes of ATFM delay while handling more than 80k flights.

For comparison in June 2019 approximately 79k flights resulted in around 97k minutes of delay.

CROATIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|--|----------------------|---------------|---------------|--|---------------|---------------|
| · Croatia ECZ represents 1.3% of the SES en route ANS actual costs in 2022 | | | | | | |
| · National currency: HRK Exchange rates (1 EUR=) 2017: 7.46175 HRK 2022: 7.5314 HRK | | | | | | |
| · Performance Plan: RP3 draft performance plan dated 23 December 2021 and found consistent as per Commission Decision (EU) 2022/764 of 13 April 2022 The final version of the plan was adopted and published by Croatia in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Croatia: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal HRK) | 647 976 252 | 642 478 479 | 1 290 454 731 | 650 707 954 | 704 539 471 | 731 453 470 |
| Inflation % | 0.0% | 0.7% | | 1.2% | 1.9% | 2.2% |
| Inflation index (100 in 2017) | 102.4 | 103.1 | | 104.3 | 106.3 | 108.7 |
| Real en route costs (HRK2017) | 636 674 493 | 627 586 017 | 1 264 260 510 | 629 789 408 | 672 089 322 | 686 518 906 |
| Total en route service units | 929 105 | 1 510 181 | 2 439 286 | 1 582 000 | 1 946 000 | 2 251 000 |
| Real en route DUC per service unit (HRK2017) | 685.26 | 415.57 | 518.29 | 398.10 | 345.37 | 304.98 |
| Real en route DUC per service unit (€2017) | 91.84 | 55.69 | 69.46 | 53.35 | 46.29 | 40.87 |
| Croatia: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal HRK) | 647 976 252 | 575 919 155 | 1 223 895 408 | 641 063 203 | | |
| Inflation % | 0.0% | 2.7% | | 10.7% | | |
| Inflation index (100 in 2017) | 102.4 | 105.2 | | 116.4 | | |
| Real en route costs (HRK2017) | 636 674 493 | 554 599 866 | 1 191 274 359 | 570 718 274 | | |
| Total en route service units | 929 105 | 1 518 678 | 2 447 782 | 2 228 835 | | |
| Real en route AUC per service unit (HRK2017) | 685.26 | 365.19 | 486.67 | 256.06 | | |
| Real en route AUC per service unit (€2017) | 91.84 | 48.94 | 65.22 | 34.32 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal HRK) | in value 0 | -66 559 323 | -66 559 323 | -9 644 751 | | |
| | in % - | -10.4% | -5.2% | -1.5% | | |
| Inflation % | in p.p. 0.0 p.p. | 2.0 p.p. | | 9.6 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 2.0 p.p. | | 12.1 p.p. | | |
| Real en route costs (HRK2017) | in value 0 | -72 986 152 | -72 986 152 | -59 071 134 | | |
| | in % - | -11.6% | -5.8% | -9.4% | | |
| Total en route service units | in value 0 | 8 497 | 8 497 | 646 835 | | |
| | in % - | +0.6% | +0.3% | +40.9% | | |
| Real en route unit cost per service unit (HRK2017) | in value 0.00 | -50.38 | -31.62 | -142.04 | | |
| | in % - | -12.1% | -6.1% | -35.7% | | |
| Real en route unit cost per service unit (€2017) | in value 0.00 | -6.75 | -4.24 | -19.04 | | |
| | in % - | -12.1% | -6.1% | -35.7% | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC In 2022, the en route AUC was -35.7% (or -142.04 HRK2017, -19.04 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+40.9%) and significantly lower than planned en route costs in real terms (-9.4%, or -59.1 MHRK2017, -7.9 M€2017). It should be noted that actual inflation index in 2022 was +12.1 p.p. higher than planned.</p> <p>En route service units The difference between actual and planned TSUs (+40.9%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Croatia Control) retaining an amount of +2.8 M€2017.</p> <p>En route costs by entity Actual real en route costs are -9.4% (-7.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Croatia Control (-10.2%, or -8.0 M€2017) and higher costs for the NSA/EUROCONTROL (+1.1%, or +0.07 M€2017).</p> <p>En route costs for the main ANSP (Croatia Control) at charging zone level Significantly lower than planned en route costs in real terms for Croatia Control in 2022 (-10.2%, or -8.0 M€2017) result from: - Significantly lower staff costs (-12.3%), due to not fully realized recruitment plan. This result is also impacted by higher actual inflation index (+12.1 p.p.). - Significantly lower other operating costs (-7.5%), mainly due to inflation index impact (+12.1 p.p.) since in nominal terms other operating costs are higher than planned by 3.2%. - Significantly lower depreciation (-5.4%), due to lower than planned realization of capex due to logistic and production delays and decommissioning of some CC's assets. - Lower cost of capital (-4.7%), due to lower than expected assets base. - Significantly lower deduction for VFR exempted flights (-11.8%).</p> | | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+40.9%</p> | | |
| <p>Costs by entity at ECZ level (M€2017):</p> <p>Main ANSP -10.2%</p> <p>Other ANSP(s) 0%</p> <p>METSP(s) 0%</p> <p>NSA/EUROCONTROL +1.1%</p> <p>Total CZ -9.4%</p> | | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -12.3%</p> <p>Other operating costs -7.5%</p> <p>Depreciation -5.4%</p> <p>Cost of capital -4.7%</p> <p>Exceptional costs 0%</p> <p>VFR exempted flights -11.8%</p> <p>Total Main ANSP -10.2%</p> | | |

CROATIA: En route charging zone

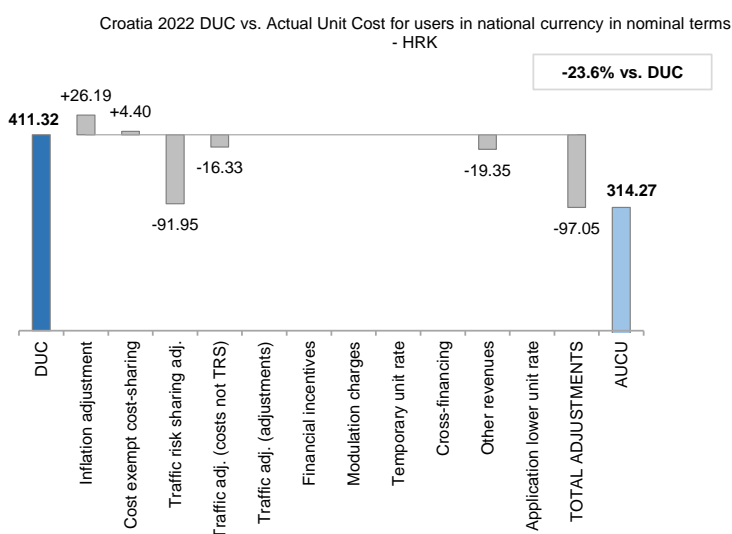
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | HRK/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 411.32 | 54.61 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 411.32 | 54.61 |
| Inflation adjustment | 26.19 | 3.48 |
| Cost exempt from cost-sharing | 4.40 | 0.58 |
| Traffic risk sharing adjustment | -91.95 | -12.21 |
| Traffic adj. (costs not TRS) | -16.33 | -2.17 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -19.35 | -2.57 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | -97.05 | -12.89 |
| AUCU | 314.27 | 41.73 |
| AUCU vs. DUC | -23.6% | -23.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

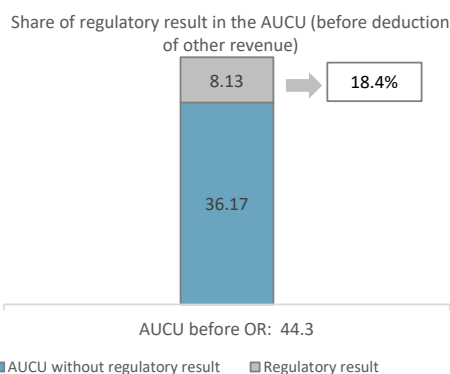
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | HRK '000 | € '000 | HRK/SU | €/SU |
|---|--|--------------|--------------|-------------|-------------|
| by item | New and existing investments | -2 761 | -367 | -1.24 | -0.16 |
| | Competent authorities and qualified entities costs | -302 | -40 | -0.14 | -0.02 |
| | Eurocontrol costs | 796 | 106 | 0.36 | 0.05 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 12 064 | 1 602 | 5.41 | 0.72 |
| Total costs exempt from cost sharing | | 9 797 | 1 301 | 4.40 | 0.58 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | HRK '000 | € '000 | HRK/SU | €/SU |
|-----------------------------------|----------------|---------------|---------------|--------------|
| Croatia Control | 136 532 | 18 128 | 61.26 | 8.13 |
| METSP(s) | HRK '000 | € '000 | HRK/SU | €/SU |
| | | | | |
| Total charging zone | 136 532 | 18 128 | 61.26 | 8.13 |
| Actual cost for users*** | 743 587 | 98 732 | 333.62 | 44.30 |
| Regulatory result (% AUCU) | 18.4% | 18.4% | 18.4% | 18.4% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (314.27 HRK or 41.73 €) is -23.6% lower than the nominal DUC (411.32 HRK or 54.61 €). The difference between these two figures (-97.05 HRK/SU or -12.89 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+26.19 HRK/SU or +3.48 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+4.40 HRK/SU or +0.58 €/SU);
- the deduction of the traffic risk sharing adjustments (-91.95 HRK/SU or -12.21 €/SU);
- the deduction of the traffic adjustment (-16.33 HRK/SU or -2.17 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-19.35 HRK/SU or -2.57 €/SU).

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 18.4%.

CROATIA: En route main ANSP (Croatia Control)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

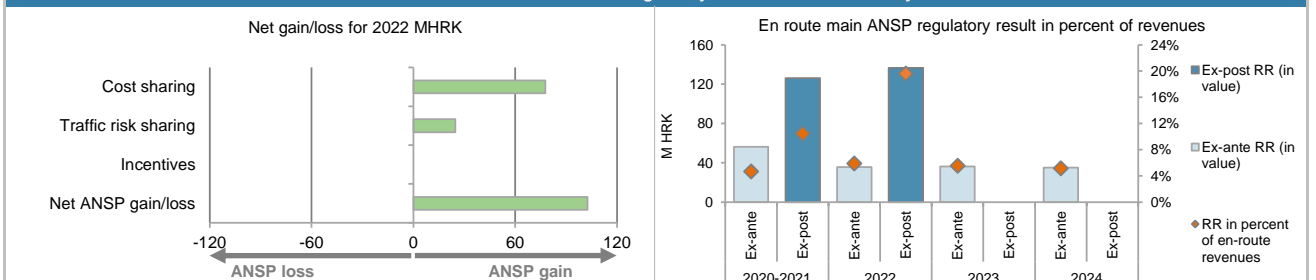
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (HRK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 65 089 | 10 139 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 9 594 | 58 367 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -9 496 | 9 303 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 65 187 | 77 810 | | |
| Traffic risk sharing (HRK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.3% | 40.9% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 122 156 | 561 692 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 909 | 24 714 | | |
| Incentives (HRK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (HRK '000) | 69 095 | 102 524 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 9 180 | 13 613 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Croatia Control planned regulatory result (HRK '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|----------------|----------------|----------------|
| Total asset base | 469 927 | 617 076 | 1 087 004 | 739 625 | 780 782 | 774 738 |
| Proportion of financing through equity (in %) | 85% | 84% | 85% | 76% | 66% | 61% |
| RoE pre-tax rate (in %) | 6.5% | 5.9% | 6.1% | 6.3% | 7.0% | 7.5% |
| RoE (in value) | 25 825 | 30 568 | 56 393 | 35 657 | 36 397 | 35 082 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 25 825 | 30 568 | 56 393 | 35 657 | 36 397 | 35 082 |
| Revenue for the en route charging zone | 607 314 | 596 985 | 1 204 299 | 604 243 | 657 227 | 683 210 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.3% | 5.1% | 4.7% | 5.9% | 5.5% | 5.1% |
| Ex-ante RoE pre-tax rate (in %) | 6.5% | 5.9% | 6.1% | 6.3% | 7.0% | 7.5% |
| Croatia Control actual regulatory result (HRK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 469 927 | 600 799 | 1 070 726 | 636 510 | | |
| Proportion of financing through equity (in %) | 85% | 89% | 87% | 84% | | |
| RoE pre-tax rate (in %) | 6.5% | 5.9% | 6.1% | 6.3% | | |
| RoE (in value) | 25 825 | 31 289 | 57 115 | 34 008 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 69 095 | 69 095 | 102 524 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 25 825 | 100 384 | 126 210 | 136 532 | | |
| Revenue for the en route charging zone | 607 314 | 600 992 | 1 208 306 | 696 628 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.3% | 16.7% | 10.4% | 19.6% | | |
| Ex-post RoE pre-tax rate (in %) | 6.5% | 18.8% | 13.5% | 25.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



Croatia Control net gain on activity in the Croatia en route charging zone in the year 2022

Croatia Control reported a net gain of +102.5 MHRK, as a combination of a gain of +77.8 MHRK arising from the cost sharing mechanism, with a gain of +24.7 MHRK arising from the traffic risk sharing mechanism.

Croatia Control overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+102.5 MHRK) and the actual RoE (+34.0 MHRK) amounts to +136.5 MHRK (19.6% of the en route revenues). The resulting ex-post rate of return on equity is 25.4%, which is higher than the 6.3% planned in the PP.

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Annual Monitoring Report 2022

Local level view

Cyprus

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CYPRUS

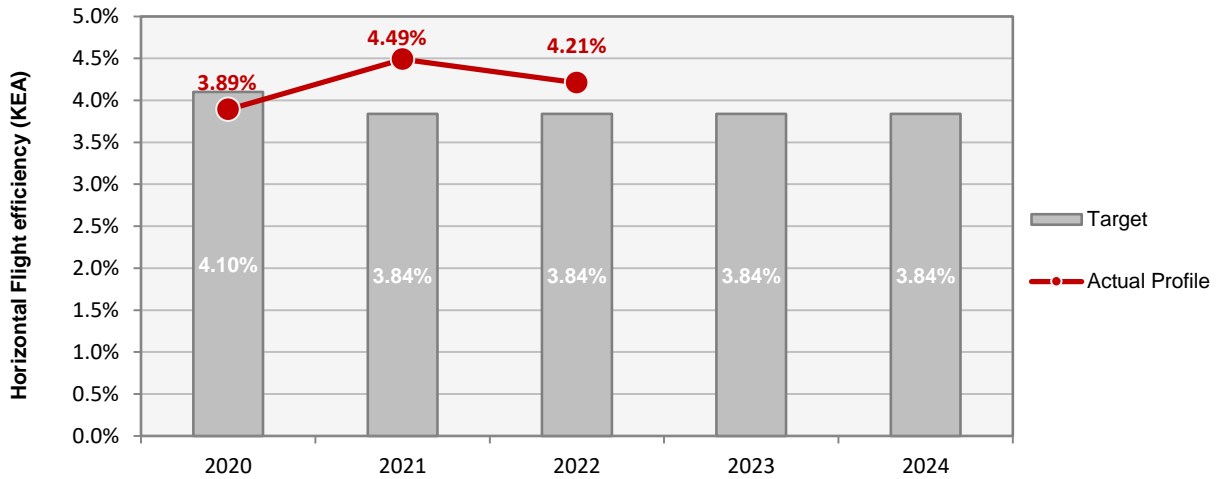
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| CYATS | 71 | C | B | C | C | B |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| <p>Three EoSM components are still below RP3 EoSM target levels. Over 2022, "Safety Culture" and "Safety Promotion" were improved and reached the target levels. However, some degradation was observed for "Safety Policy and Objectives" component. In total, nine questions are expected to be improved for remaining components during RP3 to achieve 2024 targets.</p> | | | | | | |

CYPRUS

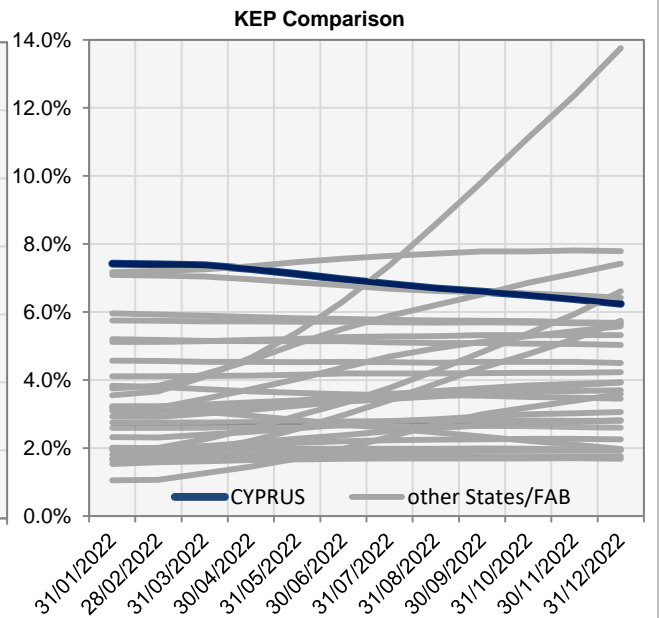
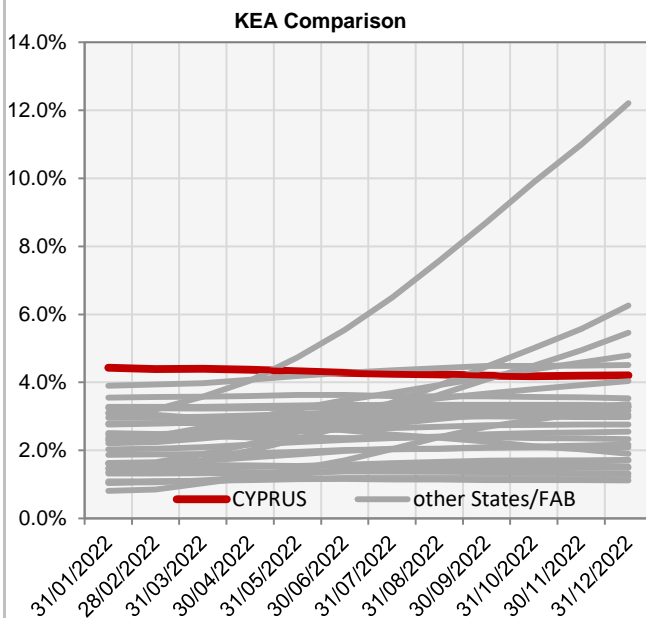
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 4.10% | 3.84% | 3.84% | 3.84% | 3.84% |
| Actual performance | 3.89% | 4.49% | 4.21% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 4.43% | 4.39% | 4.40% | 4.37% | 4.33% | 4.28% | 4.25% | 4.23% | 4.20% | 4.18% | 4.20% | 4.21% |
| KEP | 7.42% | 7.40% | 7.37% | 7.26% | 7.12% | 6.96% | 6.82% | 6.69% | 6.60% | 6.50% | 6.38% | 6.24% |
| KES | 6.73% | 6.73% | 6.68% | 6.61% | 6.52% | 6.41% | 6.33% | 6.27% | 6.23% | 6.16% | 6.04% | 5.93% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

CYPRUS

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The air navigation services in Nicosia FIR are provided with reference to the arrangements which have been established through the implementation of regulation (EC) 2150/2005 "laying down common rules for the flexible use of airspace". (see section 5, Application of FUA)

The implementation of the said Regulation has been achieved through the adoption of the "National Plan for the Implementation of FUA", signed on the 2nd of July 2009. The implementation of the National FUA plan ensures to the maximum possible extent, the most efficient use of airspace, both by civil and military users.

The activities of the National Military Authorities are predominately executed over the National airspace. The cooperation between the national Civil and Military Authorities is excellent and the effect on civil aviation is minimal.

Over the high seas however, which constitute the majority of the Nicosia FIR, a number of foreign Military authorities, most commonly the Russian Navy, USA Navy, French Navy, Israeli Air Force, British Air Force and Turkish military forces, regularly performed operational flights and exercises throughout 2022. Additionally, air carrier operations in Nicosia FIR combined with the different military authorities made it necessary to implement and upgrade the coordination among the willing authorities.

The activities of the British and Israeli forces were coordinated fairly well with the national authorities (AMC) keeping the adverse effect on ATS to minimal effect.

The most significant impact on ATS is caused by the refusal of the Turkish authorities to coordinate or cooperate with Cyprus on the conduct of any military activities in Nicosia FIR. Turkish activity NOTAMS are issued by non-authorized entities relevant to these activities thus imposing a significant level of uncertainty on ATM management in Nicosia FIR adversely affecting capacity. A regular phenomenon is the penetration of Nicosia FIR or Cyprus National airspace in violation to ICAO procedures thus increasing the workload on ATC staff and hence having a detrimental effect on airspace capacity.

The political unrest in the South East Mediterranean region gave rise to the number of USA and Russian operational flights (OAT). These flights were rarely coordinated with the ATS authorities thus causing additional workload to ACC staff. Nevertheless, the situation in 2022 was better than previous years, as a consequence of the COVID-19 pandemic, better coordination with British and Israeli military authorities, enhanced cooperation among AMC/ATC units and aircraft carriers operating in the area and fewer operations of aircraft carriers south of Cyprus.

The designation, by EASA, of the Syrian airspace as "conflict zone" has significantly affected the traffic flows in the north east part of Nicosia FIR.

Military - related measures implemented or planned to improve capacity

There will be continuous efforts to improve further the coordination with third country military authorities using the Nicosia FIR.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Cyprus | 100% | 100% | 100% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Nicosia | 100% | 100% | 100% | | |

Initiatives implemented or planned to improve PI#6

The NSA verifies through audits and inspections that the entity responsible for the tactical management of the airspace (AMC), monitors the planned Vs the actual times of airspace reservations so as to promote the most effective use of reserved or segregated airspace. In the context of its oversight inspections it has raised findings in order to drive positive change and to optimise the application of FUA and, as a result, improvements have been noted. For example, real time activation / de-activation of reserved areas is now implemented through the establishment of real time communications between the ATC Units and Military authorities.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Cyprus | n/a | n/a | 98% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Nicosia | n/a | n/a | 95% | | |

Initiatives implemented or planned to improve PI#7

PRISMIL CURA has been implemented by Cyprus AMC in early 2023. All the data provided are according to the data available on PRISMIL.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Cyprus | n/a | n/a | 98% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Nicosia | n/a | n/a | 80% | | |

Initiatives implemented or planned to improve PI#8

PRISMIL CURA has been implemented by Cyprus AMC in early 2023. All the data provided are according to the data available on PRISMIL.

CYPRUS

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|--|------|------|------|------|------|--------------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | 1.00 | 0.10 | 0.16 | 0.15 | 0.15 | | |
| Actual performance | 0.20 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>Cyprus is in a turbulent region of the world, where geopolitical changes are frequent and, often, dramatic. For this reason, air traffic volatility is very high and traffic demand estimates (hence, ATM performance) can vary as a result of external factors. These factors are beyond the control of the ANSP and the State in general.</p> <p>Furthermore, geopolitical changes can significantly alter the air traffic flows, creating new hotspots and significant capacity constraints. As an example, the Russia - Ukraine conflict has removed a significant traffic flow (and associated revenue) to and from Cyprus. As another example, the categorisation, by EASA, of the Syrian airspace as "conflict zone" has eliminated traffic flows in the north-eastern part of Nicosia FIR. These flows were diverted to the south, saturating the west and south sectors of Nicosia ACC.</p> <p>Capacity performance improved significantly in 2022. However, air traffic demand in 2022 was still lower than the 2019 levels. In this respect, the 2022 results cannot be considered as an accurate indication of future trends.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>The NSA has in place the "NSA procedure for the monitoring of ANS Performance". According to this procedure, the NSA monitors at quarterly intervals the average minutes of enroute ATFM (Air Traffic Flow Management) delay per flight. Based on this, the NSA analyzes the trends and takes the necessary measures, if needed.</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>Capacity planning is done with the Network Manager and is consistent with the required performance.</p> <p>The transfer to the new ACC, which is delayed and planned in late 2023 to mid 2024, is expected to be the source of air traffic delays, which however will be of temporary nature. As the transfer will be done during a low traffic period the effect on the European Network is not expected to be significant. Efforts will be made so that any operation related to the transfer i.e. shadowing operations will be kept to the absolute minimum level so not to absorb HR from the actual ops at the new ACC.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Nicosia ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 78 | 87 | 94 | 100 | |
| Actual | 78 | 73 | 78 | 89 | | | |
| <p>The ATSp has implemented (in mid 2022) a new ATC sector at Larnaca Airport (an extension of the ACC main ATM system) to provide Approach Control Service with surveillance (APS). This new ATC sector will absorb some human resources from the "core" en-route services, which will average between 5-8 FTE towards the end of RP3.</p> <p>To mitigate this, the ATSp has (in December 2021) agreed with the Unions some new working arrangements which will allow current ATC Tower ATCOs to continue their career by staying at Larnaca Airport and operating this new service. An effort to modify the ATCO employment contract (the, so called, "scheme of services") is ongoing. The aim of the modification will be to significantly reduce the period between recruitment and assuming operational duties. In any case, the recruitment plan for new ATCOs will continue to be implemented so that the en-route service will continue to be provided without significant capacity constraints.</p> <p>In conclusion, some air traffic delays may be attributed to these restructuring developments and the operation of the new ATC sector. The precise impact cannot be estimated at the moment since the service has just began. Nevertheless, the NM has confirmed that this new service will have significant net capacity benefits in the longer term.</p> | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Nil | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Cyprus experienced an increase in traffic from 252k flights in 2021, to 344k flights in 2022, with practically zero ATFM delay. However, traffic levels were still substantially below the 411k flights in 2019.</p> | | | | | | | |

CYPRUS: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|--|--------------|--------------|---|--------------|--------------|--------------|
| <ul style="list-style-type: none"> Cyprus ECZ represents 0.9% of the SES en route ANS actual costs in 2022 National currency: EUR Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2422 of 5 December 2022 The final version of the plan was adopted and published by Cyprus in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Cyprus: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal €) | 50 193 829 | 54 658 604 | 104 852 432 | 60 180 628 | 67 188 233 | 70 838 487 |
| Inflation % | 0.0% | 0.5% | | 5.3% | 2.3% | 2.0% |
| Inflation index (100 in 2017) | 101.3 | 101.8 | | 109.1 | 111.6 | 113.9 |
| Real en route costs (€2017) | 49 782 212 | 54 033 965 | 103 816 177 | 56 802 749 | 62 482 520 | 65 059 225 |
| Total en route service units | 852 579 | 1 229 858 | 2 082 437 | 1 837 000 | 2 129 000 | 2 235 000 |
| Real en route DUC per service unit (€2017) | 58.39 | 43.94 | 49.85 | 30.92 | 29.35 | 29.11 |
| Cyprus: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | 49 274 508 | 52 158 821 | 101 433 328 | 57 745 697 | | |
| Inflation % | 0.0% | 2.3% | | 8.1% | | |
| Inflation index (100 in 2017) | 101.3 | 103.6 | | 112.0 | | |
| Real en route costs (€2017) | 48 862 891 | 50 930 635 | 99 793 526 | 53 592 800 | | |
| Total en route service units | 852 579 | 1 266 300 | 2 118 878 | 1 788 097 | | |
| Real en route AUC per service unit (€2017) | 57.31 | 40.22 | 47.10 | 29.97 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | | | | | | |
| in value | -919 321 | -2 499 783 | -3 419 104 | -2 434 931 | | |
| in % | -1.8% | -4.6% | -3.3% | -4.0% | | |
| Inflation % | | | | | | |
| in p.p. | 0.0 p.p. | 1.8 p.p. | | 2.8 p.p. | | |
| Inflation index (100 in 2017) | | | | | | |
| in p.p. | 0.0 p.p. | 1.8 p.p. | | 2.9 p.p. | | |
| Real en route costs (€2017) | | | | | | |
| in value | -919 321 | -3 103 329 | -4 022 651 | -3 209 949 | | |
| in % | -1.8% | -5.7% | -3.9% | -5.7% | | |
| Total en route service units | | | | | | |
| in value | 0 | 36 442 | 36 442 | -48 903 | | |
| in % | - | +3.0% | +1.7% | -2.7% | | |
| Real en route unit cost per service unit (€2017) | | | | | | |
| in value | -1.08 | -3.72 | -2.76 | -0.95 | | |
| in % | -1.8% | -8.5% | -5.5% | -3.1% | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the en route AUC was -3.1% (or -0.95 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-5.7%, or -3.2 M€2017) and lower than planned TSUs (-2.7%). It should be noted that actual inflation index in 2022 was +2.9 p.p. higher than planned.</p> | | | <p>Costs by entity at ECZ level (M€2017):</p> | | | |
| <p>En route service units</p> <p>The difference between actual and planned TSUs (-2.7%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DCAC Cyprus) bearing a loss of -0.8 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>En route costs by entity</p> <p>Actual real en route costs are -5.7% (-3.2 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DCAC Cyprus (-6.5%, or -2.5 M€2017), the MET service provider (-15.5%, or -0.6 M€2017) and the NSA/EUROCONTROL (-1.0%, or -0.2 M€2017).</p> | | | | | | |
| <p>En route costs for the main ANSP (DCAC Cyprus) at charging zone level</p> <p>Significantly lower than planned en route costs in real terms for DCAC Cyprus in 2022 (-6.5%, or -2.5 M€2017) result from:</p> <ul style="list-style-type: none"> - Lower staff costs (-2.6%) although in nominal terms there is no difference, - Significantly lower other operating costs (-9.5%) due to a delay in the operation of the new ACC building in Kokkinotrimithia, - Lower depreciation (-2.5%) resulting from lower than foreseen actual cost of two investments, - Significantly lower cost of capital (-23.1%) due to the postponement of pre-payments for investments planned to be implemented later than originally foreseen in the Performance Plan. | | | | | | |

CYPRUS: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

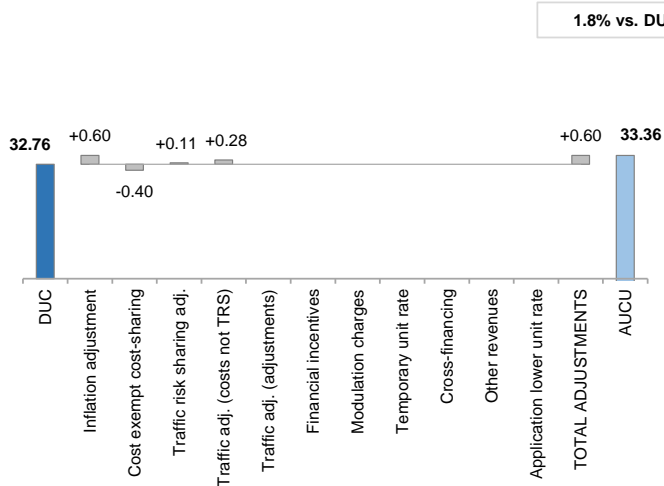
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Cyprus 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 34.71 |
| DUC to be charged retroactively | -1.95 |
| DUC | 32.76 |
| Inflation adjustment | 0.60 |
| Cost exempt from cost-sharing | -0.40 |
| Traffic risk sharing adjustment | 0.11 |
| Traffic adj. (costs not TRS) | 0.28 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 0.60 |
| AUCU | 33.36 |
| AUCU vs. DUC | +1.8% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

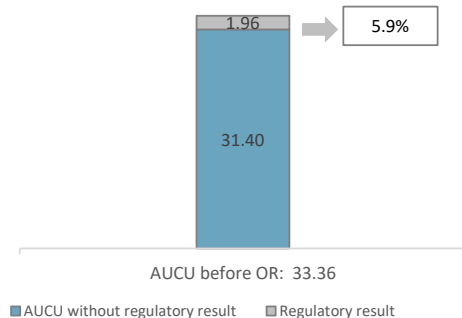
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | -555 | -0.31 |
| | Competent authorities and qualified entities costs | -188 | -0.10 |
| | Eurocontrol costs | 33 | 0.02 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -709 | -0.40 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| DCAC Cyprus | 2 819 | 1.58 |
| METSP(s) | € '000 | €/SU |
| Cyprus MET | 690 | 0.39 |
| Total charging zone | 3 509 | 1.96 |
| Actual cost for users*** | 59 643 | 33.36 |
| Regulatory result (% AUCU) | 5.9% | 5.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (33.36 €) is +1.8% higher than the nominal DUC (32.76 €). The difference between these two figures (+0.60 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+0.60 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.40 €/SU);
- the addition of the traffic risk sharing adjustments (+0.11 €/SU); and
- the addition of the traffic adjustment (+0.28 €/SU) for the costs not subject to traffic risk sharing to be charged in future years.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 5.9%.

CYPRUS: En route main ANSP (DCAC Cyprus)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

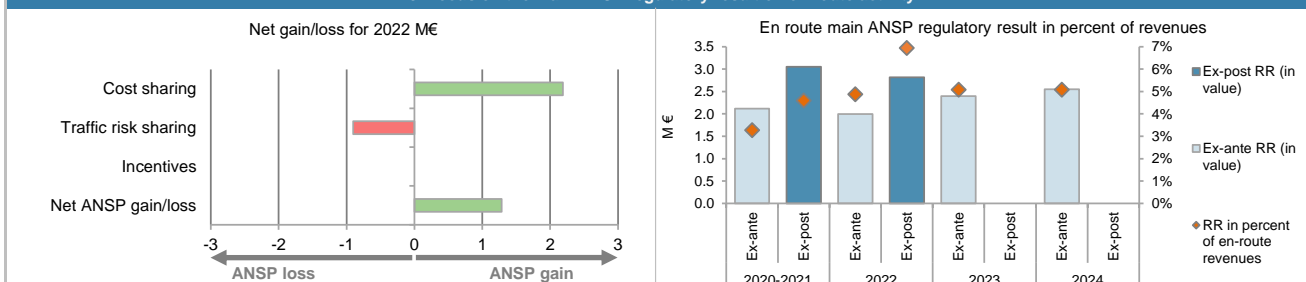
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -594 | 1 728 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 556 | 972 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -514 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -37 | 2 186 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.7% | -2.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 64 796 | 41 042 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 134 | -902 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 1 096 | 1 283 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DCAC Cyprus planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 15 785 | 28 643 | 44 428 | 39 970 | 45 195 | 44 713 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 4.7% | 4.8% | 4.8% | 5.0% | 5.3% | 5.7% |
| RoE (in value) | 742 | 1 375 | 2 117 | 1 999 | 2 395 | 2 549 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 742 | 1 375 | 2 117 | 1 999 | 2 395 | 2 549 |
| Revenue for the en route charging zone | 31 208 | 33 588 | 64 796 | 41 042 | 47 138 | 50 245 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.4% | 4.1% | 3.3% | 4.9% | 5.1% | 5.1% |
| Ex-ante RoE pre-tax rate (in %) | 4.7% | 4.8% | 4.8% | 5.0% | 5.3% | 5.7% |
| DCAC Cyprus actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 15 785 | 25 362 | 41 148 | 30 719 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 4.7% | 4.8% | 4.8% | 5.0% | | |
| RoE (in value) | 742 | 1 217 | 1 959 | 1 536 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 1 096 | 1 096 | 1 283 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 742 | 2 314 | 3 056 | 2 819 | | |
| Revenue for the en route charging zone | 31 208 | 35 278 | 66 486 | 40 597 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.4% | 6.6% | 4.6% | 6.9% | | |
| Ex-post RoE pre-tax rate (in %) | 4.7% | 9.1% | 7.4% | 9.2% | | |

13. Focus on the main ANSP regulatory result on en route activity



DCAC Cyprus net gain on activity in the Cyprus en route charging zone in the year 2022

DCAC Cyprus reported a net gain of +1.3 M€, as a combination of a gain of +2.2 M€ arising from the cost sharing mechanism, with a loss of -0.9 M€ arising from the traffic risk sharing mechanism.

DCAC Cyprus overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+1.3 M€) and the actual RoE (+1.5 M€) amounts to +2.8 M€ (6.9% of the en route revenues). The resulting ex-post rate of return on equity is 9.2%, which is higher than the 5.0% planned in the PP.

CYPRUS: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Cyprus MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 39 | 112 | 151 | 121 | 181 | 183 |
| Revenue for the en route charging zone | 3 512 | 4 609 | 8 121 | 4 120 | 4 484 | 4 383 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.1% | 2.4% | 1.9% | 2.9% | 4.0% | 4.2% |
| Ex-ante RoE pre-tax rate (in %) | 4.7% | 4.8% | 4.8% | 5.0% | 5.3% | 5.7% |
| Cyprus MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 39 | 1 195 | 1 233 | 690 | | |
| Revenue for the en route charging zone | 3 512 | 4 688 | 8 200 | 4 181 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.1% | 25.5% | 15.0% | 16.5% | | |
| Ex-post RoE pre-tax rate (in %) | 4.7% | 88.5% | 56.7% | 45.4% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Cyprus (Cyprus MET) corresponds to 16.5% of the en route revenues. The ex-post RoE 45.4% is much higher than planned 5.0%. | | | | | | |

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Annual Monitoring Report 2022

Local level view

Czech Republic

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CZECH REPUBLIC

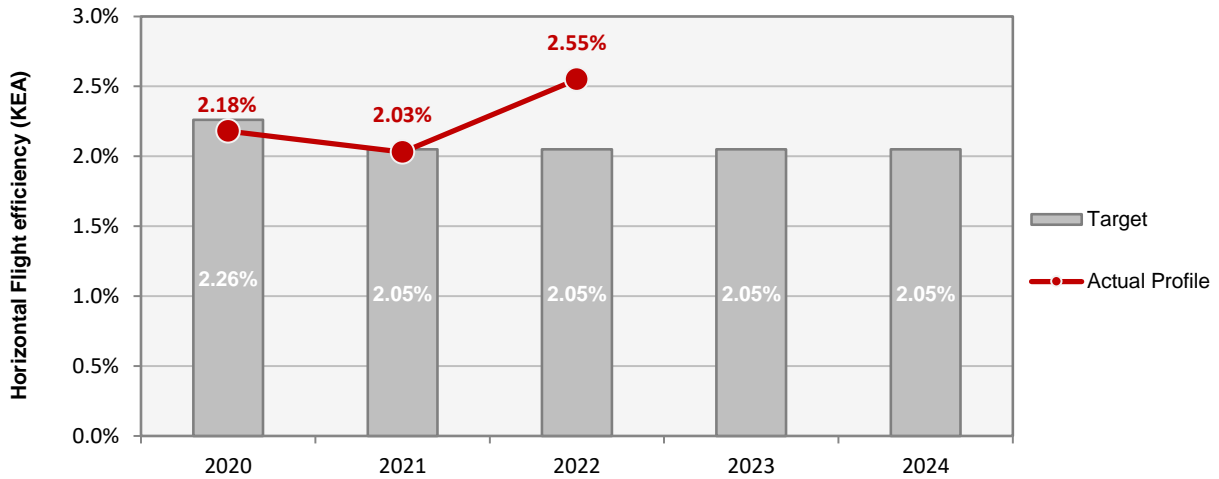
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| ANS CR | 99 | D | C | D | D | D |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All five EoSM components of the ANSP meet, or exceed, already the RP3 target level, with only one question below maximum maturity. | | | | | | |

CZECH REPUBLIC

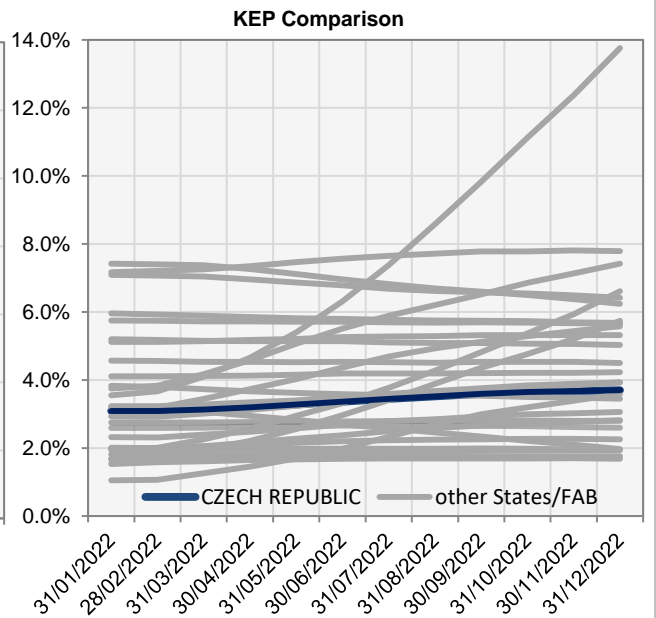
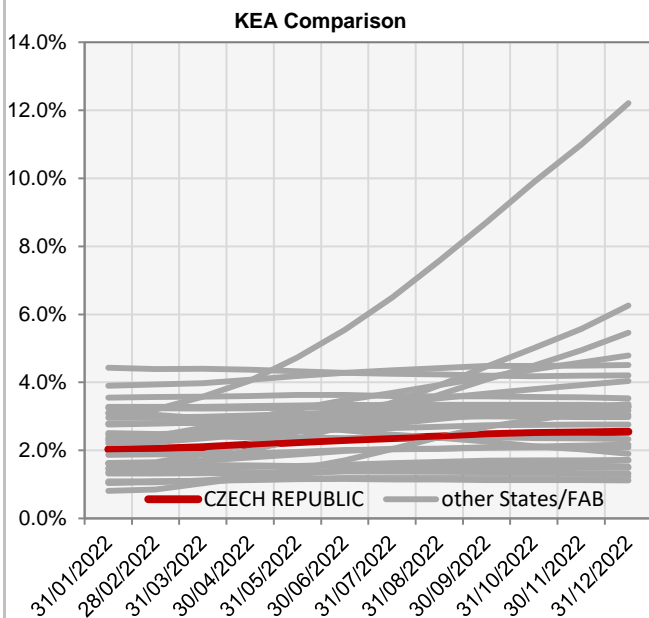
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.26% | 2.05% | 2.05% | 2.05% | 2.05% |
| Actual performance | 2.18% | 2.03% | 2.55% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.03% | 2.05% | 2.09% | 2.17% | 2.24% | 2.31% | 2.36% | 2.41% | 2.47% | 2.51% | 2.53% | 2.55% |
| KEP | 3.09% | 3.09% | 3.13% | 3.20% | 3.28% | 3.36% | 3.45% | 3.52% | 3.59% | 3.65% | 3.68% | 3.70% |
| KES | 2.95% | 2.96% | 3.00% | 3.07% | 3.15% | 3.22% | 3.31% | 3.39% | 3.45% | 3.50% | 3.53% | 3.56% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

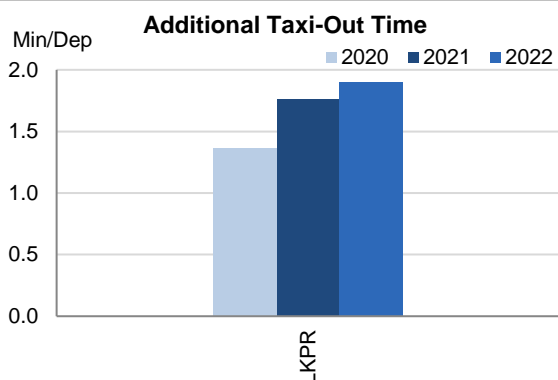
CZECH REPUBLIC

ENVIRONMENT - Airports

1. Overview

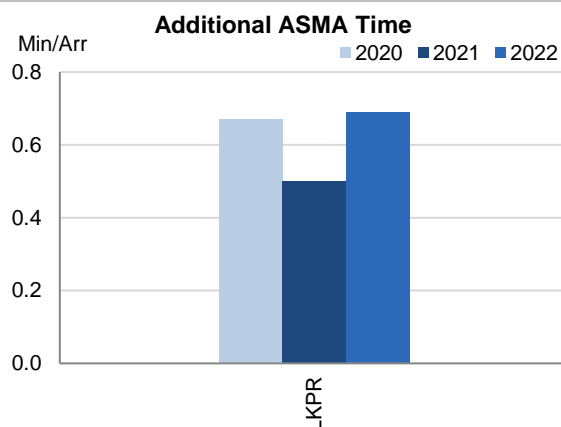
Czech Republic has included only Prague in their last Performance Plan for RP3 monitoring. The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established at Prague and the monitoring of all environment indicators can be performed. Traffic this airport in 2022 was still 36% lower than in 2019, even if 70% higher than in 2021. Both additional times increased with respect to 2021, but are still below pre-COVID levels. The share of CDO flights decreased at Prague from 25.9% to 22.9%.

2. Additional Taxi-Out Time



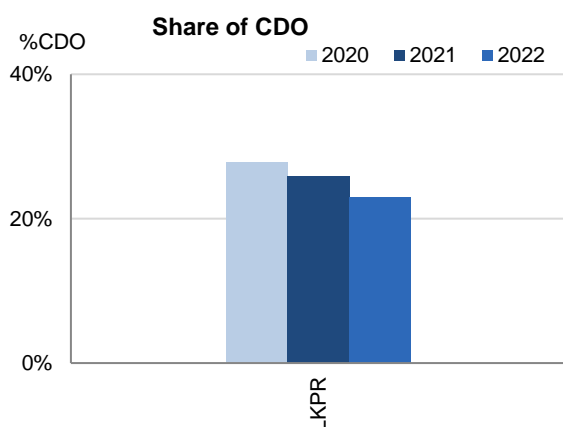
Additional taxi-out times at Prague increased in 2022 (LKPR; 2020: 1.36 min/dep.; 2021: 1.76 min/dep.; 2022: 1.9 min/dep.), but they were still 32% lower than in 2019. According to the Czech Republic's monitoring report: *The development of PI #3 is mainly influenced by the volume of traffic and its structure (gradual return of traffic after the COVID-19 pandemic). The PI monitoring is part of annual monitoring of the ANSP performance (on quarterly basis) to the CAA.*

3. Additional ASMA Time



The yearly average of the additional times in the terminal airspace increased in 2022 (LKPR; 2019: 1.47 min/arr.; 2020: 0.67 min/arr.; 2021: 0.5 min/arr.; 2022: 0.69 min/arr.), but they were still 53% lower than in 2019. According to the Czech Republic's monitoring report: *No formal initiatives were implemented, but if traffic permits the aircrafts are allowed for direct routing. The PI monitoring is part of annual monitoring of the ANSP performance (on quarterly basis) to the CAA.*

4. Share of arrivals applying CDO



The share of CDO flights decreased at Prague to 22.9% which is lower than the overall RP3 value in 2022 (29.0%).

According to the Czech Republic's monitoring report: *There is no CDO official published procedure in FIR Prague, but if traffic permits clearance are issued in order to allow CDO. The PI monitoring is part of annual monitoring of the ANSP performance (on quarterly basis) to the CAA.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Prague/Ruzyne-LKPR | 1.36 | 1.76 | 1.9 | | | 0.67 | 0.5 | 0.69 | | | 28% | 26% | 23% | | |

Update on Military dimension of the plan

There is a significant impact of MIL activities on the ENV indicators. The military has the lead role in the AMC, the ANSPs has no power to evaluate the airspace reservation by the military. In any case, the implementation of FUA is regularly evaluated through monitoring organized by the CAA. The administrators of the individual TRA / TSA (mostly represented by MAA) submit the evaluation of the plans and the activation of these airspaces on a monthly basis to CAA, and any deficiencies are addressed within the ASMCG meetings or individually with specific administrators, if needed.

Airspace Charter of the Czech Republic describes the competent authorities (CIV and MIL), their responsibilities and principles by which a joint civilian-military body (ASM Committee - ASMC) carries out strategic planning for the use of the Czech Republic airspace. The Charter incorporates as annexes the descriptions of processes used to provide high quality services to airspace users and ATS providers through safe, accurate and timely planning, approval and promulgation of national airspace management measures and international cooperation. The Airspace Charter was updated at the end of 2021.

The airspace of the Czech Republic is open to flights and it is divided in accordance with the rules contained in Sections 44 - 44c) of Act No. 49/1997. Pursuant to Section 44(2) of the Act, the CAA issues, in agreement with the Ministry of Defence and after consulting the Person authorized to exercise state administration in the matters related to sport flying devices, measures of general nature under the Administrative Procedure Code on division of the airspace of the Czech Republic to ensure safe conduct of flights and efficient provision of air services. In fulfilment of that mandate, the CAA takes into account, where possible, the FUA specifications described in "EUROCONTROL Specifications for the Application of the Flexible Use of Airspace (FUA)". Consultation with airspace users, service providers and other relevant bodies is conducted with the aim of obtaining consensus, wherever possible, before making changes in the planning or design of airspace management. The consultations are performed in a transparent way following a predefined procedure. The ASMC ensures effective cooperation at all levels through the ASM Consultation Group (ASMCG). In application of Regulation (EC) No 2150/2005, the ASMC cooperates very closely with CAA and takes into account the findings and relevant corrective measures resulting from control activities (e.g. CAA, MAA, EASA). In accordance with ICAO requirements, the CAA publishes the airspace management policy and implementation of new airspace structures and follow-up procedures or their changes so that all airspace users and ATS providers have sufficient time to comply with the new requirements.

Dynamic Airspace Management is realized at ASM Level 2 and/or ASM Level 3. Areas published in AIP CR / MIL AIP or other pre-arranged areas can be used under FUA rules as AUP manageable with UUP function updates.

The ATM systems of the Czech Air forces are directly connected to the ANS CR systems in order to present current status of reserved areas to the ATCOs. The AIM/AIS provider promulgates the planning status of the airspaces concerned in AISVIEW web tool, which serves for airspace users as an information source.

On the local level the FUA is addressed within the AMC activities, on the FAB CE level the DAM/STAM projects are in progress. The AMC is newly certificated under the EU 2017/373. The regulation 2150/2005 is fully implemented within the Czech Republic.

Representatives of the NSA CZ, in cooperation with the MAA CZ, the Czech Air Force, ANS CR and other partners, dealt with the creation of NATO corridors in connection with the war in Ukraine. NATO corridors that were created within the framework of the ASM strategic level in the airspace of class "C" above FL 095 were at the beginning AMC manageable and later on they are handled as non AMC manageable, and their activation and deactivation is carried out at the tactical level.

Although similar activities were also taking place in FIRs in neighbouring states, initial coordination was very difficult due to classified information. For this reason, the necessary coordination and consultation about the possible impact of these corridors on air traffic in neighbouring FIRs did not take place. In particular, if the vertical profiles of the planned flights in the neighbouring FIR had to be changed because of the corridors, then this change also affected the entry parameters of the flight when entering our FIR and vice versa.

Military - related measures implemented or planned to improve capacity

The national tool (like LARA) was improved in a way allowing for direct communication with the NM systems (solution developed under the SESAR project).

All stakeholders (NSA, military and ANSP) are in regular discussion on possible mitigation of negative effects of military activities on the civil aviation (i.e. FUA) through the consultation Group ASM (ASMCG).

The Airspace Charter of the Czech Republic was updated at the end of 2021.

The Airspace designer (ASD) function was deployed in the beginning of 2022 and now ASD serves as a government service for professional preparation of requests and supporting documentation for all changes in the airspace structures in future.

It was agreed among the ASM stakeholders to automate the evaluation of FUA within the ANS CR systems. The first outputs should be available in 2023.

The traffic complexity manager (a tool developed with the SESAR support) was put into full operational use in 2020. The tool is predicting traffic load in particular sectors (including military activities) and thus allowing for better ATCOs usage and improvement in capacity area.

The establishment of Airspace designer function was preparing during the year 2021 to be ready at the beginning of 2022 and serves as a government service for professional preparation of requests and supporting documentation for all changes in the airspace structures in future.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-----------------------|------|------|------|------|------|
| Czech Republic | 40% | 35% | 36% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---------------|------|------|------|------|------|
| Prague | 40% | 35% | 36% | | |

Initiatives implemented or planned to improve PI#6

It was agreed among the ASM stakeholders to automate the evaluation of FUA within the ANS CR systems. The first outputs should be available in 2023.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|
| Czech Republic | | | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Prague | | | n/a | | |

Initiatives implemented or planned to improve PI#7

There are no data available in the Czech Republic.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|
| Czech Republic | | | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Prague | | | n/a | | |

Initiatives implemented or planned to improve PI#8

There are no data available in the Czech Republic.

CZECH REPUBLIC

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--------------------------------|------|------|------|------|------|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.20 | 0.06 | 0.11 | 0.11 | 0.11 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process, and the exclusion of delays due to 'exceptional events'. |
| Actual performance | 0.00 | 0.01 | 1.18 | | | |

NSA's assessment of capacity performance

The whole year 2022 was very unusual in terms of operational context. Civil aviation entered the year with expectations of the fading effects of the COVID-19 pandemic and an expected return of traffic volumes to the pre-crisis levels.

These expectations were matched by the newly approved revised performance plan, which focused on capacity growth and further streamlining of all processes to ensure that all users of the Czech airspace were provided with sufficient service capacity and that all commitments made in the performance plan in areas of the CAP and ENV were met.

From this perspective, the continuation of the cross-border integration of FRA and in particular the deployment of the new main ATM system, i.e. the TopSky project, were essential.

While the last impacts and constraints related to the covid-19 pandemic have almost become a thing of the past, we have had to deal with another obstacle that is almost unthinkable in the civilised world. Russia's aggression against Ukraine has not only damaged the confidence of a large part of society in a stable security arrangement in Europe, but has fundamentally affected the expected return to normalcy of civil air traffic.

This led to fundamental changes in the layout and structure of air traffic flow, which have had a negative impact on the Czech airspace. In particular, increased special MIL OPS forced AOs and ANSPs to search for alternative OPS. In order to ensure special MIL OPS, dedicated corridors of temporary segregated airspace through the entire LKAA were designed and ad-hoc activated.

For this reason, frequent changes of horizontal and vertical profiles had to be used on tactical level in order to combine the requirements of CIV and MIL users as much as possible.

As a consequence, and in combination with newly implemented ATM system Top Sky, it had despite the immediate implementation of corrective measures (in particular increased use of available ATCOs) negative impact on both capacity and environmental performance of the ANS CR.

There was a significant lack of capacity in LKAA in 2022 due to a time-limited combination of unfavourable factors.

Firstly, ANS CR puts into OPS the new ATM system Top Sky on 24 FEB 2022.

Secondly, the Russian's war of aggression against Ukraine had very negative impact on OPS in LKAA. Remedial actions were taken already in 2022 (since August 2022, the recorded delay has been on a downward trend) and also they have been taken to significantly improve the situation in 2023.

Monitoring process for capacity performance

The monitoring process is based on quarterly monitoring reports prepared by ANS CR. These are based on the company Annual plan and cover all KPAs.

In accordance with the NM, 26k minutes of delay were deducted from LKAA FIR and allocated to DFS and DSNA within the framework of PostOPS Adjustment.

In coordination with NM, ANS CR assigned all ATFM measures in relation to Russia's war of aggression against Ukraine and new ATMS system Top Sky implementation with designation "special event". In total it represents 766k minutes.

Capacity Planning

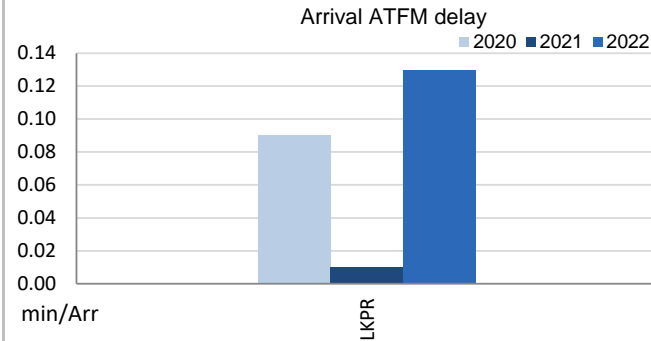
| ATCO in OPS (FTE) | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| Prague ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 146 | 154 | 153 | 160 | |
| Actual | 116 | 136 | 143 | 147 | | | |
| ANS CR continues its Optimisation project to increase its performance through airspace changes and increased number of ATCOs. | | | | | | | |
| The number of operational ATCOs is some 5 % below the expected level, this deviation is non-material and is caused mainly by decelerated training due to the COVID impact. | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| The reason for the lack of capacity in the Czech Republic airspace was a combination of unfavourable factors. ANS CR decided to stick to the plan and switch OPS to the new ATM system Tops Sky regardless Russia started its aggression against Ukraine on the same moment. | | | | | | | |
| Full utilisation of operational staff with maximum use of overtime (up to the legal limit), ongoing airspace optimisation project (cross licencing and training of ATCO students on layer "L"). | | | | | | | |
| Coordination with the Czech AirForce regarding minimization of MIL OPS impacts on civil aviation, stabilization and repairs of TopSky in cooperation with the supplier (THALES). | | | | | | | |
| Additional information regarding Russia's war in Ukraine. | | | | | | | |
| Russian invasion of Ukraine have major impact on OPS in LKAA. As can be seen from the statistics, it caused significant changes in traffic flows. In addition, increased and special MIL OPS forced AOs and ANSPs to search for alternative OPS. | | | | | | | |
| In order to ensure special MIL OPS dedicated corridors of temporary segregated airspace through the entire LKAA were designed and ad-hoc activated. For this reason, frequent changes of horizontal and vertical profiles had to be used on tactical level in order to combine the requirements of CIV and MIL users as much as possible. | | | | | | | |
| As a consequence, and in combination with newly implemented ATM system Top Sky, it had negative impact on ANS CR capacity performance. | | | | | | | |
| In coordination with NM ANS CR assigned all ATFM measures in relation to Russia's war of aggression against Ukraine and new ATMS system Top Sky implementation with designation "special event". In total it represents 766k minutes. | | | | | | | |
| FEB - 1367, MAR - 1271, APR - 53783, MAY - 28625, JUN - 239520, JUL - 278549, AUG - 88395, SEP - 52731, OCT - 20225, NOV - 395, DEC - 1196 | | | | | | | |
| Remedial actions to mitigate the adverse impacts on capacity performance include: full utilisation of operational staff with maximum use of overtime (up to the legal limit), ongoing airspace optimisation project, close cooperation with the NM. | | | | | | | |
| Summary of capacity performance | | | | | | | |
| The Czech Republic experienced an increase in traffic from 404k flights in 2021 to 616k flights in 2022, with 892k minutes of en route ATFM delay. Traffic levels were still below the 867k flights in 2019. | | | | | | | |
| 26k minutes of en route ATFM delay originating in the Praha ACC were re-attributed to DFS (13k) and DSNA (13k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC. | | | | | | | |
| An additional 68k minutes of ATFM delay due to 'exceptional events' were excluded after consultation with the European Commission and the Network Manager, giving a final value of 730k minutes of en route ATFM delay. | | | | | | | |

1. Overview

Czech Republic has included only Prague in their last Performance Plan for RP3 monitoring. The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established at Prague and the monitoring of all environment indicators can be performed. Traffic this airport in 2022 was still 36% lower than in 2019, even if 70% higher than in 2021.

Average arrival ATFM delays in 2022 was 0.13 min/arr, compared to 0.01 min/arr in 2021. ATFM slot adherence has improved (2022: 96.1%; 2021: 95.3%).

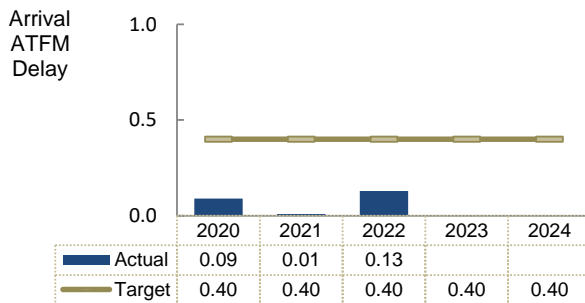
2. Arrival ATFM Delay



Delays at Prague (LKPR: 2019: 0.18 min/arr.; 2020: 0.09 min/arr.; 2021: 0.01 min/arr.; 2022: 0.13 min/arr.) remained very low in 2022 despite an increase by 0.12 min/arr. 59% of the delays were attributed to weather, followed by 28% attributed to special events.

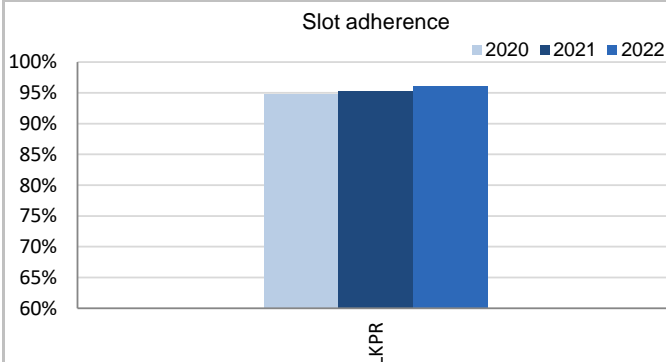
According to the Czech monitoring report: *Russia's aggression against Ukraine has major impact on LKPR OPS. Because of ban on flights to/from Russia and Belarus and no flight zone in Ukraine LKPR suffers from significant traffic reduction.*

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



The slot adherence in 2022 was 96.1%, a slight improvement with respect to 2021 (95.3%). With regard to the 3.9% of flights that did not adhere, 2.1% was early and 1.7% was late.

According to the Czech monitoring report: *The ATFM slot adherence was within the required range and was even better than in the previous year. In order to keep these levels, ANS CR monitors the value on a monthly basis and continuously educates ATCOs.*

5. ATC Pre-departure Delay

The quality of the airport data reported by Prague (the only Czech airport subject to monitoring of this indicator) is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Prague.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Prague was above 40% for 10 months in 2022, preventing the calculation of this indicator.

6. All Causes Pre-departure Delay

Prague is the only Czech airport subject to the monitoring of this indicator.

The total (all causes) delay in the actual off block time at Prague in 2022 increased significantly compared to 2021 (LKPR: 2020: 8.30 min/dep.; 2021: 8.32 min/dep.; 2022: 17.92 min/dep.). The highest delays per flight were observed in Summer.

According to the Czech monitoring report: *Based on the data received from LKPR, the structure and a portion of the delays are as follows: ATC & En-route delay: 19,63 %; LKPR airport facilities: 0,48 %; Weather: 4,14 %; Other airport facilities: 3,34 %; Airline operators: 13,53 %; Security & Immigration: 1,98 %; Other reasons: 56,87 %.*

The part of the delay due to ATC & En-route reasons (19,63 %) is due to the limitations caused by the lack of capacity of ANSPs and in case of ANS CR the impact of War in Ukraine and implementation of new system TopSky.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Prague/Ruzyně-LKPR | 0.09 | 0.01 | 0.13 | | | 94.7% | 95.3% | 96.1% | | | n/a | n/a | n/a | | | 8.30 | 8.32 | 17.92 | | |

CZECH REPUBLIC: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Czech Republic ECZ represents 1.6% of the SES en route ANS actual costs in 2022
- National currency: CZK Exchange rates (1 EUR=) 2017: 26.3115 CZK 2022: 24.5299 CZK
- Performance Plan: RP3 draft performance plan dated 04 February 2022 and found consistent as per Commission Decision (EU) 2022/772 of 13 April 2022
The final version of the plan was adopted and published by Czech Republic in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Czech Republic: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| En route costs (nominal CZK) | 2 801 150 791 | 2 540 127 380 | 5 341 278 171 | 3 093 207 552 | 3 313 232 021 | 3 375 276 257 |
| Inflation % | 3.3% | 2.3% | | 2.0% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 108.1 | 110.6 | | 112.8 | 115.0 | 117.3 |
| Real en route costs (CZK2017) | 2 663 873 711 | 2 392 525 450 | 5 056 399 161 | 2 866 536 564 | 3 033 769 012 | 3 047 424 812 |
| Total en route service units | 1 138 417 | 1 280 175 | 2 418 592 | 1 840 802 | 2 195 628 | 2 514 308 |
| Real en route DUC per service unit (CZK2017) | 2 339.98 | 1 868.90 | 2 090.64 | 1 557.22 | 1 381.73 | 1 212.03 |
| Real en route DUC per service unit (€2017) | 88.93 | 71.03 | 79.46 | 59.18 | 52.51 | 46.06 |
| Czech Republic: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal CZK) | 2 801 150 791 | 2 360 900 756 | 5 162 051 547 | 2 878 773 168 | | |
| Inflation % | 3.3% | 3.3% | | 14.8% | | |
| Inflation index (100 in 2017) | 108.1 | 111.7 | | 128.2 | | |
| Real en route costs (CZK2017) | 2 663 873 711 | 2 213 371 381 | 4 877 245 092 | 2 477 682 863 | | |
| Total en route service units | 1 138 417 | 1 280 175 | 2 418 592 | 1 814 184 | | |
| Real en route AUC per service unit (CZK2017) | 2 339.98 | 1 728.96 | 2 016.56 | 1 365.73 | | |
| Real en route AUC per service unit (€2017) | 88.93 | 65.71 | 76.64 | 51.91 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal CZK) | in value | 0 | -179 226 624 | -179 226 624 | -214 434 384 | |
| | in % | - | -7.1% | -3.4% | -6.9% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | | 12.8 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.1 p.p. | | 15.4 p.p. | |
| Real en route costs (CZK2017) | in value | 0 | -179 154 069 | -179 154 069 | -388 853 701 | |
| | in % | - | -7.5% | -3.5% | -13.6% | |
| Total en route service units | in value | 0 | 0 | 0 | -26 618 | |
| | in % | - | - | - | -1.4% | |
| Real en route unit cost per service unit (CZK2017) | in value | 0.00 | -139.94 | -74.07 | -191.49 | |
| | in % | - | -7.5% | -3.5% | -12.3% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -5.32 | -2.82 | -7.28 | |
| | in % | - | -7.5% | -3.5% | -12.3% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -12.3% (or -191.49 CZK2017, -7.28 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-13.6%, or -388.9 MCZK2017, -14.8 M€2017) and lower than planned TSUs (-1.4%). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-1.4%) falls inside the ±2% dead band. Hence loss of en route revenues is borne by the ANSPs (see items 10 to 14).

En route costs by entity

Actual real en route costs are -13.6% (-14.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, ANS CR (-14.9%, or -13.9 M€2017), the NSA/EUROCONTROL (-5.0%, or -0.7 M€2017) and the MET service provider (-10.2%, or -0.2 M€2017).

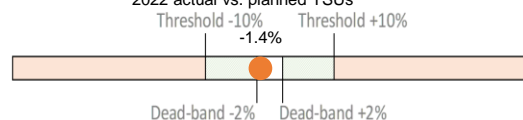
En route costs for the main ANSP (ANS CR) at charging zone level

Significantly lower than planned en route costs in real terms for ANS CR in 2022 (-14.9%, or -13.9 M€2017) result from:

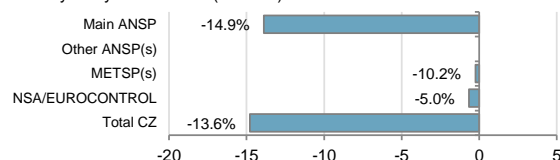
- Significantly lower staff costs (-21.1%) resulting mainly from lower than planned FTEs. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.).
- Significantly lower other operating costs (-15.6%), resulting from lower costs in many different areas. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.).
- Lower depreciation (-5.0%), due to the changes in the commissioning dates of some investment projects.
- Higher cost of capital (+3.4%), due to "slightly higher share of financing through equity and slightly higher interest rate of liabilities together with volatility of the CZK/€ exchange rate."
- Significantly lower deduction for VFR exempted flights (-8.8%).

Note: It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.

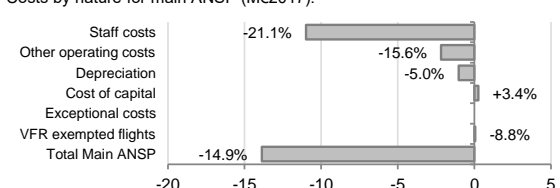
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



CZECH REPUBLIC: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

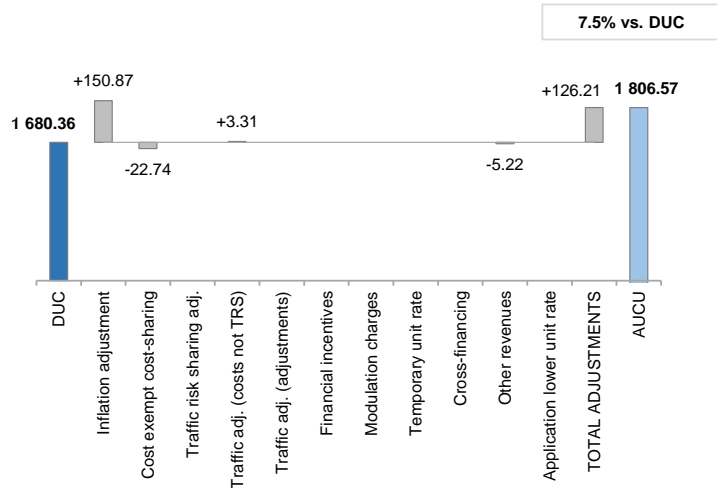
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Czech Republic 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - CZK



| Components of the AUCU | CZK/SU | €/SU |
|---------------------------------|-----------------|--------------|
| Initial DUC charged | 1 680.36 | 68.50 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 1 680.36 | 68.50 |
| Inflation adjustment | 150.87 | 6.15 |
| Cost exempt from cost-sharing | -22.74 | -0.93 |
| Traffic risk sharing adjustment | 0.00 | 0.00 |
| Traffic adj. (costs not TRS) | 3.31 | 0.13 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -5.22 | -0.21 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 126.21 | 5.15 |
| AUCU | 1 806.57 | 73.65 |
| AUCU vs. DUC | +7.5% | +7.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

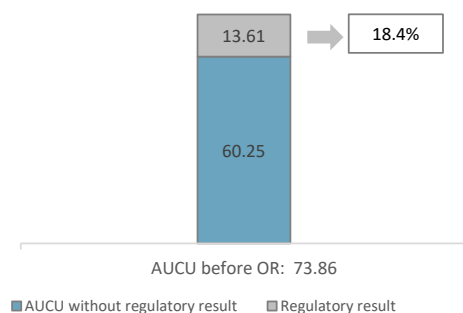
7. En route costs exempt from cost sharing

| | | CZK '000 | € '000 | CZK/SU | €/SU |
|---|--|----------------|---------------|---------------|--------------|
| by item | New and existing investments | -23 058 | -940 | -12.71 | -0.52 |
| | Competent authorities and qualified entities costs | 18 907 | 771 | 10.42 | 0.42 |
| | Eurocontrol costs | -36 122 | -1 473 | -19.91 | -0.81 |
| | Pension costs | -978 | -40 | -0.54 | -0.02 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -41 251 | -1 682 | -22.74 | -0.93 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | CZK '000 | € '000 | CZK/SU | €/SU |
|-----------------------------------|------------------|----------------|-----------------|--------------|
| ANS CR | 594 270 | 24 226 | 327.57 | 13.35 |
| METSP(s) | CZK '000 | € '000 | CZK/SU | €/SU |
| Czech Republic MET | 11 508 | 469 | 6.34 | 0.26 |
| Total charging zone | 605 777 | 24 695 | 333.91 | 13.61 |
| Actual cost for users*** | 3 286 928 | 133 997 | 1 811.79 | 73.86 |
| Regulatory result (% AUCU) | 18.4% | 18.4% | 18.4% | 18.4% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (1 806.57 CZK or 73.65 €) is +7.5% higher than the nominal DUC (1 680.36 CZK or 68.50 €). The difference between these two figures (+126.21 CZK/SU or +5.15 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+150.87 CZK/SU or +6.15 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-22.74 CZK/SU or -0.93 €/SU);
- the addition of the traffic adjustment (+3.31 CZK/SU or +0.13 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-5.22 CZK/SU or -0.21 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 18.4%.

Note: It is understood from the NSA Report on the verification of cost risk sharing for the year 2022 that the Czech Republic will not recover the difference between the actual and planned NSA costs (+18.9 MCZK or +10.42 CZK/SU, see Box 7 above) from airspace users. This will be reflected in the November 2023 en route reporting tables.

CZECH REPUBLIC: En route main ANSP (ANS CR)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

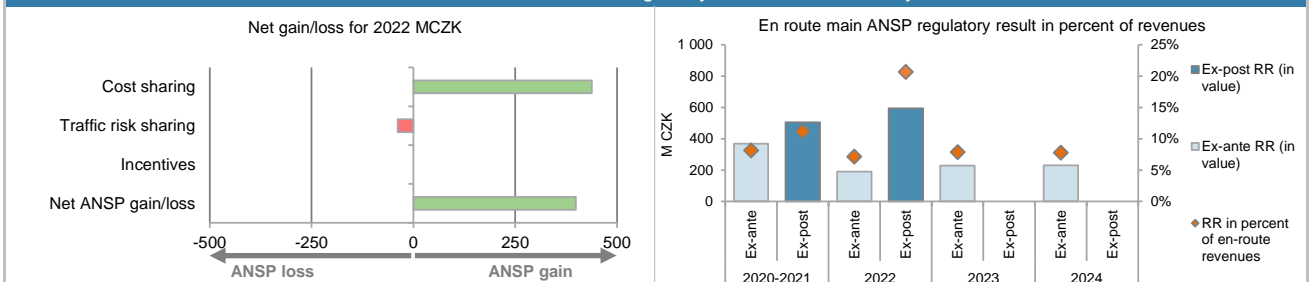
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|----------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 152 492 | 196 914 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 14 933 | 265 516 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -15 369 | -24 730 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 152 057 | 437 700 | | |
| Traffic risk sharing (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.0% | -1.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 4 525 536 | 2 678 129 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 0 | -38 726 | | |
| Incentives (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (CZK '000) | 152 057 | 398 974 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 5 935 | 16 265 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ANS CR planned regulatory result (CZK '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 3 865 827 | 3 861 480 | 7 727 308 | 4 022 141 | 4 549 321 | 4 405 165 |
| Proportion of financing through equity (in %) | 82% | 54% | 68% | 47% | 56% | 62% |
| RoE pre-tax rate (in %) | 5.6% | 9.2% | 7.0% | 10.0% | 9.0% | 8.4% |
| RoE (in value) | 175 793 | 191 853 | 367 646 | 190 620 | 229 041 | 230 983 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 175 793 | 191 853 | 367 646 | 190 620 | 229 041 | 230 983 |
| Revenue for the en route charging zone | 2 392 069 | 2 133 467 | 4 525 536 | 2 678 129 | 2 918 540 | 2 976 320 |
| Ex-ante regulatory result (+/-) in percent of revenues | 7.3% | 9.0% | 8.1% | 7.1% | 7.8% | 7.8% |
| Ex-ante RoE pre-tax rate (in %) | 5.6% | 9.2% | 7.0% | 10.0% | 9.0% | 8.4% |
| ANS CR actual regulatory result (CZK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 3 865 827 | 3 904 165 | 7 769 992 | 3 919 703 | | |
| Proportion of financing through equity (in %) | 82% | 50% | 66% | 50% | | |
| RoE pre-tax rate (in %) | 5.6% | 9.2% | 6.9% | 10.0% | | |
| RoE (in value) | 175 793 | 177 917 | 353 709 | 195 296 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 152 057 | 152 057 | 398 974 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 175 793 | 329 973 | 505 766 | 594 270 | | |
| Revenue for the en route charging zone | 2 392 069 | 2 133 032 | 4 525 101 | 2 880 189 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 7.3% | 15.5% | 11.2% | 20.6% | | |
| Ex-post RoE pre-tax rate (in %) | 5.6% | 17.0% | 9.9% | 30.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



ANS CR net gain on activity in the Czech Republic en route charging zone in the year 2022

ANS CR reported a net gain of +399.0 MCZK, as a combination of a gain of +437.7 MCZK arising from the cost sharing mechanism, with a loss of -38.7 MCZK arising from the traffic risk sharing mechanism.

ANS CR overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+399.0 MCZK) and the actual RoE (+195.3 MCZK) amounts to +594.3 MCZK (20.6% of the en route revenues). The resulting ex-post rate of return on equity is 30.4%, which is higher than the 10.0% planned in the PP.

CZECH REPUBLIC: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------------|--------------|-------------------|--------------|--------------|--------------|
| Czech Republic MET planned regulatory result (CZK '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 2 865 | 2 327 | 5 192 | 2 267 | 2 101 | 1 935 |
| Revenue for the en route charging zone | 67 258 | 65 132 | 132 390 | 70 149 | 71 836 | 73 594 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.3% | 3.6% | 3.9% | 3.2% | 2.9% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| Czech Republic MET actual regulatory result (CZK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 2 865 | 658 | 3 523 | 11 508 | | |
| Revenue for the en route charging zone | 67 258 | 66 896 | 134 155 | 79 024 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.3% | 1.0% | 2.6% | 14.6% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 1.4% | 3.4% | 24.7% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Czech Republic (Czech Republic MET) corresponds to 14.6% of the en route revenues. The ex-post RoE 24.7% is higher than planned 5.0%. | | | | | | |

CZECH REPUBLIC: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|------------------|------------------|-----------------|-----------------|-----------------|
| <ul style="list-style-type: none"> Czech Republic TCZ represents 1.1% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: CZK Exchange rates (1 EUR=) 2017: 26.3115 CZK 2022: 24.5299 CZK Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Czech Republic: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal CZK) | 491 381 600 | 358 521 360 | 849 902 960 | 452 412 380 | 535 350 786 | 543 432 271 |
| Inflation % | 3.3% | 2.3% | | 2.0% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 108.1 | 110.6 | | 112.8 | 115.0 | 117.3 |
| Real terminal costs (CZK2017) | 462 397 169 | 332 186 162 | 794 583 331 | 416 392 320 | 485 619 488 | 485 843 805 |
| Total terminal service units | 28 247 | 31 963 | 60 210 | 60 440 | 77 210 | 91 320 |
| Real terminal DUC per service unit (CZK2017) | 16 369.96 | 10 392.83 | 13 196.93 | 6 889.35 | 6 289.59 | 5 320.23 |
| Real terminal DUC per service unit (€2017) | 622.16 | 394.99 | 501.57 | 261.84 | 239.04 | 202.20 |
| Czech Republic: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal CZK) | 491 381 600 | 330 035 000 | 821 416 600 | 436 513 252 | | |
| Inflation % | 3.3% | 3.3% | | 14.8% | | |
| Inflation index (100 in 2017) | 108.1 | 111.7 | | 128.2 | | |
| Real terminal costs (CZK2017) | 462 397 169 | 303 994 471 | 766 391 640 | 366 427 387 | | |
| Total terminal service units | 28 247 | 31 773 | 60 020 | 57 039 | | |
| Real terminal AUC per service unit (CZK2017) | 16 369.96 | 9 567.72 | 12 769.02 | 6 424.16 | | |
| Real terminal AUC per service unit (€2017) | 622.16 | 363.63 | 485.30 | 244.16 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal CZK) | in value 0 | -28 486 360 | -28 486 360 | -15 899 128 | | |
| | in % - | -7.9% | -3.4% | -3.5% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.0 p.p. | | 12.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.1 p.p. | | 15.4 p.p. | | |
| Real terminal costs (CZK2017) | in value 0 | -28 191 691 | -28 191 691 | -49 964 934 | | |
| | in % - | -8.5% | -3.5% | -12.0% | | |
| Total terminal service units | in value 0 | -190 | -190 | -3 401 | | |
| | in % - | -0.6% | -0.3% | -5.6% | | |
| Real terminal unit cost per service unit (CZK2017) | in value 0.00 | -825.11 | -427.91 | -465.19 | | |
| | in % - | -7.9% | -3.2% | -6.8% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -31.36 | -16.26 | -17.68 | | |
| | in % - | -7.9% | -3.2% | -6.8% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC In 2022, the terminal AUC was -6.8% (or -465.19 CZK2017, -17.68 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-12.0%, or -50.0 MCZK2017, -1.9 ME2017) and significantly lower than planned TNSUs (-5.6%). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.</p> <p>Terminal service units The difference between actual and planned TNSUs (-5.6%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the main ANSP (ANS CR) bearing a loss of -0.4 ME2017.</p> <p>Terminal costs by entity Actual real terminal costs are -12.0% (-1.9 ME2017) lower than planned. This is the result of lower costs for the main ANSP, ANS CR (-11.6%, or -1.8 ME2017), the MET service provider (-32.8%, or -0.1 ME2017) and the NSA (-3.5%, or -0.01 ME2017).</p> <p>Terminal costs for the main ANSP (ANS CR) at charging zone level Significantly lower than planned terminal costs in real terms for ANS CR in 2022 (-11.6%, or -1.8 ME2017) result from: <ul style="list-style-type: none"> - Significantly lower staff costs (-6.3%) mainly due to the inflation index impact (+15.4 p.p.). In nominal terms, the actual staff costs are higher than planned by +6.5% due to the new collective agreement and higher than planned maximum calculation cap for payment of social security premium. - Significantly lower other operating costs (-28.5%), resulting from lower costs in many different areas. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.). - Significantly lower depreciation (-16.7%), due to the changes in the commissioning date of some projects. - Higher cost of capital (+2.3%) due to slightly higher share of financing through equity and slightly higher interest rate of liabilities. </p> | | | | | | |
| <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | | | | |
| <p>Costs by entity at TCZ level (ME2017):</p> | | | | | | |
| <p>Costs by nature for main ANSP (ME2017):</p> | | | | | | |

CZECH REPUBLIC: Terminal charging zone

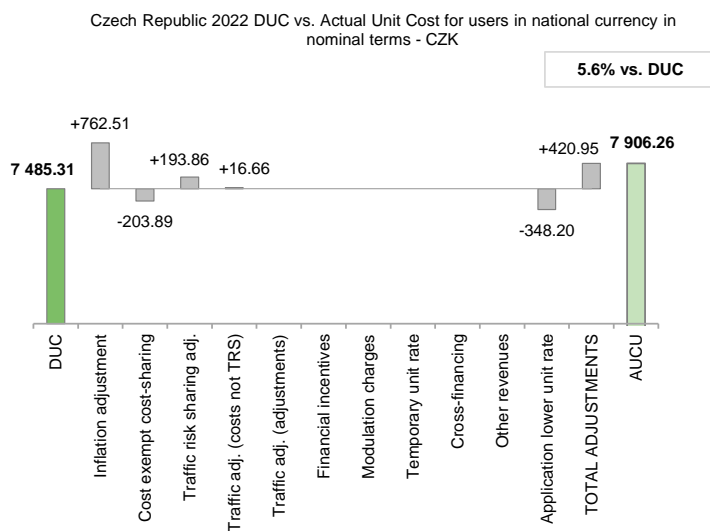
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | CZK/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 7 485.31 | 305.15 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 7 485.31 | 305.15 |
| Inflation adjustment | 762.51 | 31.09 |
| Cost exempt from cost-sharing | -203.89 | -8.31 |
| Traffic risk sharing adjustment | 193.86 | 7.90 |
| Traffic adj. (costs not TRS) | 16.66 | 0.68 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | 0.00 | 0.00 |
| Application of lower unit rate | -348.20 | -14.19 |
| Total adjustments | 420.95 | 17.16 |
| AUCU | 7 906.26 | 322.31 |
| AUCU vs. DUC | 5.6% | 5.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

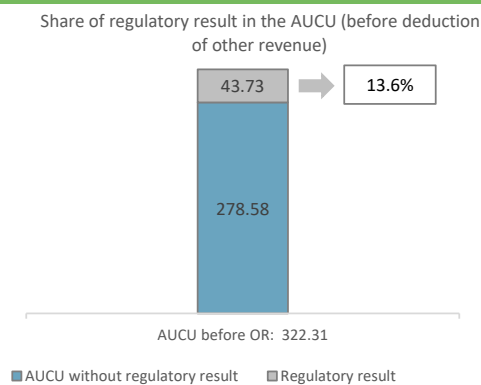
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | CZK '000 | € '000 | CZK/SU | €/SU |
|---|--|----------------|-------------|----------------|--------------|
| by item | New and existing investments | -16 385 | -668 | -287.27 | -11.71 |
| | Competent authorities and qualified entities costs | -210 | -9 | -3.68 | -0.15 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 4 966 | 202 | 87.06 | 3.55 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -11 629 | -474 | -203.89 | -8.31 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | CZK '000 | € '000 | CZK/SU | €/SU |
|-----------------------------------|----------------|---------------|-----------------|---------------|
| ANS CR | 57 259 | 2 334 | 1 003.85 | 40.92 |
| METSP(s) | CZK '000 | € '000 | CZK/SU | €/SU |
| Czech Republic-MET | 3 932 | 160 | 68.94 | 2.81 |
| Total charging zone | 61 191 | 2 495 | 1 072.79 | 43.73 |
| Actual cost for users*** | 450 965 | 18 384 | 7 906.26 | 322.31 |
| Regulatory result (% AUCU) | 13.6% | 13.6% | 13.6% | 13.6% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (7 906.27 CZK or 322.31 €) is +5.6% higher than the nominal DUC (7 485.31 CZK or 305.15 €). The difference between these two figures (+420.95 CZK/SU or +17.16 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+762.51 CZK/SU or +31.09 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-203.89 CZK/SU or -8.31 €/SU);
- the addition of the traffic risk sharing adjustment (+193.86 CZK/SU or +7.90 €/SU);
- the addition of the traffic adjustment (+16.66 CZK/SU or +0.68 €/SU) for the costs not subject to traffic risk sharing; and,
- the application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-348.20 CZK/SU or -14.19 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 13.6%.

CZECH REPUBLIC: Terminal main ANSP (ANS CR)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: It should be noted that, since the Czech Republic caps the terminal UR, the ex-post RR is partially offset by the loss of revenues due to the application of the lower unit rate as per Art. 29.6 (loss of revenue as per Art. 29.6 in 2022 corresponds to -19.90 MCZK).

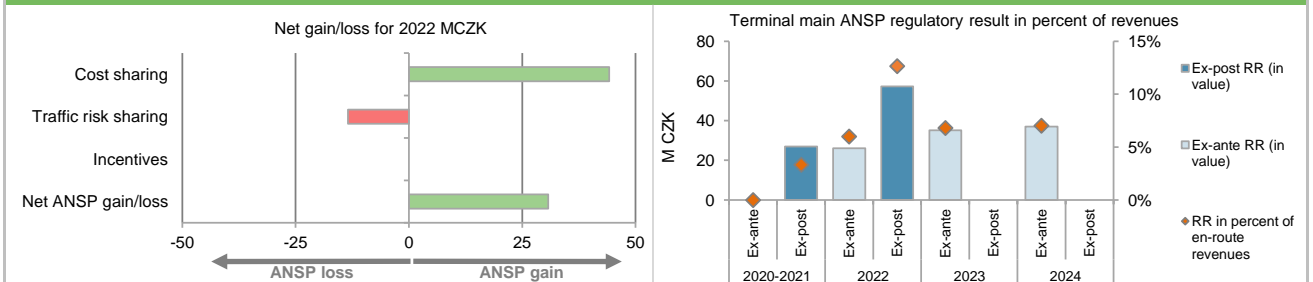
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 28 254 | 12 917 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 2 677 | 42 247 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -1 348 | -10 990 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 29 583 | 44 174 | | |
| Traffic risk sharing (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.3% | -5.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 813 948 | 435 527 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -2 570 | -13 450 | | |
| Incentives (CZK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (CZK '000) | 27 013 | 30 724 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 1 054 | 1 253 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ANS CR planned regulatory result (CZK '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 543 103 | 568 160 | 1 111 263 | 552 181 | 699 504 | 704 616 |
| Proportion of financing through equity (in %) | 82% | 54% | 68% | 47% | 56% | 62% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 10.0% | 9.0% | 8.4% |
| RoE (in value) | 0 | 0 | 0 | 26 169 | 35 217 | 36 946 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 26 169 | 35 217 | 36 946 |
| Revenue for the terminal charging zone | 471 938 | 342 010 | 813 948 | 435 527 | 518 114 | 525 833 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 6.0% | 6.8% | 7.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 10.0% | 9.0% | 8.4% |
| ANS CR actual regulatory result (CZK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 543 103 | 550 660 | 1 093 764 | 532 566 | | |
| Proportion of financing through equity (in %) | 82% | 50% | 66% | 50% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 10.0% | | |
| RoE (in value) | 0 | 0 | 0 | 26 535 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 27 013 | 27 013 | 30 724 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 1) | 0 | 27 013 | 27 013 | 57 259 | | |
| Revenue for the terminal charging zone | 471 938 | 340 769 | 812 707 | 453 334 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 1) | 0.0% | 7.9% | 3.3% | 12.6% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 9.9% | 3.8% | 21.6% | | |

13. Focus on main ANSP regulatory result on terminal activity



ANS CR net gain on activity in the Czech Republic terminal charging zone in the year 2022

ANS CR reported a net gain of +30.7 MCZK, as a combination of a gain of +44.2 MCZK arising from the cost sharing mechanism, with a loss of -13.5 MCZK arising from the traffic risk sharing mechanism.

ANS CR overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+30.7 MCZK) and the actual RoE (+26.5 MCZK) amounts to +57.3 MCZK (12.6% of the terminal revenues). The resulting ex-post rate of return on equity is 21.6%, which is higher than the 10.0% planned in the PP.

CZECH REPUBLIC: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| Czech Republic-MET planned regulatory result (CZK '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 653 | 334 | 987 | 345 | 320 | 295 |
| Revenue for the terminal charging zone | 11 060 | 10 607 | 21 667 | 10 884 | 11 137 | 11 399 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.9% | 3.1% | 4.6% | 3.2% | 2.9% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| Czech Republic-MET actual regulatory result (CZK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 653 | 163 | 816 | 3 932 | | |
| Revenue for the terminal charging zone | 11 060 | 10 411 | 21 471 | 11 701 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.9% | 1.6% | 3.8% | 33.6% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 2.4% | 4.1% | 57.3% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Czech Republic (Czech Republic-MET) corresponds to 33.6% of the terminal revenues. The ex-post RoE 57.3% is higher than planned 5.0%. | | | | | | |

CZECH REPUBLIC: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|------------------|---------------|--|------------------|---------------|-------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Czech Republic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Czech Republic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Czech Republic: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 101 243 704 | 90 930 789 | 192 174 493 | 108 946 148 | 115 302 017 | 115 821 022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 17 573 957 | 12 625 132 | 30 199 089 | 15 825 488 | 18 456 549 | 18 465 074 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 118 817 661 | 103 555 921 | 222 373 582 | 124 771 635 | 133 758 566 | 134 286 096 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 85.2% | 87.8% | 86.4% | 87.3% | 86.2% | 86.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Czech Republic: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 101 243 704 | 84 121 824 | 185 365 528 | 94 167 298 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 17 573 957 | 11 553 673 | 29 127 630 | 13 926 511 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 118 817 661 | 95 675 497 | 214 493 158 | 108 093 809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 85.2% | 87.9% | 86.4% | 87.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -7 880 423 | -7 880 423 | -16 677 827 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -7.6% | -3.5% | -13.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | 0.0 p.p. | 0.1 p.p. | 0.0 p.p. | -0.2 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>88%</td> <td>12%</td> </tr> <tr> <td>Actual</td> <td>88%</td> <td>12%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>86%</td> <td>14%</td> </tr> <tr> <td>Actual</td> <td>86%</td> <td>14%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>87%</td> <td>13%</td> </tr> <tr> <td>Actual</td> <td>87%</td> <td>13%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>86%</td> <td>14%</td> </tr> <tr> <td>Actual</td> <td>86%</td> <td>14%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>86%</td> <td>14%</td> </tr> <tr> <td>Actual</td> <td>86%</td> <td>14%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 85% | 15% | Actual | 85% | 15% | 2021 | Determined | 88% | 12% | Actual | 88% | 12% | 2020-2021 | Determined | 86% | 14% | Actual | 86% | 14% | 2022 | Determined | 87% | 13% | Actual | 87% | 13% | 2023 | Determined | 86% | 14% | Actual | 86% | 14% | 2024 | Determined | 86% | 14% | Actual | 86% | 14% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 87% | 13% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 87% | 13% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 86% | 14% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -13.4% (-16.7 M€2017) lower than planned, as en route costs are lower than planned by -14.8 M€2017 and terminal costs are lower than planned by -1.9 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (87.1%) is slightly lower than planned in the PP for 2022 (87.3%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In CZK '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANS CR | 216 789 | 3 113 656 | 7.0% | 651 528 | 3 333 523 | 19.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Czech Republic MET | 2 612 | 81 033 | 3.2% | 15 440 | 90 725 | 17.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 219 401 | 3 194 689 | 6.9% | 666 968 | 3 424 248 | 19.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Czech Republic covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +667.0 MCZK (+605.8 MCZK for en route and +61.2 MCZK for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 19.5% of gate-to-gate ANS revenues. This is higher than the return planned for the year (6.9% of gate-to-gate revenues).</p> | | | | <p>Czech Republic gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Czech Republic gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>6.9%</td> </tr> <tr> <td>Ex-post</td> <td>19.5%</td> </tr> </tbody> </table> | | | Result Type | Percentage | Ex-ante | 6.9% | Ex-post | 19.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Percentage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 6.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 19.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Denmark

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DENMARK

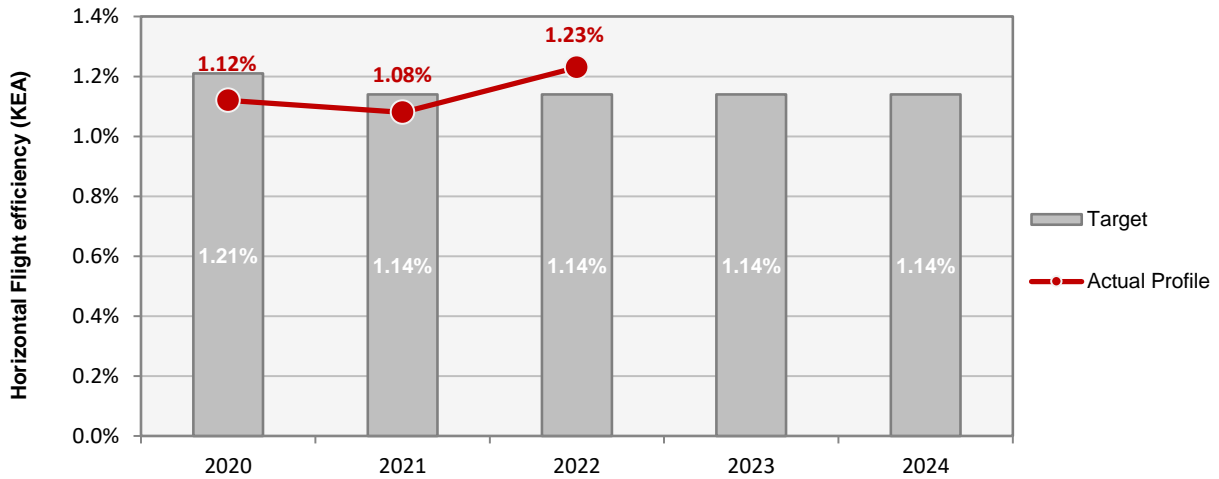
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| NAVIAR | 76 | C | C | C | B | B |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Two out of five EoSM components of the ANSP meet the RP3 target level. Over 2022, some improvements were observed in "Safety Risk Management" but not sufficient to achieve the target. Six questions are still to be improved for the remaining components during RP3 to achieve the RP3 targets level. | | | | | | |

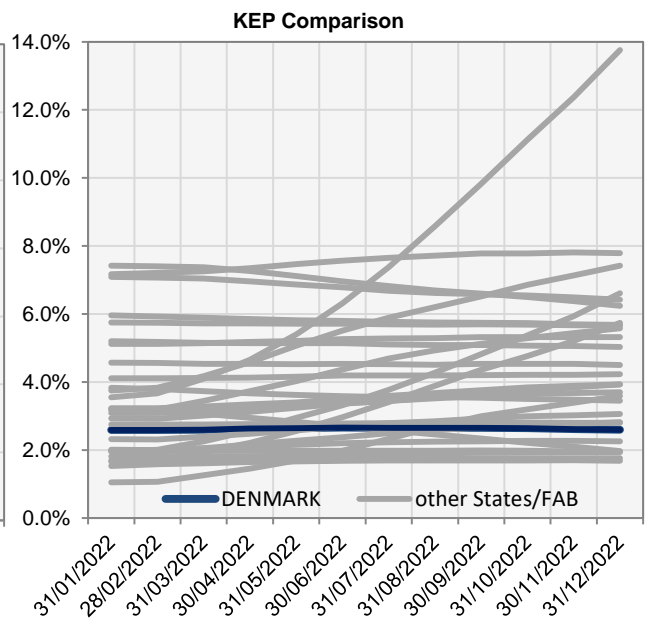
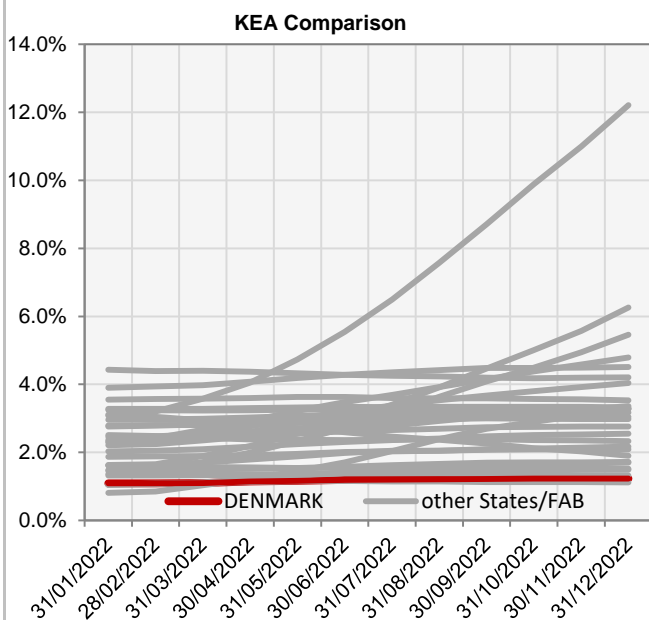
DENMARK

ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.21% | 1.14% | 1.14% | 1.14% | 1.14% |
| Actual performance | 1.12% | 1.08% | 1.23% | | |



| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 1.09% | 1.09% | 1.10% | 1.14% | 1.16% | 1.19% | 1.20% | 1.21% | 1.22% | 1.23% | 1.23% | 1.23% |
| KEP | 2.59% | 2.59% | 2.60% | 2.63% | 2.64% | 2.66% | 2.65% | 2.65% | 2.65% | 2.64% | 2.62% | 2.60% |
| KES | 2.32% | 2.33% | 2.35% | 2.39% | 2.41% | 2.44% | 2.45% | 2.46% | 2.47% | 2.47% | 2.47% | 2.45% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

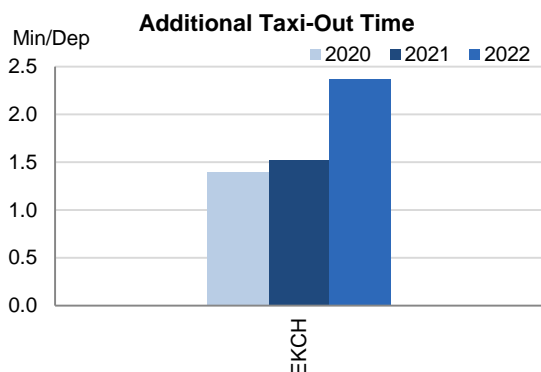
1. Overview

Denmark only has Copenhagen/Kastrup (EKCH) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the environmental indicators can be performed. Traffic at this airport in 2022 is still 23% lower than in 2019, even if 84% higher than in 2021.

Both additional times increased with respect to 2021, but are still below pre-COVID levels.

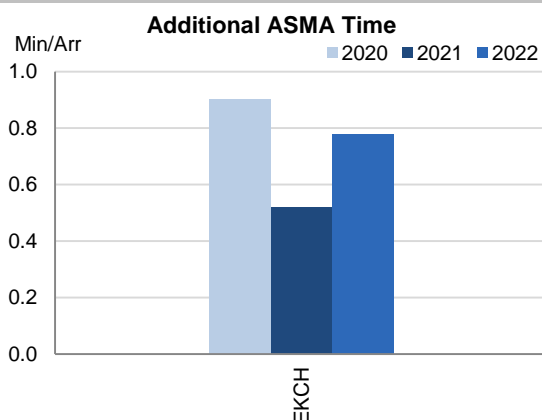
The share of CDO flights is 50.0% which is in the higher range of all observed values in 2022.

2. Additional Taxi-Out Time



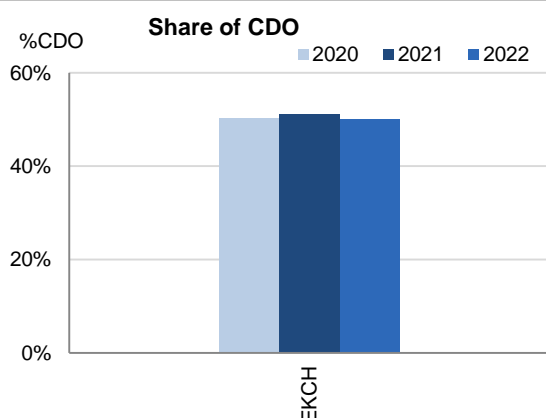
Additional taxi-out times at Copenhagen in 2022 were 9% lower than in 2019 but have significantly worsened compared to 2021 (EKCH; 2019: 2.59 min/dep.; 2020: 1.4 min/dep.; 2021: 1.52 min/dep.; 2022: 2.37 min/dep.)

3. Additional ASMA Time



Additional ASMA times at Copenhagen in 2022 increased by 50% but still 27% lower than in 2019 (EKCH; 2019: 1.07 min/arr.; 2020: 0.9 min/arr.; 2021: 0.52 min/arr.; 2022: 0.78 min/arr.)

4. Share of arrivals applying CDO



The share of CDO flights is 50.0% which is well above the overall RP3 value in 2022 (29.0%) and in the higher range of all observed values in 2022. It is however a slight decrease of 1.1 percentage points with respect to 2021.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Copenhagen/Kastrup-EKCH | 1.4 | 1.52 | 2.37 | | | 0.9 | 0.52 | 0.78 | | | 50% | 51% | 50% | | |

DENMARK

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The airspace design and procedures used are created in order to minimise the negative effects on the environmental performance.

FUA is fully implemented in Denmark, thus it is very hard to increase capacity any further. Denmark fulfils the capacity targets. An ongoing project of reconfiguration of airspace for the new F35 fighters, is seeking to minimise the potential negative effects from the enlarged airspace reservations.

Military - related measures implemented or planned to improve capacity

FUA is fully implemented in Denmark. NSA, ANSP and Military cooperates with the scope of further reduction of the impact of the military dimension. The development of Environment PI#6 is now positive.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Denmark | 30% | 22% | 34% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Copenhagen | 30% | 22% | 34% | | |

Initiatives implemented or planned to improve PI#6

None, NSA monitors the performance via regularly reporting as well as FUA Level 1 where the NSA and the Military evaluates the performance with the scope of further improvement if possible.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Denmark | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Copenhagen | | | | | |

Initiatives implemented or planned to improve PI#7

Neither Naviar or the NSA have this data available and have no plans to monitor this at local level but is using Eurocontrol numbers when available.

Free route airspace is implemented which is expected to decrease the use of CDR's.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Denmark | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Copenhagen | | | | | |

Initiatives implemented or planned to improve PI#8

Neither Naviar or the NSA have this data available and have no plans to monitor this at local level but are using Eurocontrol numbers when available. Furthermore free route airspace is implemented.

DENMARK

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.07 | 0.03 | 0.06 | 0.06 | 0.05 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>The last covid-19 restrictions were lifted in the early part of 2022 which fueled a significant demand for leisure airtravel over the summer, inspite of rising inflation, higher energy prices and uncertainty about the future.</p> <p>The demand for leisure travel continued to be strong throughout the year as recession fears receded due to energy prices and inflation beginning to come down again. The somewhat unexpected strong rebound in airtraffic in 2022 lead to some capacity issues in airports and air traffic services. This has continued into 2023.</p> <p>The capacity target has been met.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Capacity Planning | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Copenhagen ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 100 | 104 | 104 | 99 | |
| Actual | 113 | 113 | 100 | 108 | | | |
| Higher trainee pass-ratio and additional ATCO resources from Military than planned | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| No corrective measures were required to date. When planning ahead the NSA sees no significant risk, however there are capacity constraints at the ANSP due to lack of ATCO resources despite the higher intake as described above. NSA is in dialogue with the ANSP to ensure the best possible capacity in the years ahead. | | | | | | | |
| Summary of capacity performance | | | | | | | |
| Denmark experienced an increase in traffic from 300k flights in 2021, to 505k flights in 2022, with almost zero ATFM in both years. However, traffic levels were still substantially below the 669k flights in 2019. | | | | | | | |

1. Overview

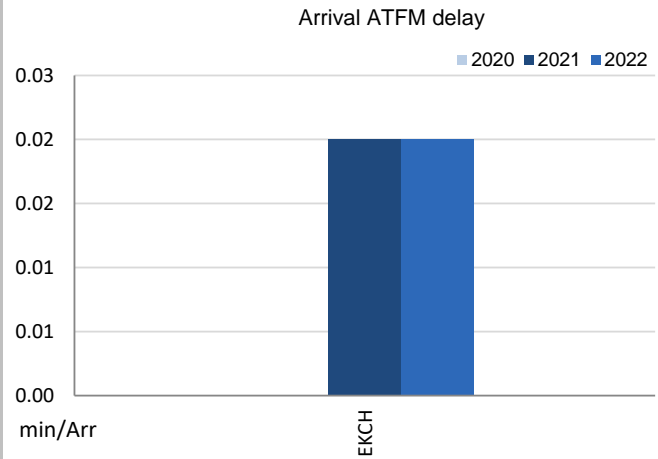
Denmark only has Copenhagen/Kastrup (EKCH) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed.

Traffic at this airport in 2022 is still 23% lower than in 2019, even if 84% higher than in 2021.

Average arrival ATFM delay in 2022 was 0.02 min/arr, same as in 2021.

ATFM slot adherence remained very high (2022: 98.9%; 2021: 99.2%).

2. Arrival ATFM Delay

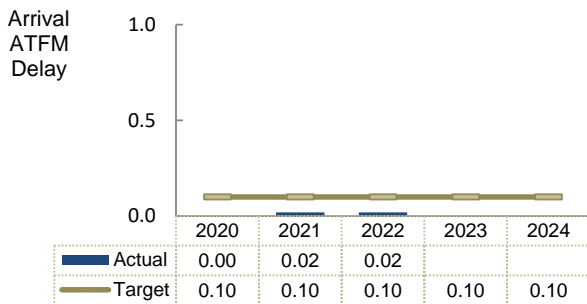


Copenhagen, that in the last years had registered low delays, observed nearly zero delays in 2021 and 2022 (EKCH; 2019: 0.07 min/arr.; 2020: 0 min/arr.; 2021: 0.02 min/arr.; 2022: 0.02 min/arr.)

All regulations were attributed to Aerodrome Capacity issues and concentrated mostly in September.

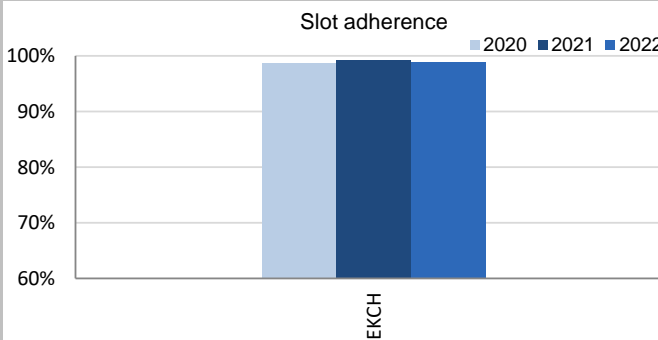
According to the Danish monitoring report: *There are capacity constraints at the TWR/APP unit in EKCH due to lack of ATCO resources, which as per today is expected to mean that the targets for 2023 will not be met. NSA is following up on the measures taken by the ANSP to ensure higher capacity in the years to come. The ANSP has moved ATCO resources from another unit to EKCH and the NSA is looking into different possibilities to facilitate higher mobility of ATCO's e.g. in relation to language barriers.*

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Copenhagen's ATFM slot compliance in 2022 was 98.9%, a slight decrease but still outstanding performance. With regard to the 1.1% of flights that did not adhere, 1% was early and 0.1% was late.

According to the Danish monitoring report: Performance is stable. NSA monitors the performance via monthly reports from the ANSP, and yearly evaluation.

5. ATC Pre-departure Delay

ATC pre-departure delay at Copenhagen (EKCH: 2021: 0.13 min/dep; 2022: 0.04 min/dep) has decreased in 2022 and it is also below the pre-pandemic value (0.09 min/dep)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Copenhagen increased significantly in 2022 (EKCH: 2020: 6.79 min/dep.; 2021: 9.63 min/dep.; 2022: 14.9 min/dep.). The highest delays per flight were observed in June-July and December.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Copenhagen/Kastrup-EKCH | 0 | 0.02 | 0.02 | | | 98.7% | 99.2% | 98.9% | | | n/a | 0.13 | 0.04 | | | 6.79 | 9.63 | 14.90 | | |

DENMARK: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Denmark ECZ represents 1.6% of the SES en route ANS actual costs in 2022
- National currency: DKK Exchange rates (1 EUR=) 2017: 7.43692 DKK 2022: 7.43733 DKK
- Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/770 of 13 April 2022
The final version of the plan was adopted and published by Denmark in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Denmark: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|
| En route costs (nominal DKK) | 702 105 967 | 707 830 585 | 1 409 936 552 | 717 666 270 | 730 355 628 | 738 450 305 |
| Inflation % | 0.3% | 1.1% | | 1.4% | 1.5% | 1.6% |
| Inflation index (100 in 2017) | 101.7 | 102.8 | | 104.2 | 105.7 | 107.4 |
| Real en route costs (DKK2017) | 693 889 076 | 694 247 776 | 1 388 136 852 | 697 646 794 | 702 906 009 | 702 788 808 |
| Total en route service units | 716 778 | 767 182 | 1 483 960 | 1 455 159 | 1 660 614 | 1 784 164 |
| Real en route DUC per service unit (DKK2017) | 968.07 | 904.93 | 935.43 | 479.43 | 423.28 | 393.90 |
| Real en route DUC per service unit (€2017) | 130.17 | 121.68 | 125.78 | 64.47 | 56.92 | 52.97 |
| Denmark: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal DKK) | 702 105 967 | 709 225 021 | 1 411 330 988 | 752 176 328 | | |
| Inflation % | 0.3% | 1.9% | | 8.5% | | |
| Inflation index (100 in 2017) | 101.7 | 103.6 | | 112.5 | | |
| Real en route costs (DKK2017) | 693 889 076 | 691 649 606 | 1 385 538 681 | 692 727 108 | | |
| Total en route service units | 716 778 | 784 993 | 1 501 771 | 1 282 410 | | |
| Real en route AUC per service unit (DKK2017) | 968.07 | 881.09 | 922.60 | 540.18 | | |
| Real en route AUC per service unit (€2017) | 130.17 | 118.48 | 124.06 | 72.63 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal DKK) | in value | 0 | 1 394 436 | 1 394 436 | 34 510 058 | |
| | in % | - | +0.2% | +0.1% | +4.8% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.8 p.p. | | 7.2 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.8 p.p. | | 8.2 p.p. | |
| Real en route costs (DKK2017) | in value | 0 | -2 598 170 | -2 598 170 | -4 919 686 | |
| | in % | - | -0.4% | -0.2% | -0.7% | |
| Total en route service units | in value | 0 | 17 811 | 17 811 | -172 749 | |
| | in % | - | +2.3% | +1.2% | -11.9% | |
| Real en route unit cost per service unit (DKK2017) | in value | 0.00 | -23.84 | -12.82 | 60.75 | |
| | in % | - | -2.6% | -1.4% | +12.7% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -3.21 | -1.72 | 8.17 | |
| | in % | - | -2.6% | -1.4% | +12.7% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +12.7% (or +60.75 DKK2017, +8.17 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-11.9%) and slightly lower than planned en route costs in real terms (-0.7%, or -4.9 MDKK2017, -0.7 ME2017). It should be noted that actual inflation index in 2022 was +8.2 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-11.9%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (NAVIAR) bearing a loss of -3.2 ME2017.

En route costs by entity

Actual real en route costs are -0.7% (-0.7 ME2017) lower than planned. This is the result of lower costs for the MET service provider (-8.8%, or -0.4 ME2017) and the NSA/EUROCONTROL (-4.8%, or -0.5 ME2017). The costs for the main ANSP, NAVIAIR were slightly higher than planned (+0.4%, or +0.3 ME2017).

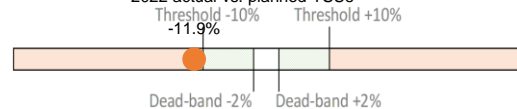
En route costs for the main ANSP (NAVIAR) at charging zone level

Slightly higher than planned en route costs in real terms for NAVIAIR in 2022 (+0.4%, or +0.3 ME2017) result from the combination of:

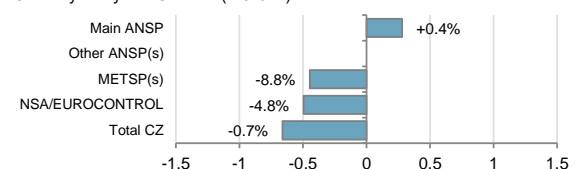
- Staff costs that remained in line with the plan in real terms. In nominal terms, staff costs were +7.9% higher than plan mainly due to the "not realised effects from the implementation of the Strategy and more extra shifts";
- Lower other operating costs (-5.8%), mainly due to the inflation index impact (+8.2 p.p.) since in nominal terms other operating costs were slightly higher than planned (+1.6%);
- Lower depreciation (-5.7%), resulting from "fewer and postponed investments, and later date of entry into operation than planned";
- Higher cost of capital (+6.4%), resulting from the use of higher share of financing through equity than planned (54.8% instead of 46.3%) to compute actual cost of capital;
- No deduction through exceptional costs in 2022, which was foreseen in the PP reflecting a "top-down" approach applied by Denmark to contribute to the objective of cost-efficiency;

Note: It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.

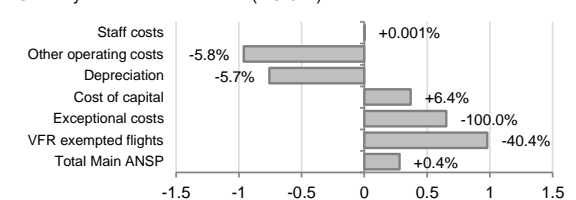
2022 actual vs. planned TSUs



Costs by entity at ECZ level (ME2017):



Costs by nature for main ANSP (ME2017):



DENMARK: En route charging zone

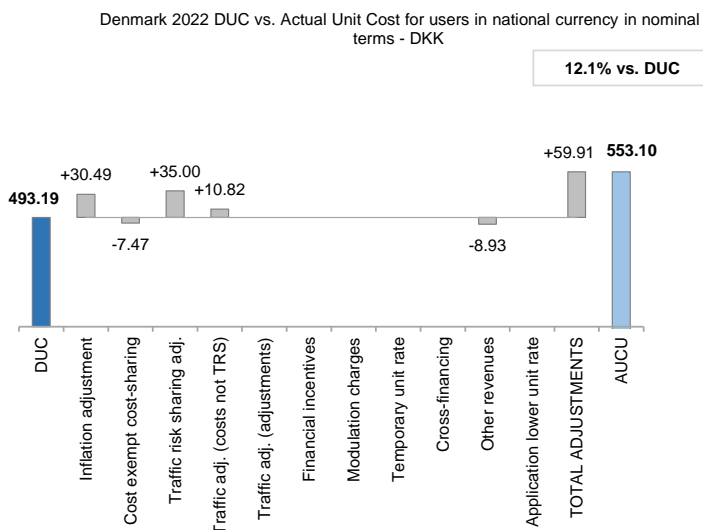
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | DKK/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 493.19 | 66.31 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 493.19 | 66.31 |
| Inflation adjustment | 30.49 | 4.10 |
| Cost exempt from cost-sharing | -7.47 | -1.00 |
| Traffic risk sharing adjustment | 35.00 | 4.71 |
| Traffic adj. (costs not TRS) | 10.82 | 1.45 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -8.93 | -1.20 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 59.91 | 8.06 |
| AUCU | 553.10 | 74.37 |
| AUCU vs. DUC | +12.1% | +12.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

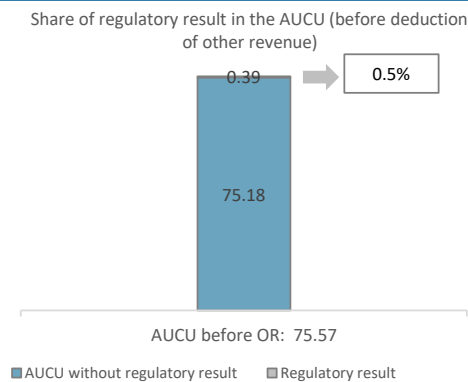
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| by item | DKK '000 | € '000 | DKK/SU | €/SU |
|--|---------------|---------------|--------------|--------------|
| New and existing investments | -5 888 | -792 | -4.59 | -0.62 |
| Competent authorities and qualified entities costs | -5 916 | -795 | -4.61 | -0.62 |
| Eurocontrol costs | 2 225 | 299 | 1.74 | 0.23 |
| Pension costs | 0 | 0 | 0.00 | 0.00 |
| Interest on loans | 0 | 0 | 0.00 | 0.00 |
| Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | -9 579 | -1 288 | -7.47 | -1.00 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | DKK '000 | € '000 | DKK/SU | €/SU |
|-----------------------------------|----------------|---------------|---------------|--------------|
| NAVIAR | 1 115 | 150 | 0.87 | 0.12 |
| METSP(s) | | | | |
| Denmark MET | 2 641 | 355 | 2.06 | 0.28 |
| Total charging zone | 3 756 | 505 | 2.93 | 0.39 |
| Actual cost for users*** | 720 756 | 96 911 | 562.03 | 75.57 |
| Regulatory result (% AUCU) | 0.5% | 0.5% | 0.5% | 0.5% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (553.10 DKK or 74.37 €) is +12.1% higher than the nominal DUC (493.19 DKK or 66.31 €). The difference between these two figures (+59.91 DKK/SU or +8.06 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+30.49 DKK/SU or +4.10 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-7.47 DKK/SU or -1.00 €/SU);
- the addition of the traffic risk sharing adjustments (+35.00 DKK/SU or +4.71 €/SU);
- the addition of the traffic adjustment (+10.82 DKK/SU or +1.45 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-8.93 DKK/SU or -1.20 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 0.5%.

DENMARK: En route main ANSP (NAVIAR)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

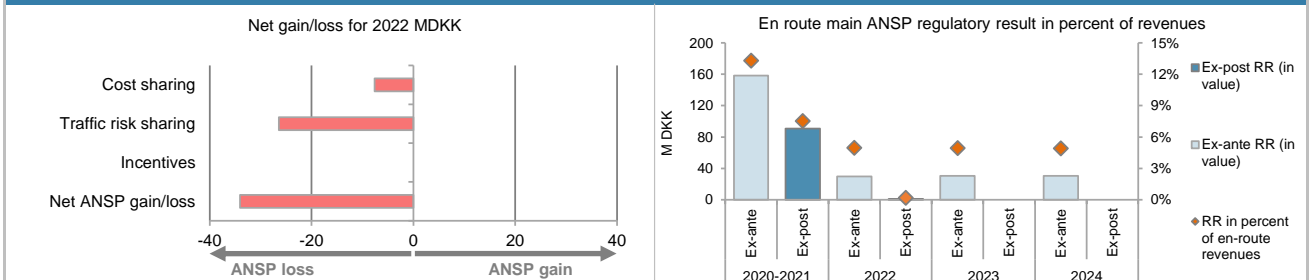
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -4 637 | -39 034 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 3 652 | 36 333 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -4 926 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -985 | -7 627 | | |
| Traffic risk sharing (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.2% | -11.9% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 191 512 | 600 793 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 14 301 | -26 435 | | |
| Incentives (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (DKK '000) | 13 316 | -34 062 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 1 791 | -4 580 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| NAVIAR planned regulatory result (DKK '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|----------------|----------------|----------------|
| Total asset base | 930 724 | 1 003 896 | 1 934 620 | 1 286 800 | 1 331 989 | 1 270 368 |
| Proportion of financing through equity (in %) | 95% | 227% | 164% | 46% | 46% | 48% |
| RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| RoE (in value) | 44 276 | 113 907 | 158 183 | 29 783 | 30 397 | 30 587 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 44 276 | 113 907 | 158 183 | 29 783 | 30 397 | 30 587 |
| Revenue for the en route charging zone | 593 250 | 598 262 | 1 191 512 | 600 793 | 615 516 | 623 714 |
| Ex-ante regulatory result (+/-) in percent of revenues | 7.5% | 19.0% | 13.3% | 5.0% | 4.9% | 4.9% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| NAVIAR actual regulatory result (DKK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 930 724 | 1 003 896 | 1 934 620 | 1 283 809 | | |
| Proportion of financing through equity (in %) | 95% | 66% | 80% | 55% | | |
| RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | | |
| RoE (in value) | 44 276 | 33 314 | 77 590 | 35 176 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 13 316 | 13 316 | -34 062 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 44 276 | 46 629 | 90 906 | 1 115 | | |
| Revenue for the en route charging zone | 593 250 | 616 215 | 1 209 465 | 605 765 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 7.5% | 7.6% | 7.5% | 0.2% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 7.0% | 5.9% | 0.2% | | |

13. Focus on the main ANSP regulatory result on en route activity



NAVIAR net gain on activity in the Denmark en route charging zone in the year 2022

NAVIAR reported a net loss of -34.1 MDKK, as a combination of a loss of -7.6 MDKK arising from the cost sharing mechanism, with a loss of -26.4 MDKK arising from the traffic risk sharing mechanism.

NAVIAR overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net loss from the en route activity mentioned above (-34.1 MDKK) and the actual RoE (+35.2 MDKK) amounts to +1.1 MDKK (0.2% of the en route revenues). The resulting ex-post rate of return on equity is 0.2%, which is lower than the 5.0% planned in the PP.

DENMARK: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| Denmark MET planned regulatory result (DKK '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 34 408 | 35 115 | 69 523 | 39 220 | 39 843 | 40 447 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Denmark MET actual regulatory result (DKK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 3 437 | 3 437 | 2 641 | | |
| Revenue for the en route charging zone | 34 408 | 35 257 | 69 666 | 41 028 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 9.7% | 4.9% | 6.4% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Denmark (Denmark MET) corresponds to 6.4% of the en route revenues and in full represents the effect of cost sharing mechanism. It should be noted that Denmark MET does not charge cost of capital. | | | | | | |

DENMARK: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|----------------------|-----------------|--|-----------------|-----------------|-----------------|
| Denmark TCZ represents 1.8% of the SES terminal ANS actual costs in 2022 | | | | | | |
| Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> · Airports with fewer than 80,000 IFR mvmts: 0 · Airports with more than 80,000 IFR mvmts: 1 | | | | | | |
| National currency: DKK Exchange rates (1 EUR=) 2017: 7.43692 DKK 2022: 7.43733 DKK | | | | | | |
| Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Denmark: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal DKK) | 178 500 910 | 180 151 180 | 358 652 091 | 178 997 731 | 184 217 288 | 187 621 588 |
| Inflation % | 0.3% | 1.1% | | 1.4% | 1.5% | 1.6% |
| Inflation index (100 in 2017) | 101.7 | 102.8 | | 104.2 | 105.7 | 107.4 |
| Real terminal costs (DKK2017) | 175 999 174 | 176 004 712 | 352 003 886 | 172 957 837 | 175 845 968 | 176 726 394 |
| Total terminal service units | 63 465 | 69 806 | 133 271 | 142 617 | 159 502 | 170 803 |
| Real terminal DUC per service unit (DKK2017) | 2 773.16 | 2 521.34 | 2 641.26 | 1 212.74 | 1 102.47 | 1 034.68 |
| Real terminal DUC per service unit (€2017) | 372.89 | 339.03 | 355.16 | 163.07 | 148.24 | 139.13 |
| Denmark: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal DKK) | 178 500 910 | 180 475 630 | 358 976 540 | 181 991 481 | | |
| Inflation % | 0.3% | 1.9% | | 8.5% | | |
| Inflation index (100 in 2017) | 101.7 | 103.6 | | 112.5 | | |
| Real terminal costs (DKK2017) | 175 999 174 | 175 112 794 | 351 111 968 | 165 040 589 | | |
| Total terminal service units | 63 465 | 72 703 | 136 168 | 130 953 | | |
| Real terminal AUC per service unit (DKK2017) | 2 773.16 | 2 408.61 | 2 578.52 | 1 260.31 | | |
| Real terminal AUC per service unit (€2017) | 372.89 | 323.87 | 346.72 | 169.47 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal DKK) | in value 0 | 324 450 | 324 450 | 2 993 750 | | |
| | in % - | +0.2% | +0.1% | +1.7% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.8 p.p. | | 7.2 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.8 p.p. | | 8.2 p.p. | | |
| Real terminal costs (DKK2017) | in value 0 | -891 918 | -891 918 | -7 917 247 | | |
| | in % - | -0.5% | -0.3% | -4.6% | | |
| Total terminal service units | in value 0 | 2 897 | 2 897 | -11 665 | | |
| | in % -0.00% | +4.2% | +2.2% | -8.2% | | |
| Real terminal unit cost per service unit (DKK2017) | in value 0.00 | -112.74 | -62.74 | 47.57 | | |
| | in % +0.0% | -4.5% | -2.4% | +3.9% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -15.16 | -8.44 | 6.40 | | |
| | in % +0.00% | -4.5% | -2.4% | +3.9% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs Threshold -10% Threshold +10% Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +3.9% (or +47.57 DKK2017, +6.4 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-8.2%) and lower than planned terminal costs in real terms (-4.6%, or -7.9 MDKK2017, -1.1 M€2017). It should be noted that actual inflation index in 2022 was +8.2 p.p. higher than planned.</p> | | | | | | |
| Terminal service units | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>The difference between actual and planned TNSUs (-8.2%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (NAVIAIR) bearing a loss of -0.8 M€2017.</p> | | | | | | |
| Terminal costs by entity | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Actual real terminal costs are -4.6% (-1.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, NAVIAIR (-4.8%, or -1.1 M€2017) and higher costs for the MET service provider (+18.6%, or +0.04 M€2017).</p> | | | | | | |
| Terminal costs for the main ANSP (NAVIAIR) at charging zone level | | | | | | |
| <p>Lower than planned terminal costs in real terms for NAVIAIR in 2022 (-4.8%, or -1.1 M€2017) result from:</p> <ul style="list-style-type: none"> - Lower staff costs (-3.9%), mainly due to the inflation index impact (+8.2 p.p.) since in nominal terms staff costs were higher than planned (+3.6%); - Significantly lower other operating costs (-5.5%), mainly due to the inflation index impact (+8.2 p.p.) since in nominal terms other operating costs were slightly higher than planned (+1.9%); - Significantly lower depreciation (-7.5%), resulting from "fewer and postponed investments, and later date of entry into operation than planned"; - Higher cost of capital (+3.7%), due to the use of higher share of financing through equity than planned (56.0% instead of 50.2%) to compute actual cost of capital; and, - No deduction through exceptional costs in 2022, which was foreseen in the PP reflecting a "top-down" approach applied by Denmark to contribute to the objective of cost-efficiency. | | | | | | |

DENMARK: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

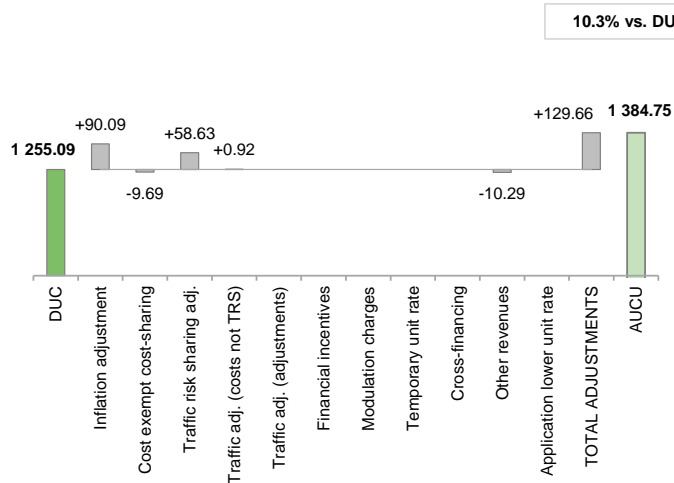
5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level

Denmark 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - DKK



| Components of the AUCU | DKK/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 1 255.09 | 168.76 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 1 255.09 | 168.76 |
| Inflation adjustment | 90.09 | 12.11 |
| Cost exempt from cost-sharing | -9.69 | -1.30 |
| Traffic risk sharing adjustment | 58.63 | 7.88 |
| Traffic adj. (costs not TRS) | 0.92 | 0.12 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -10.29 | -1.38 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 129.66 | 17.43 |
| AUCU | 1 384.75 | 186.19 |
| AUCU vs. DUC | 10.3% | 10.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

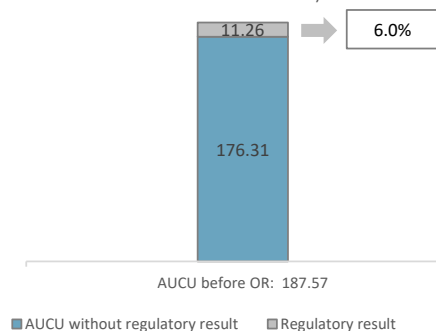
7. Terminal costs exempt from cost sharing

| | | DKK '000 | € '000 | DKK/SU | €/SU |
|---|--|---------------|-------------|--------------|--------------|
| by item | New and existing investments | -1 268 | -171 | -9.69 | -1.30 |
| | Competent authorities and qualified entities costs | 0 | 0 | 0.00 | 0.00 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -1 268 | -171 | -9.69 | -1.30 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | DKK '000 | € '000 | DKK/SU | €/SU |
|-----------------------------------|----------------|---------------|-----------------|---------------|
| NAVIAR | 11 260 | 1 514 | 85.99 | 11.56 |
| METSP(s) | | | | |
| Denmark-MET | -296 | -40 | -2.26 | -0.30 |
| Total charging zone | 10 965 | 1 474 | 83.73 | 11.26 |
| Actual cost for users*** | 182 686 | 24 563 | 1 395.05 | 187.57 |
| Regulatory result (% AUCU) | 6.0% | 6.0% | 6.0% | 6.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (1 384.75 DKK or 186.19 €) is +10.3% higher than the nominal DUC (1 255.09 DKK or 168.76 €). The difference between these two figures (+129.66 DKK/SU or +17.43 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+90.09 DKK/SU or +12.11 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-9.69 DKK/SU or -1.30 €/SU);
- the addition of the traffic risk sharing adjustments (+58.63 DKK/SU or +7.88 €/SU);
- the addition of the traffic adjustment (+0.92 DKK/SU or +0.12 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-10.29 DKK/SU or -1.38 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 6.0%.

DENMARK: Terminal main ANSP (NAVIAIR)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

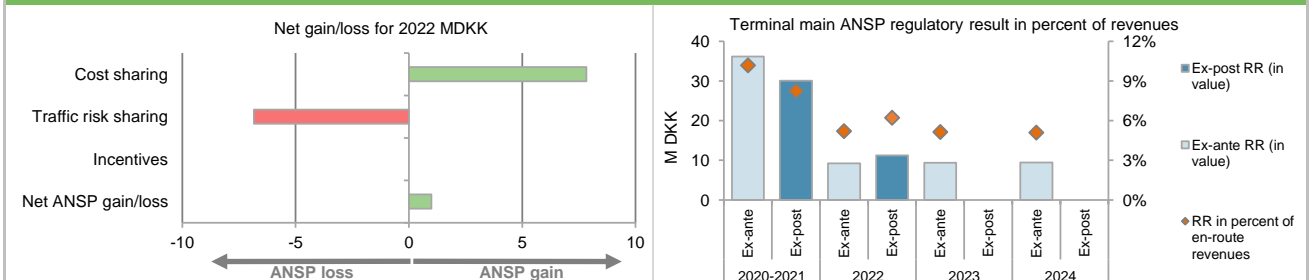
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -456 | -2 581 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 181 | 11 681 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -1 268 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 725 | 7 831 | | |
| Traffic risk sharing (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.2% | -8.2% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 355 567 | 177 522 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 7 297 | -6 841 | | |
| Incentives (DKK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (DKK '000) | 8 021 | 990 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 1 079 | 133 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| NAVIAIR planned regulatory result (DKK '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 265 921 | 286 827 | 552 748 | 367 657 | 380 568 | 362 962 |
| Proportion of financing through equity (in %) | 91% | 168% | 131% | 50% | 49% | 52% |
| RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| RoE (in value) | 12 096 | 24 110 | 36 206 | 9 229 | 9 393 | 9 473 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 12 096 | 24 110 | 36 206 | 9 229 | 9 393 | 9 473 |
| Revenue for the terminal charging zone | 176 970 | 178 597 | 355 567 | 177 522 | 182 717 | 186 100 |
| Ex-ante regulatory result (+/-) in percent of revenues | 6.8% | 13.5% | 10.2% | 5.2% | 5.1% | 5.1% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% | 5.0% |
| NAVIAIR actual regulatory result (DKK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 265 921 | 286 827 | 552 748 | 366 802 | | |
| Proportion of financing through equity (in %) | 91% | 69% | 80% | 56% | | |
| RoE pre-tax rate (in %) | 5.0% | 5.0% | 5.0% | 5.0% | | |
| RoE (in value) | 12 096 | 9 933 | 22 029 | 10 270 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 8 021 | 8 021 | 990 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 12 096 | 17 955 | 30 051 | 11 260 | | |
| Revenue for the terminal charging zone | 176 970 | 187 075 | 364 045 | 181 093 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 6.8% | 9.6% | 8.3% | 6.2% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 9.0% | 6.8% | 5.5% | | |

13. Focus on main ANSP regulatory result on terminal activity



NAVIAIR net gain on activity in the Denmark terminal charging zone in the year 2022

NAVIAIR reported a net gain of +1.0 MDKK, as a combination of a gain of +7.8 MDKK arising from the cost sharing mechanism and a loss of -6.8 MDKK arising from the traffic risk sharing mechanism.

NAVIAIR overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.0 MDKK) and the actual RoE (+10.3 MDKK) amounts to +11.3 MDKK (6.2% of the terminal revenues). The resulting ex-post rate of return on equity is 5.5%, which is higher than the 5.0% planned in the PP.

DENMARK: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|--------|-------|-------|
| Denmark-MET planned regulatory result (DKK '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 1 531 | 1 554 | 3 085 | 1 476 | 1 500 | 1 522 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Denmark-MET actual regulatory result (DKK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 135 | 135 | -296 | | |
| Revenue for the terminal charging zone | 1 531 | 1 558 | 3 089 | 1 593 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 8.7% | 4.4% | -18.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Denmark (Denmark MET) corresponds to -18.6% of the terminal revenues. It should be noted that Denmark MET does not charge cost of capital. | | | | | | |

DENMARK: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | |
|--|---------------|----------------|---------------|-------------|---------------|----------------|---------------|----------|---------------|
| Charging zones concerned: | | | | | | | | | |
| En route charging zone 1: Denmark | | | | | | | | | |
| Terminal charging zone 1: Denmark | | | | | | | | | |
| Denmark: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | |
| Real en route costs (€2017) | | 93 303 286 | 93 351 519 | 186 654 805 | 93 808 565 | 94 515 742 | 94 499 982 | | |
| Real terminal costs (€2017) | | 23 665 600 | 23 666 345 | 47 331 945 | 23 256 649 | 23 644 999 | 23 763 385 | | |
| Real gate-to-gate costs (€2017) | | 116 968 886 | 117 017 863 | 233 986 750 | 117 065 214 | 118 160 741 | 118 263 367 | | |
| En route share (%) | | 79.8% | 79.8% | 79.8% | 80.1% | 80.0% | 79.9% | | |
| Denmark: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | |
| Real en route costs (€2017) | | 93 303 286 | 93 002 158 | 186 305 444 | 93 147 043 | | | | |
| Real terminal costs (€2017) | | 23 665 600 | 23 546 414 | 47 212 014 | 22 192 062 | | | | |
| Real gate-to-gate costs (€2017) | | 116 968 886 | 116 548 571 | 233 517 457 | 115 339 105 | | | | |
| En route share (%) | | 79.8% | 79.8% | 79.8% | 80.8% | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | |
| | in value | 0 | -469 292 | -469 292 | -1 726 109 | | | | |
| | in % | 0.0% | -0.4% | -0.2% | -1.5% | | | | |
| En route share | | | | | | | | | |
| | in p.p. | 0.0 p.p. | 0.0 p.p. | 0.0 p.p. | 0.6 p.p. | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | |
| | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -1.5% (-1.7 M€2017) lower than planned, as en route costs are lower than planned by -0.7 M€2017 and terminal costs are lower than planned by -1.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (80.8%) is slightly higher than planned in the PP for 2022 (80.1%).</p> | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | |
| In DKK '000 | | | | | | | | | |
| | | | Ex-ante | | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | | RR | Revenues | RR % revenues | | |
| NAVIAIR | 39 012 | 778 314 | 5.0% | | 12 375 | 786 858 | 1.6% | | |
| METSP(s) | | | RR | Revenues | RR % revenues | | RR | Revenues | RR % revenues |
| Denmark MET | 0 | 40 696 | 0.0% | | 2 345 | 42 621 | 5.5% | | |
| Total | 39 012 | 819 010 | 4.8% | | 14 720 | 829 478 | 1.8% | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Denmark covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +14.7 MDKK (+3.8 MDKK for en route and +11.0 MDKK for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 1.8% of gate-to-gate ANS revenues.</p> <p>This is lower than the return planned for the year (4.8% of gate-to-gate revenues).</p> | | | | | | | | | |
| <p>Denmark gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Estonia

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ESTONIA

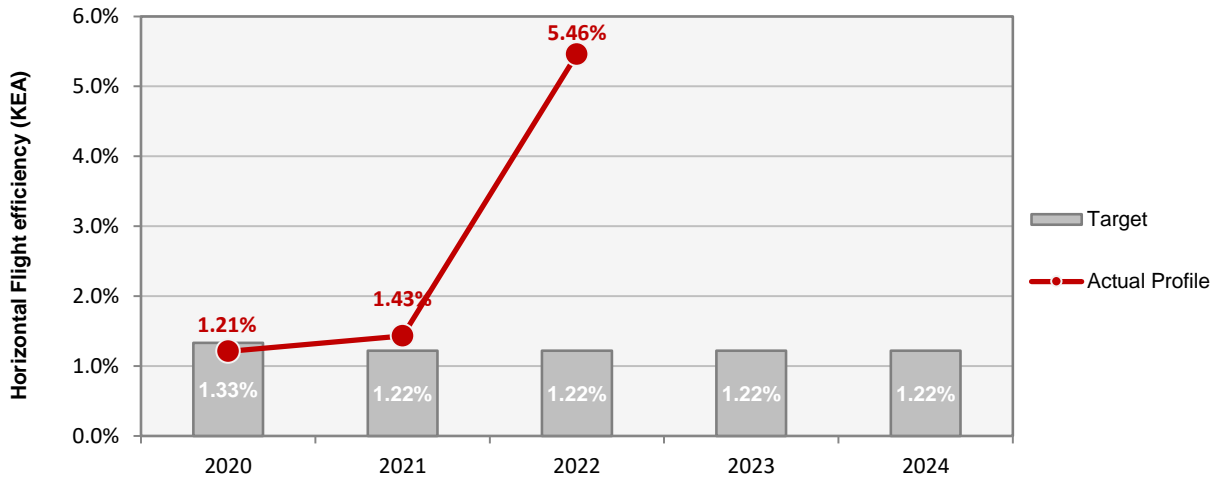
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| EANS | 100 | D | D | D | D | D |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All five EoSM components of the ANSP meet, or exceed, already the RP3 target level. Maturity has further improved compared with 2021, the ANSP now achieving maximum level for all components. | | | | | | |

ESTONIA

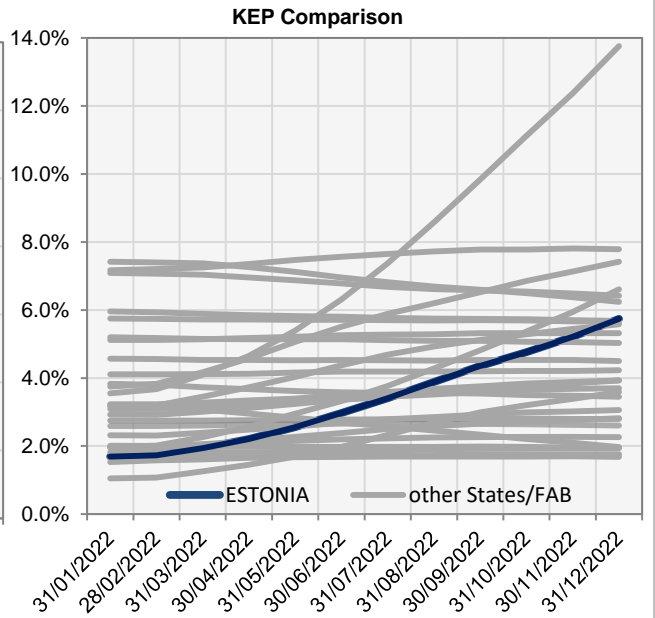
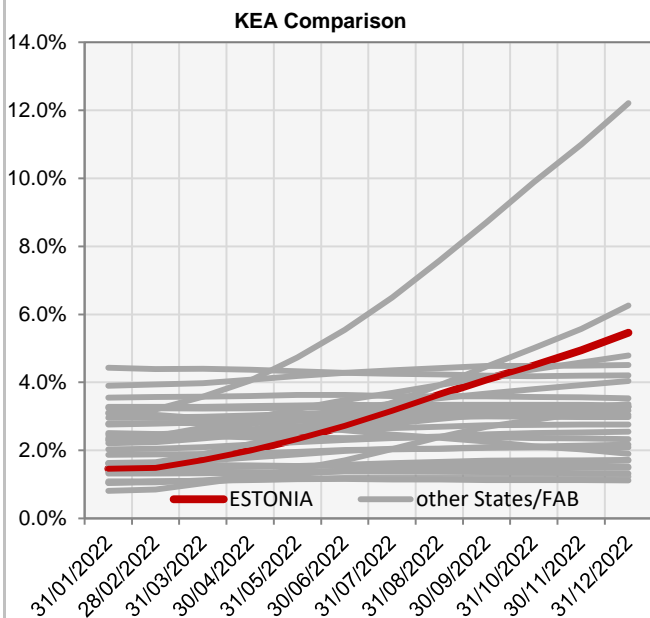
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.33% | 1.22% | 1.22% | 1.22% | 1.22% |
| Actual performance | 1.21% | 1.43% | 5.46% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.46% | 1.49% | 1.72% | 1.99% | 2.33% | 2.72% | 3.16% | 3.63% | 4.09% | 4.49% | 4.94% | 5.46% |
| KEP | 1.69% | 1.73% | 1.94% | 2.21% | 2.56% | 2.97% | 3.41% | 3.89% | 4.36% | 4.76% | 5.21% | 5.74% |
| KES | 1.66% | 1.71% | 1.92% | 2.22% | 2.59% | 3.01% | 3.48% | 3.98% | 4.44% | 4.84% | 5.26% | 5.76% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

ESTONIA

ENVIRONMENT - Airports

1. Overview

Estonia identified two airports, Tallinn and Tartu, as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 2 airports, additional taxi-out and ASMA times are not monitored and the environmental performance focuses only on the share of arrivals applying CDO.

Traffic at these Estonian airports in 2022 was 22% lower than in 2019.

The share of CDO flights has increased significantly and is in the higher range of all observed values in 2022. Estonia has the highest share of CDO flights when calculated by State (66.3%).

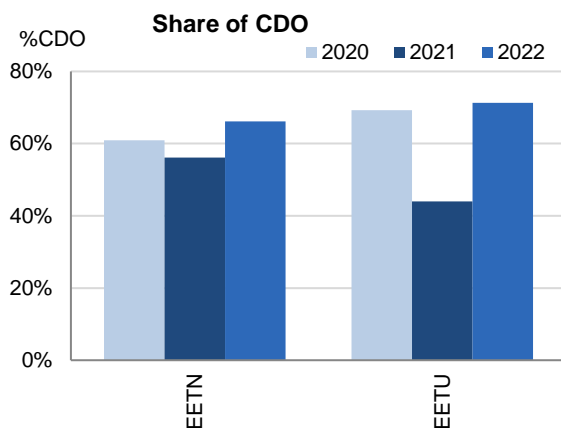
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

4. Share of arrivals applying CDO



The shares of CDO flights have significantly increased (EETN: +10.0 percentage points; EETU: +27.3 percentage points) with respect to 2021. They are still well above the overall RP3 value in 2022 (29.0%) and in the top 10 of all observed values in 2022.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Tallin-EETN | - | - | - | - | - | - | - | - | - | - | 61% | 56% | 66% | - | - |
| Tartu-EETU | - | - | - | - | - | - | - | - | - | - | 69% | 44% | 71% | - | - |

ESTONIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Military traffic significantly affects the environment in the Estonian airspace. Due to our geographical location and political influence, the share of military traffic in Estonian airspace is constantly increasing. The airspace design team collaborates closely with the Air Force to develop the best solutions, allowing for flexible use of SUA and airspace blocks. The LARA system is used for daily operations planning, which is integrated with the air traffic control system.

Significant impact on flight trajectories which will affect flight plan trajectories.
Military airspace users are booking more areas than they are using—resulting in the avoidance of unused airspace.

Military - related measures implemented or planned to improve capacity

FUA - flexible use of airspace, active meetings, and cooperation of the military side.
Regular 3B (3 Baltic states) CIV-MIL meetings to share information.

We are trying to mitigate it by tactical measures—maximum planning efforts on both tactical and pre-tactical levels.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Estonia | | | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Tallinn | | | | | |

Initiatives implemented or planned to improve PI#6

No data is available.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Estonia | 0% | 0% | 0% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Tallinn | 0% | 0% | 0% | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Estonia | | 0% | 0% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Tallinn | | 0% | 0% | | |

Initiatives implemented or planned to improve PI#8

ESTONIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|--|------|------|------|------|------|--------------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | 0.05 | 0.01 | 0.03 | 0.03 | 0.03 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>2021 was the year of global recovery from the COVID-19 pandemic. We were already optimistic about 2022, and suddenly Russia started the war in Ukraine.</p> <p>Regarding the controlled traffic, the year 2022 turned out to be much more complicated than expected. In response to Russia's military aggression against Ukraine, which started on 24 February 2022, the European Union took restrictive measures prohibiting Russian airlines, aircraft registered in Russia and aircraft owned, chartered or otherwise controlled by natural or legal persons, entities or bodies of Russia from landing, taking off from or overflying the territory of the European Union. Due to these measures, air traffic between Europe and Asia in the Estonian airspace decreased sharply.</p> <p>In 2022, the number of IFR flights controlled was 142,277 compared to the 175,000 flights forecast in the performance plan. The volume of service units related to IFR movements to which en route navigation services were provided was 41% lower than the forecast: 428,511 vs. 726,854 service units. On the other hand, due to the sanctions resulting from the war between Russia and Ukraine, there was a significant increase in the volume of air traffic in the airspace above the international waters for which we are responsible.</p> <p>En route capacity targets of Estonia, in minutes of ATFM delay per flight for 2022 was 0.03 min. Actual ATFM delay per flight for 2022 is recorded 0.0 min</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Review of the actual values from the NM dashboard. | | | | | | | |
| Capacity Planning | | | | | | | |
| | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Tallinn ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 25 | 27 | 27 | 27 | |
| Actual | 30 | 23 | 23 | 23 | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Not applicable | | | | | | | |
| Summary of capacity performance | | | | | | | |
| Estonia experienced an increase in traffic from 109k flights in 2021, to 142k flights in 2022 with zero ATFM delay. However, traffic levels were still substantially below the 227k flights in 2019. | | | | | | | |

ESTONIA

CAPACITY - Airports

1. Overview

Estonia identified two airports, Tallinn and Tartu, as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 2 airports, pre-departure delays are not monitored and the capacity performance focuses on arrival ATFM delays and slot adherence.

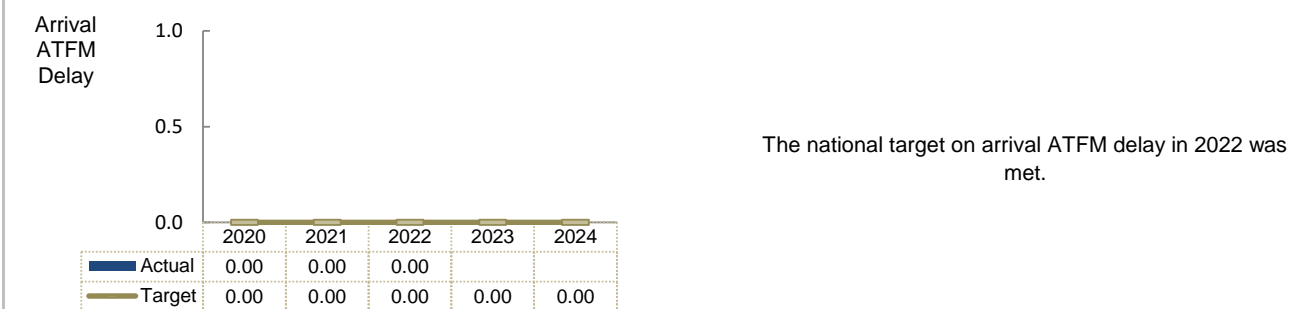
Traffic at these Estonian airports in 2022 was 23 % lower than in 2019 even if it increased by 49% with respect to 2021.

Like in the rest of RP3, no arrival ATFM delays were observed in the entire 2022 at these two airports and slot adherence remained very high (2022: 98.3%; 2021: 98.2%).

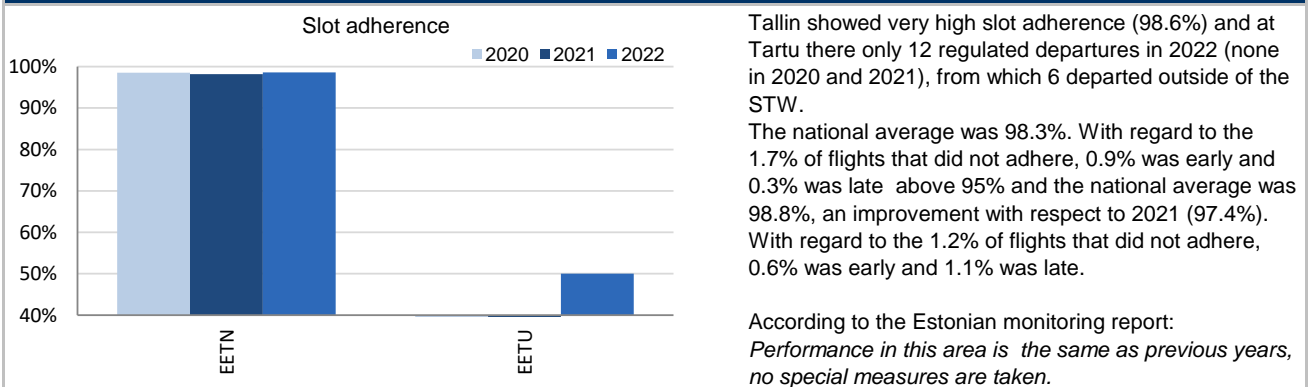
2. Arrival ATFM Delay



3. Arrival ATFM Delay – National Target



4. ATFM Slot Adherence



5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Tallin-EETN | 0 | 0 | 0 | | | 98.5% | 98.2% | 98.6% | | | - | - | - | | | - | - | - | | |
| Tartu-EETU | 0 | 0 | 0 | | | n/a | n/a | 50.0% | | | - | - | - | | | - | - | - | | |

ESTONIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Estonia ECZ represents 0.4% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 10 February 2022 and found consistent as per Commission Decision (EU) 2022/771 of 13 April 2022
The final version of the plan was adopted and published by Estonia in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Estonia: Data from RP3 Performance Plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-------------------------------|--------------|--------------|--------------|---------------|--------------|--------------|
| En route costs (nominal €) | | 26 963 328 | 26 899 545 | 53 862 873 | 26 786 115 | 28 336 431 | 29 613 617 |
| Inflation % | | 0.0% | 1.8% | | 2.5% | 2.1% | 1.9% |
| Inflation index (100 in 2017) | | 105.8 | 107.7 | | 110.4 | 112.7 | 114.8 |
| Real en route costs (€2017) | | 26 132 098 | 25 829 816 | 51 961 914 | 25 297 780 | 26 447 397 | 27 337 166 |
| Total en route service units | | 418 749 | 444 561 | 863 310 | 726 854 | 865 151 | 912 301 |
| Real en route DUC per service unit (€2017) | | 62.41 | 58.10 | 60.19 | 34.80 | 30.57 | 29.97 |
| Estonia: Actual data from Reporting Tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | | 26 963 329 | 26 509 273 | 53 472 602 | 26 083 732 | | |
| Inflation % | | 0.0% | 4.5% | | 19.4% | | |
| Inflation index (100 in 2017) | | 105.8 | 110.5 | | 132.0 | | |
| Real en route costs (€2017) | | 26 132 099 | 25 148 805 | 51 280 904 | 22 378 144 | | |
| Total en route service units | | 418 749 | 466 942 | 885 691 | 428 511 | | |
| Real en route AUC per service unit (€2017) | | 62.41 | 53.86 | 57.90 | 52.22 | | |
| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | in value | 1 | -390 272 | -390 271 | -702 383 | | |
| | in % | +0.0% | -1.5% | -0.7% | -2.6% | | |
| Inflation % | in p.p. | 0.0 p.p. | 2.7 p.p. | | 16.9 p.p. | | |
| | Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 2.9 p.p. | 21.6 p.p. | | |
| Real en route costs (€2017) | in value | 1 | -681 011 | -681 010 | -2 919 636 | | |
| | in % | +0.0% | -2.6% | -1.3% | -11.5% | | |
| Total en route service units | in value | 0 | 22 381 | 22 381 | -298 343 | | |
| | in % | - | +5.0% | +2.6% | -41.0% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -4.24 | -2.29 | 17.42 | | |
| | in % | +0.0% | -7.3% | -3.8% | +50.0% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +50.0% (or +17.42 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-41.0%) and significantly lower than planned en route costs in real terms (-11.5%, or -2.9 M€2017). It should be noted that actual inflation index in 2022 was +21.6 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-41.0%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (EANS) bearing a loss of -0.7 M€2017.

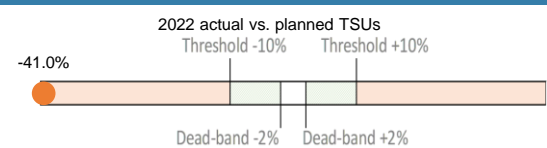
En route costs by entity

Actual real en route costs are -11.5% (-2.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, EANS (-15.2%, or -2.9 M€2017) and the NSA/EUROCONTROL (-0.8%, or -0.1 M€2017).

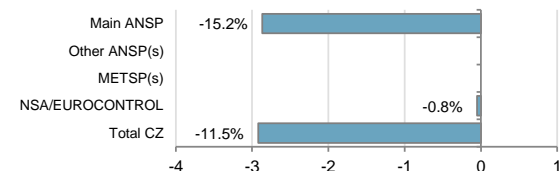
En route costs for the main ANSP (EANS) at charging zone level

Significantly lower than planned en route costs in real terms for EANS in 2022 (-15.2%, or -2.9 M€2017) result from:

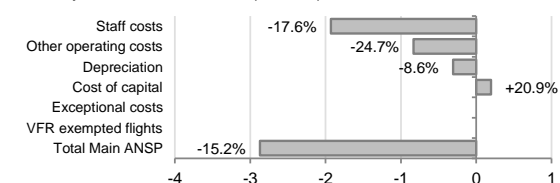
- Significantly lower staff costs (-17.6%) including lower pension costs in 2022. The substantial decrease in real terms is mainly due to the inflation index impact (+21.6 p.p.). In nominal terms, staff costs are -1.4% lower than planned.
- Significantly lower other operating costs in real terms (-24.7%) reflecting the inflation impact but also "extensive cost-cutting measures to reduce losses. Travelling expenses, equipment maintenance costs and training expenses were the main items for savings."
- Significantly lower depreciation (-8.6%) due to a delay in the implementation of new and existing investments,
- Significantly higher cost of capital (+20.9%) due to a higher share of financing through equity than planned in the determined cost.



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



ESTONIA: En route charging zone

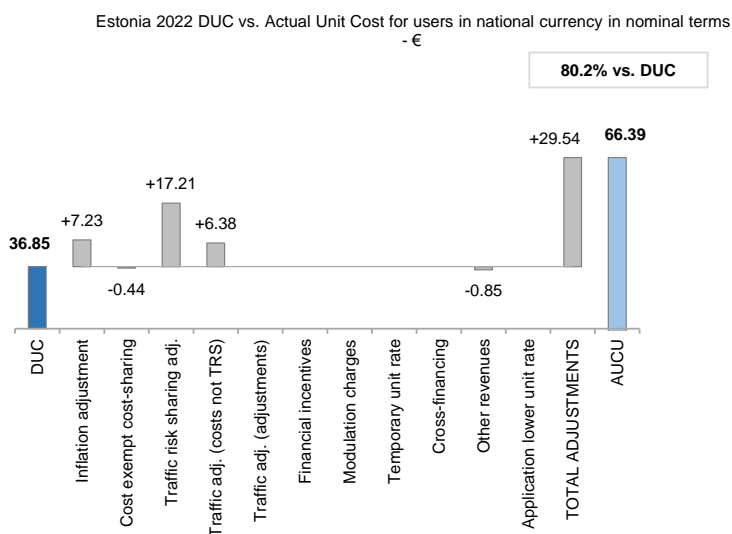
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 36.85 |
| DUC to be charged retroactively | 0.00 |
| DUC | 36.85 |
| Inflation adjustment | 7.23 |
| Cost exempt from cost-sharing | -0.44 |
| Traffic risk sharing adjustment | 17.21 |
| Traffic adj. (costs not TRS) | 6.38 |
| Traffic adj. (adjustments)* | - |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | - |
| Cross-financing | 0.00 |
| Other revenues | -0.85 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 29.54 |
| AUCU | 66.39 |
| AUCU vs. DUC | +80.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

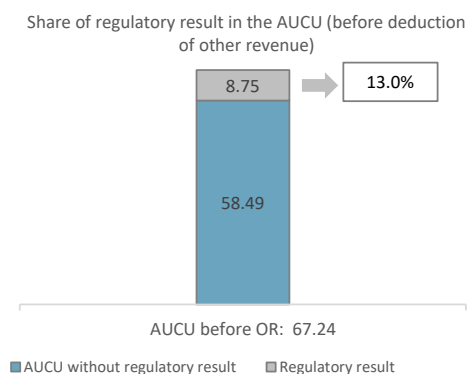
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-------------|--------------|
| by item | New and existing investments | -64 | -0.15 |
| | Competent authorities and qualified entities costs | 21 | 0.05 |
| | Eurocontrol costs | -72 | -0.17 |
| | Pension costs | -72 | -0.17 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -187 | -0.44 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| EANS | 3 748 | 8.75 |
| METSP(s) | € '000 | €/SU |
| Total charging zone | 3 748 | 8.75 |
| Actual cost for users*** | 28 814 | 67.24 |
| Regulatory result (% AUCU) | 13.0% | 13.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (66.39 €) is +80.2% higher than the nominal DUC (36.85 €). The difference between these two figures (+29.54 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+7.23 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.44 €/SU);
- the addition of the traffic risk sharing adjustments (+17.21 €/SU);
- the addition of the traffic adjustment (+6.38 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-0.85 €/SU).

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 13.0%.

ESTONIA: En route main ANSP (EANS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

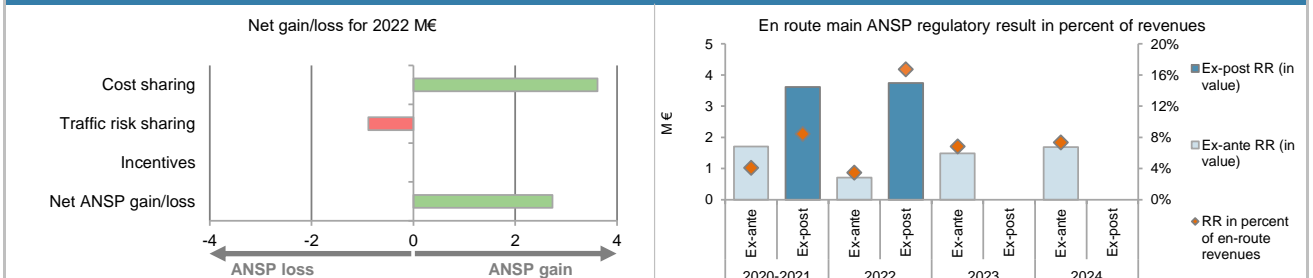
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -29 | 651 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 398 | 3 100 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -136 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 368 | 3 616 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.6% | -41.0% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 41 272 | 20 124 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 899 | -885 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 1 267 | 2 730 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| EANS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 28 085 | 27 018 | 55 103 | 26 775 | 28 649 | 30 168 |
| Proportion of financing through equity (in %) | 61% | 23% | 42% | 36% | 71% | 77% |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| RoE (in value) | 1 257 | 452 | 1 708 | 708 | 1 491 | 1 687 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 257 | 452 | 1 708 | 708 | 1 491 | 1 687 |
| Revenue for the en route charging zone | 21 284 | 20 433 | 41 716 | 20 360 | 21 792 | 22 944 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.9% | 2.2% | 4.1% | 3.5% | 6.8% | 7.4% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| EANS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 28 085 | 28 876 | 56 961 | 22 928 | | |
| Proportion of financing through equity (in %) | 61% | 52% | 57% | 61% | | |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | | |
| RoE (in value) | 1 257 | 1 096 | 2 353 | 1 018 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 1 267 | 1 267 | 2 730 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 257 | 2 363 | 3 620 | 3 748 | | |
| Revenue for the en route charging zone | 21 284 | 21 729 | 43 013 | 22 439 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.9% | 10.9% | 8.4% | 16.7% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 15.7% | 11.2% | 26.9% | | |

13. Focus on the main ANSP regulatory result on en route activity



EANS net gain on activity in the Estonia en route charging zone in the year 2022

EANS reported a net gain of +2.7 M€, as a combination of a gain of +3.6 M€ arising from the cost sharing mechanism, with a loss of -0.9 M€ arising from the traffic risk sharing mechanism.

EANS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+2.7 M€) and the actual RoE (+1.0 M€) amounts to +3.7 M€ (16.7% of the en route revenues). The resulting ex-post rate of return on equity is 26.9%, which is higher than the 7.3% planned in the PP.

ESTONIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | | |
|--|-----------------|---------------|---------------|---|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Estonia TCZ represents 0.2% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 2 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 2 Airports with more than 80,000 IFR mvmts: 0 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | | |
| Estonia: Data from RP3 Performance Plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | | 2 572 617 | 2 526 192 | 5 098 809 | 2 393 127 | 2 528 987 | 2 646 202 |
| Inflation % | | 0.0% | 1.8% | | 2.5% | 2.1% | 1.9% |
| Inflation index (100 in 2017) | | 105.8 | 107.7 | | 110.4 | 112.7 | 114.8 |
| Real terminal costs (€2017) | | 2 496 661 | 2 422 118 | 4 918 779 | 2 254 405 | 2 355 293 | 2 438 319 |
| Total terminal service units | | 8 201 | 9 972 | 18 173 | 17 372 | 18 786 | 19 870 |
| Real terminal DUC per service unit (€2017) | | 304.43 | 242.90 | 270.66 | 129.77 | 125.37 | 122.71 |
| Estonia: Actual data from Reporting Tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | | 2 572 617 | 2 446 840 | 5 019 457 | 2 809 249 | | |
| Inflation % | | 0.0% | 4.5% | | 19.4% | | |
| Inflation index (100 in 2017) | | 105.8 | 110.5 | | 132.0 | | |
| Real terminal costs (€2017) | | 2 496 661 | 2 323 789 | 4 820 450 | 2 393 352 | | |
| Total terminal service units | | 8 201 | 10 986 | 19 188 | 17 403 | | |
| Real terminal AUC per service unit (€2017) | | 304.43 | 211.52 | 251.23 | 137.53 | | |
| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -79 352 | -79 352 | 416 122 | | |
| | in % | - | -3.1% | -1.6% | +17.4% | | |
| Inflation % | in p.p. | 0.0 p.p. | 2.7 p.p. | | 16.9 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 2.9 p.p. | | 21.6 p.p. | | |
| Real terminal costs (€2017) | in value | 0 | -98 329 | -98 329 | 138 948 | | |
| | in % | - | -4.1% | -2.0% | +6.2% | | |
| Total terminal service units | in value | 0 | 1 015 | 1 015 | 30 | | |
| | in % | - | +10.2% | +5.6% | +0.2% | | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -31.38 | -19.44 | 7.76 | | |
| | in % | - | -12.9% | -7.2% | +6.0% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was +6.0% (or +7.76 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned terminal costs in real terms (+6.2%, or +0.1 M€2017) and slightly higher than planned TNSUs (+0.2%). It should be noted that actual inflation index in 2022 was +21.6 p.p. higher than planned.</p> | | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+0.2%</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+0.2%) falls inside the ±2% dead band. Hence gain of additional terminal revenues is kept by the ANSP (see items 10 to 13).</p> | | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP +5.2%</p> <p>Other ANSP(s)</p> <p>METSP(s)</p> <p>NSA +11.6%</p> <p>Total CZ +6.2%</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are +6.2% (+0.1 M€2017) higher than planned. This is the result of higher costs for the main ANSP, EANS (+5.2%, or +0.1 M€2017) and the NSA (+11.6%, or +0.04 M€2017).</p> | | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -8.5%</p> <p>Other operating costs +3.4%</p> <p>Depreciation +1.3%</p> <p>Cost of capital +128.8%</p> <p>Exceptional costs</p> <p>VFR exempted flights</p> <p>Total Main ANSP +5.2%</p> | | | |
| <p>Terminal costs for the main ANSP (EANS) at charging zone level</p> <p>Higher than planned terminal costs in real terms for EANS in 2022 (+5.2%, or +0.1 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-8.5%), - Higher other operating costs (+3.4%). <p>These changes should be seen in the light of the high actual inflation in 2022 (19.4%). Note that in nominal terms, staff costs and other operating costs are much higher than planned (respectively +9% and +24%). Based on additional information to terminal reporting tables provided by Estonia, this is due to the fact that "a higher proportion of actual costs were allocated to terminal costs" due to a significant loss of en route traffic.</p> <ul style="list-style-type: none"> - Slightly higher depreciation (+1.3%), - Significantly higher cost of capital (+128.8%) due to an additional equity injection that increased the weighted average cost of capital rate (%) and the share of financing through equity. | | | | | | | |

ESTONIA: Terminal charging zone

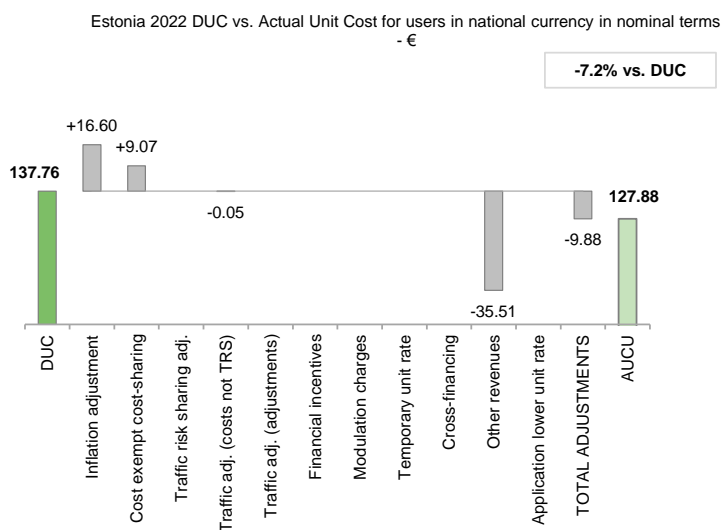
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 137.76 |
| DUC to be charged retroactively | 0.00 |
| DUC | 137.76 |
| Inflation adjustment | 16.60 |
| Cost exempt from cost-sharing | 9.07 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | -0.05 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -35.51 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -9.88 |
| AUCU | 127.88 |
| AUCU vs. DUC | -7.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

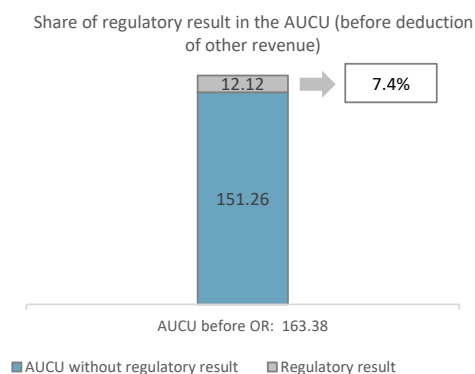
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|------------|-------------|
| by item | New and existing investments | 118 | 6.79 |
| | Competent authorities and qualified entities costs | 39 | 2.21 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 1 | 0.07 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | 158 | 9.07 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|--------------|---------------|
| EANS | 211 | 12.12 |
| METSP(s) | | |
| | | |
| Total charging zone | 211 | 12.12 |
| Actual cost for users*** | 2 843 | 163.38 |
| Regulatory result (% AUCU) | 7.4% | 7.4% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (127.88 €) is -7.2% lower than the nominal DUC (137.76 €). The difference between these two figures (-9.88 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+16.60 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+9.07 €/SU);
- the deduction of the traffic adjustment (-0.05 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-35.51 €/SU).

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 7.4%.

ESTONIA: Terminal main ANSP (EANS)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

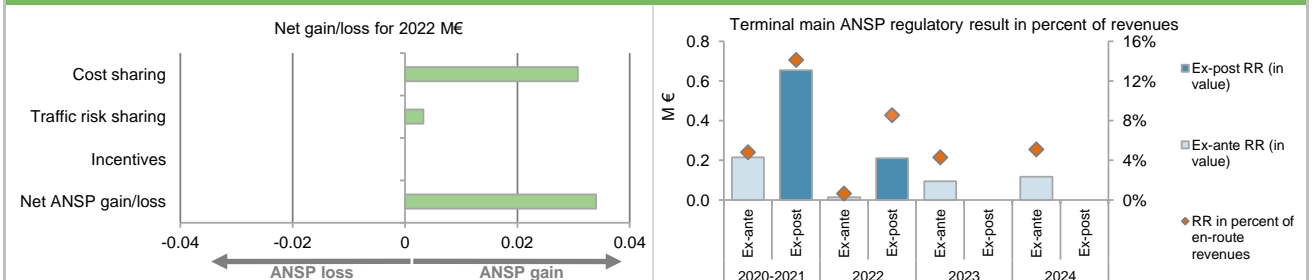
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|------------|-----------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 65 | -378 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 39 | 289 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | 119 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 103 | 31 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 5.6% | 0.2% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 4 128 | 1 883 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 127 | 3 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 230 | 34 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| EANS planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| Total asset base | 7 835 | 7 538 | 15 373 | 6 499 | 7 992 | 8 416 |
| Proportion of financing through equity (in %) | 35% | 2% | 19% | 3% | 16% | 19% |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| RoE (in value) | 202 | 13 | 215 | 13 | 94 | 117 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 202 | 13 | 215 | 13 | 94 | 117 |
| Revenue for the terminal charging zone | 2 263 | 2 200 | 4 463 | 2 061 | 2 188 | 2 297 |
| Ex-ante regulatory result (+/-) in percent of revenues | 8.9% | 0.6% | 4.8% | 0.6% | 4.3% | 5.1% |
| Ex-ante RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% | 7.3% |
| EANS actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 7 835 | 8 055 | 15 890 | 6 396 | | |
| Proportion of financing through equity (in %) | 35% | 38% | 37% | 38% | | |
| RoE pre-tax rate (in %) | 7.3% | 7.3% | 7.3% | 7.3% | | |
| RoE (in value) | 202 | 222 | 424 | 177 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 230 | 230 | 34 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 202 | 452 | 654 | 211 | | |
| Revenue for the terminal charging zone | 2 263 | 2 366 | 4 629 | 2 472 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 8.9% | 19.1% | 14.1% | 8.5% | | |
| Ex-post RoE pre-tax rate (in %) | 7.3% | 14.9% | 11.3% | 8.7% | | |

13. Focus on main ANSP regulatory result on terminal activity



EANS net gain on activity in the Estonia terminal charging zone in the year 2022

EANS reported a net gain of +0.034 M€, as a combination of a gain of +0.031 M€ arising from the cost sharing mechanism, with a gain of +0.003 M€ arising from the traffic risk sharing mechanism.

EANS overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+0.034 M€) and the actual RoE (+0.177 M€) amounts to +0.211 M€ (8.5% of the terminal revenues). The resulting ex-post rate of return on equity is 8.7%, which is higher than the 7.3% planned in the PP.

ESTONIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|--|----------|------------|---------------|---|--------------|---------------|---------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Estonia | | | | | | | |
| Terminal charging zone 1: Estonia | | | | | | | |
| Estonia: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 26 132 098 | 25 829 816 | 51 961 914 | 25 297 780 | 26 447 397 | 27 337 166 |
| Real terminal costs (€2017) | | 2 496 661 | 2 422 118 | 4 918 779 | 2 254 405 | 2 355 293 | 2 438 319 |
| Real gate-to-gate costs (€2017) | | 28 628 758 | 28 251 934 | 56 880 693 | 27 552 184 | 28 802 690 | 29 775 486 |
| En route share (%) | | 91.3% | 91.4% | 91.4% | 91.8% | 91.8% | 91.8% |
| Estonia: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 26 132 099 | 25 148 805 | 51 280 904 | 22 378 144 | | |
| Real terminal costs (€2017) | | 2 496 661 | 2 323 789 | 4 820 450 | 2 393 352 | | |
| Real gate-to-gate costs (€2017) | | 28 628 760 | 27 472 594 | 56 101 354 | 24 771 496 | | |
| En route share (%) | | 91.3% | 91.5% | 91.4% | 90.3% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| | in value | 1 | -779 340 | -779 339 | -2 780 688 | | |
| | in % | 0.0% | -2.8% | -1.4% | -10.1% | | |
| En route share | | | | | | | |
| | in p.p. | 0.0 p.p. | 0.1 p.p. | 0.1 p.p. | -1.5 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -10.1% (-2.8 M€2017) lower than planned, as en route costs are lower than planned by -2.9 M€2017 and terminal costs are higher than planned by +0.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (90.3%) is lower than planned in the PP for 2022 (91.8%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| EANS | 721 | 22 421 | 3.2% | 3 959 | 24 911 | 15.9% | |
| METSP(s) | | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues |
| | | | | | | | |
| Total | | 721 | 22 421 | 3.2% | 3 959 | 24 911 | 15.9% |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Estonia covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +4.0 M€ (+3.7 M€ for en route and +0.2 M€ for terminal - see boxes 10 to 13 for the detailed analysis at charging zones level), corresponding to 15.9% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (3.2% of gate-to-gate revenues).</p> | | | | <p>Estonia gate-to-gate 2022 regulatory result in % of revenues</p> | | | |

Annual Monitoring Report 2022

Local level view

Finland

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FINLAND

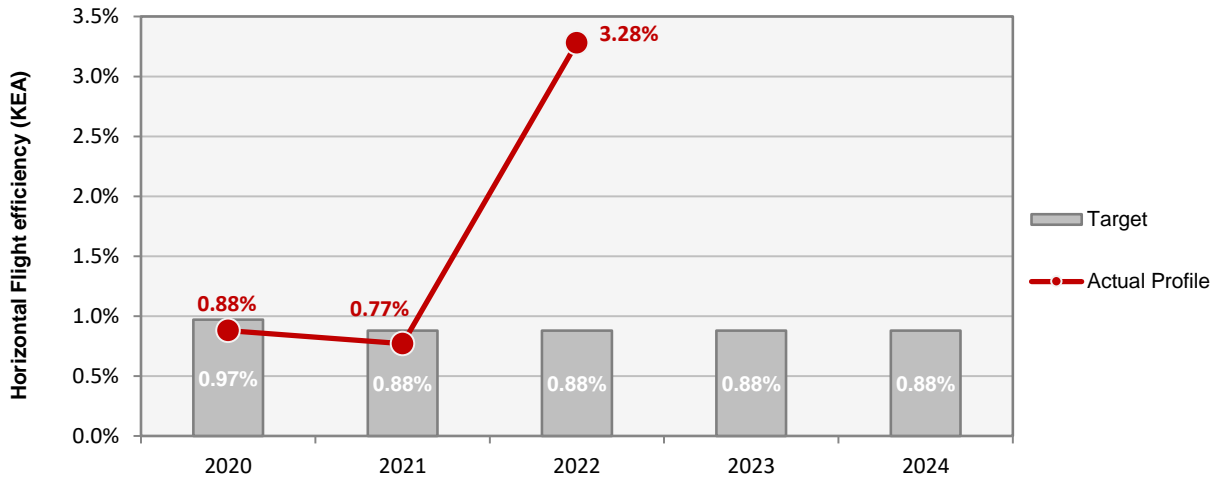
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| ANS | 86 | C | C | C | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>Four out of five EoSM components of the ANSP meet the RP3 target level. No improvements were observed over 2022, but only "Safety Risk Management" component is below RP3 target level with three questions to improve during RP3 to achieve RP3 target.</p> <p>IMPORTANT: EASA/European Commission did not receive the verified questionnaire from the NSA on time. This is an important step to receive confirmation that the self-evaluated questionnaire by the ANSP has been actually verified. It should be sent in due time to allow proper and timely drafting of the Monitoring Report.</p> | | | | | | |

FINLAND

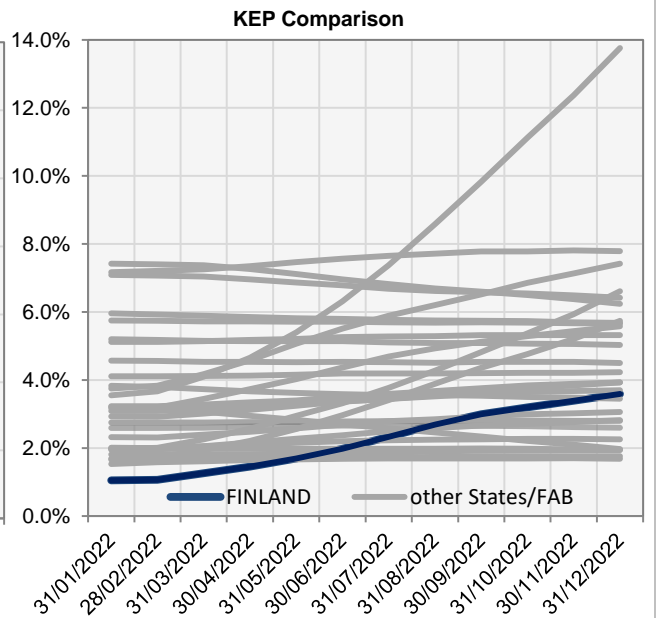
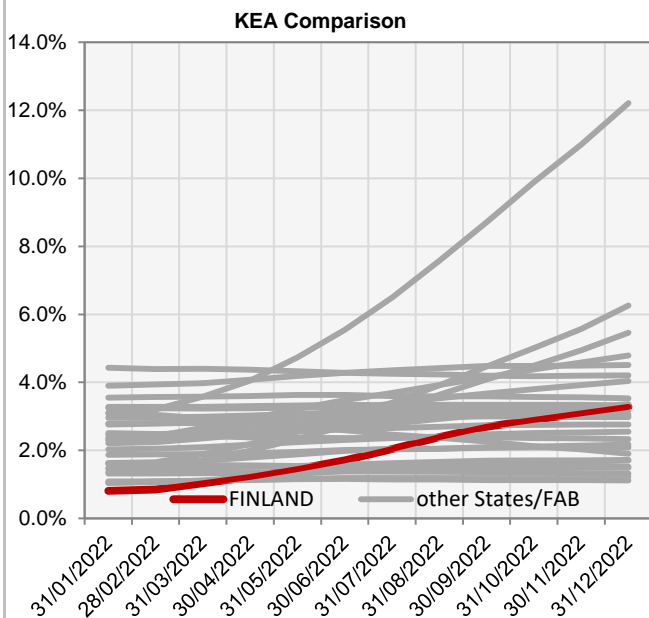
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 0.97% | 0.88% | 0.88% | 0.88% | 0.88% |
| Actual performance | 0.88% | 0.77% | 3.28% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 0.81% | 0.85% | 1.03% | 1.22% | 1.45% | 1.71% | 2.04% | 2.39% | 2.69% | 2.90% | 3.09% | 3.28% |
| KEP | 1.05% | 1.07% | 1.26% | 1.45% | 1.69% | 1.98% | 2.33% | 2.69% | 2.99% | 3.20% | 3.39% | 3.59% |
| KES | 1.00% | 1.03% | 1.23% | 1.43% | 1.68% | 1.99% | 2.36% | 2.74% | 3.03% | 3.27% | 3.46% | 3.67% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

FINLAND

ENVIRONMENT - Airports

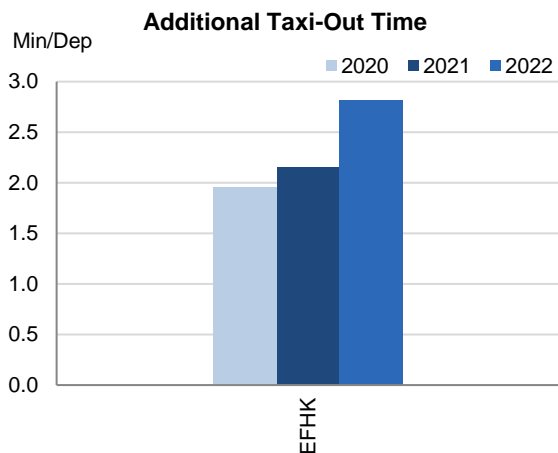
1. Overview

Finland identifies only Helsinki airport as subject to RP3 monitoring.

The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed. Traffic at this airport in 2022 is still 32% lower with respect to 2019, but 84% above 2021 levels. Both additional time indicators have increased in 2022.

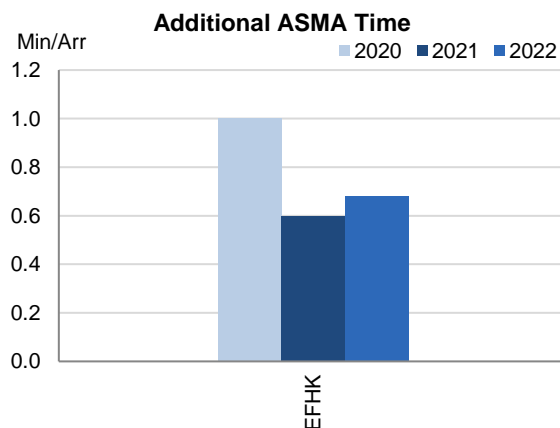
The share of CDO flights is in the higher range of all observed values in 2022.

2. Additional Taxi-Out Time



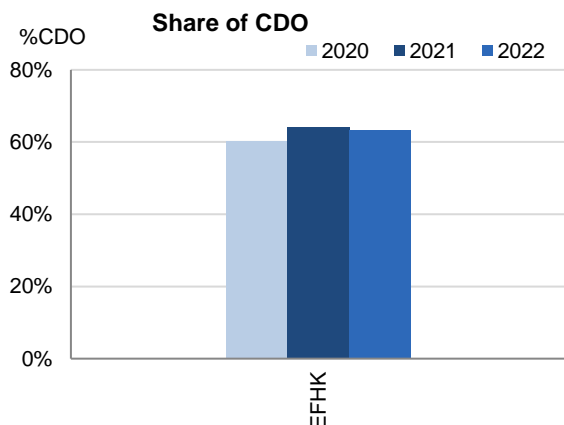
Additional taxi-out times at Helsinki (EFHK; 2019: 3.04 min/dep.; 2020: 1.96 min/dep.; 2021: 2.15 min/dep.; 2022: 2.81 min/dep.) are very influenced by the winter operations (winter maintenance and de-icing procedures), reaching almost 9 min/dep in January 2022. Additional taxi out times between May and October average 0.65 min/dep. According to Finland's monitoring report: *No new initiatives or planned initiatives for additional taxi-out time PI. Additional taxi-out time is following the same pattern as in previous years. Additional taxi-out time is rather low from April to October and higher in the winter months due to winter maintenance and de-icing procedures.*

3. Additional ASMA Time



The additional times in the terminal airspace remained low in 2022 (EFHK; 2019: 1.19 min/arr.; 2020: 1 min/arr.; 2021: 0.6 min/arr.; 2022: 0.68 min/arr). According to Finland's monitoring report: *No implemented or planned initiatives for additional time in terminal airspace PI.*

4. Share of arrivals applying CDO



The share of CDO flights at Helsinki (EFHK) has decreased slightly to 63.3% which is well above the overall RP3 value in 2022 (29.0%) and in the higher range of all observed values in 2022.

While the values were just above 50% in January and February, the values stayed above 60% for the rest of the year.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|----------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Helsinki-Vantaa-EFHK | 1.96 | 2.15 | 2.81 | | | 1 | 0.6 | 0.68 | | | 60% | 64% | 63% | | |

FINLAND

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Finland | 41% | 44% | 85% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Helsinki | 41% | 44% | 85% | | |

Initiatives implemented or planned to improve PI#6

LARA/PRISMIL implemented, automated reporting, that differs from manual calculation that was used earlier in 2020, 2021 and RP2.

The figures for 2020 and 2021 should be as follows:

2020 number of hours allocated & notified: 38340; used: 34296 (ratio 89,45%)

2021 number of hours allocated & notified: 37346; used: 33978 (ratio 90,98%)

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|
| Finland | 0% | 0% | 99% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-----------------|------|------|------|------|------|
| Helsinki | 0% | 0% | 99% | | |

Initiatives implemented or planned to improve PI#7

LARA/PRISMIL implemented, automated reporting, that differs from manual calculation that was used earlier in 2020, 2021 and RP2.

Figures for 2020 and 2021 should be as follows:

2020 number of aircraft filing via reserved or segregated airspace and CDRs: 1676883; could have planned: 1779163 (ratio 94,25%)

2021 number of aircraft filing via reserved or segregated airspace and CDRs: 1908679; could have planned: 1982855 (ratio 96,26%)

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|----------------|------|------|------|------|------|
| Finland | 0% | 0% | 89% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-----------------|------|------|------|------|------|
| Helsinki | 0% | 0% | 89% | | |

Initiatives implemented or planned to improve PI#8

LARA/PRISMIL implemented, automated reporting, that differs from manual calculation that was used earlier in 2020, 2021 and RP2.

Figures for 2020 and 2021 should be as follows:

2020 number of aircraft flying via reserved or segregated airspace and CDRs: 1512596; could have planned: 1779163 (ratio 85,02%)

2021 number of aircraft flying via reserved or segregated airspace and CDRs: 1721982; could have planned: 1982855 (ratio 86,84%)

FINLAND

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.09 | 0.03 | 0.05 | 0.05 | 0.05 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>In the beginning of 2022 traffic was just recovering from Covid-19 until the end of February when the traffic almost ceased in Finland. The war in Ukraine; the closure of Russian airspace; and banning Russian airlines from flying in Finnish airspace, had a huge impact in traffic.</p> <p>As a result of the sanctions, all European airlines stopped flying to Asia completely over Finland. In general, overflying traffic was around 60 % of the level of 2019. Finnair, the biggest customer to Fintraffic ANS, was forced to change its strategy after the end of Russian overflights to Asia. Traffic to Kaliningrad increased over the international waters between Estonia and Finland. This traffic increase can be noticed in the number of operations but its impact in terms of service units is less.</p> <p>Finland reached the capacity targets in both KPIs, en-route and terminal. En-route delays have been zero in many years, and the capacity provided for this is due to user demand for as few delays as possible.</p> <p>The en-route overflying traffic between Europe and Asia has dropped dramatically due to the war and the related airspace closure, and has resulted to continuation of some of the temporary staff lay-offs.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Review of the actual values from the NM dashboard. | | | | | | | |
| Capacity Planning | | | | | | | |
| En-route ATFM delay will remain low as the capacity is delivered due to user demand. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Helsinki ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 40 | 52 | 54 | 55 | |
| Actual | 51 | 43 | 31 | 40 | | | |
| <p>It has been difficult to estimate the number of ATCOs, as the COVID and the related temporary lay-offs still affect the planning. The 11 additional ATCOs in OPS are returning from temporary lay-offs, and as the traffic has not recovered as it has in central Europe, it is still difficult to estimate how these numbers will evolve during the rest of RP3.</p> <p>Also the airspace closure due to the war and the related drop in overflying traffic affects the need of ATCOs.</p> | | | | | | | |
| Additional information regarding Russia's war in Ukraine. | | | | | | | |
| <p>There are changes in traffic flows/patterns: airspace closures have shifted the traffic flows from Russia to Kaliningrad, and these flights have to use the narrow international airspace corridor between Finland and Estonia, and can not use the direct routing that has been used before the war. There is an average of 350 flights per week.</p> <p>Also the flights from Europe to Asia are not overflying Finnish airspace anymore because of the airspace closure. Another change is in the flights between Finland (Helsinki) and Japan, where our main operator Finnair flies daily. These flights can't fly the most direct route anymore because of the airspace closure, and have to fly via northern route above the North Pole.</p> <p>These changes do not affect the en route capacity performance, but still need to be taken into account when assessing the overall performance of the ANSP.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| Finland experienced an increase in traffic from 123k flights in 2021, to 205k flights in 2022; again, with zero ATFM delay. However, traffic levels were still substantially below the 285k flights in 2019. | | | | | | | |

1. Overview

Finland identifies only Helsinki airport as subject to RP3 monitoring.

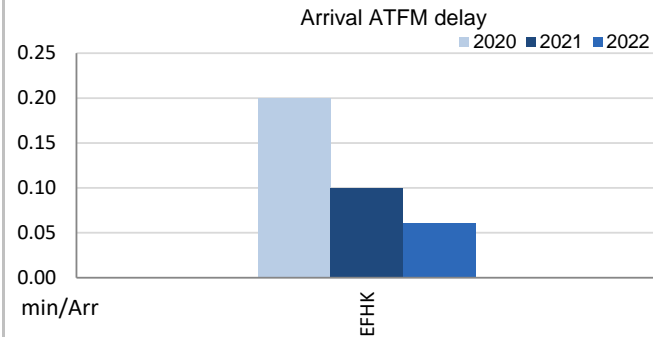
The Airport Operator Data Flow is fully established and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at this airport in 2022 is still 32% lower with respect to 2019, but 84% above 2021 levels.

Average arrival ATFM delays in 2022 were 0.06 min/arr, compared to 0.1 min/arr in 2021.

ATFM slot adherence has slightly improved (2022: 95.6%; 2021: 93.1%).

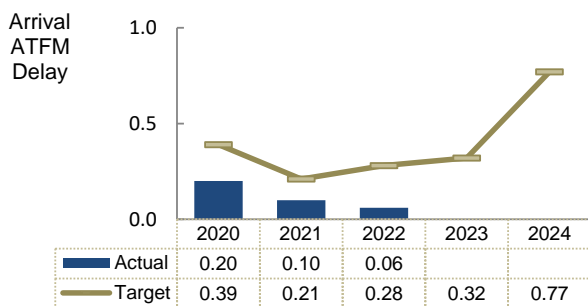
2. Arrival ATFM Delay



Arrival ATFM delays at Helsinki in 2022 averaged 0,06 min/arr. (-0,22 below the target), and there were all attributed to weather reasons, mostly in the winter months.

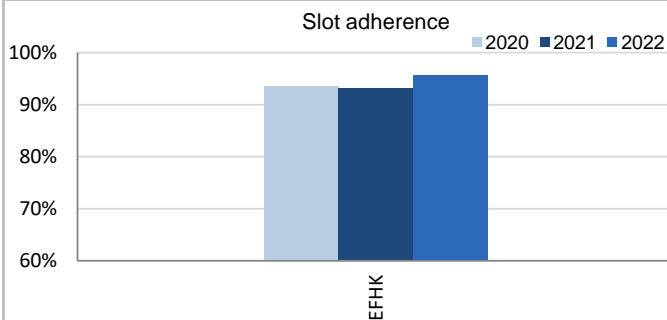
Finland reports that there was no impact of the Russian's war on terminal capacity.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Helsinki's ATFM slot compliance was 95.6 %. With regard to the 4.4% of flights that did not adhere, 0.8% was early and 3.6% was late.

5. ATC Pre-departure Delay

ATC pre-departure delay at Helsinki (EFHK: 2022: 0.21 min/dep) is still below the pre-pandemic value (0.39 min/dep)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Helsinki increased slightly in 2022 (EFHK: 2020: 7.76 min/dep.; 2021: 11.07 min/dep.; 2022: 11.46 min/dep.). The highest delays per flight were observed in January and December.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|----------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Helsinki-Vantaa-EFHK | 0.2 | 0.1 | 0.06 | | | 93.6% | 93.1% | 95.6% | | | n/a | n/a | 0.21 | | | 7.76 | 11.07 | 11.46 | | |

FINLAND: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Finland ECZ represents 0.6% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/765 of 13 April 2022
The final version of the plan was adopted and published by Finland in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Finland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 38 213 956 | 40 643 337 | 78 857 293 | 45 493 220 | 47 725 316 | 50 403 722 |
| Inflation % | 0.4% | 1.4% | | 1.5% | 1.6% | 1.8% |
| Inflation index (100 in 2017) | 102.7 | 104.2 | | 105.7 | 107.4 | 109.3 |
| Real en route costs (€2017) | 37 408 395 | 39 370 777 | 76 779 172 | 43 474 245 | 45 038 050 | 46 941 389 |
| Total en route service units | 462 058 | 481 000 | 943 058 | 894 000 | 1 087 000 | 1 167 000 |
| Real en route DUC per service unit (€2017) | 80.96 | 81.85 | 81.42 | 48.63 | 41.43 | 40.22 |

| Finland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 38 213 956 | 36 959 359 | 75 173 315 | 40 298 357 | | |
| Inflation % | 0.4% | 2.1% | | 7.2% | | |
| Inflation index (100 in 2017) | 102.7 | 104.9 | | 112.4 | | |
| Real en route costs (€2017) | 37 408 395 | 35 618 896 | 73 027 291 | 36 620 032 | | |
| Total en route service units | 462 058 | 494 854 | 956 912 | 597 862 | | |
| Real en route AUC per service unit (€2017) | 80.96 | 71.98 | 76.32 | 61.25 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-----------------|-------------|---------------|--------------|---------------|------|
| En route costs (nominal €) | in value | 0 | -3 683 979 | -3 683 979 | -5 194 863 | |
| | in % | - | -9.1% | -4.7% | -11.4% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.7 p.p. | 5.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.7 p.p. | 6.7 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -3 751 882 | -6 854 214 | | |
| | in % | - | -9.5% | -15.8% | | |
| Total en route service units | in value | 0 | 13 854 | -296 138 | | |
| | in % | - | +2.9% | -33.1% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -9.87 | -5.10 | 12.62 | |
| | in % | - | -12.1% | -6.3% | +26.0% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +26.0% (or +12.62 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-33.1%) and significantly lower than planned en route costs in real terms (-15.8%, or -6.9 M€2017). It should be noted that actual inflation index in 2022 was +6.7 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-33.1%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Fintraffic ANS) bearing a loss of -1.5 M€2017.

En route costs by entity

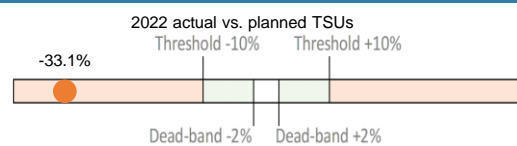
Actual real en route costs are -15.8% (-6.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Fintraffic ANS (-17.7%, or -6.6 M€2017), the METSP provider (-9.1%, or -0.2 M€2017) and the NSA/EUROCONTROL (-1.5%, or -0.1 M€2017).

En route costs for the main ANSP (Fintraffic ANS) at charging zone level

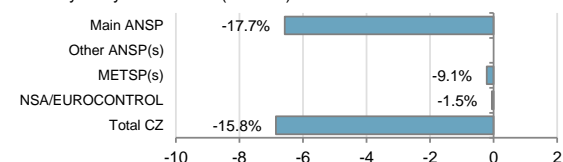
Significantly lower than planned en route costs in real terms for Fintraffic ANS in 2022 (-17.7%, or -6.6 M€2017) result from:

- Significantly lower staff costs (-16.9%) resulting from cost-savings (temporary lay-offs, lower head count, abandoning bonuses, lower pension costs, postponing recruiting, etc.) introduced to compensate for significantly lower than planned traffic due to the war in Ukraine;
- Significantly lower other operating costs (-15.3%) due to cost-savings in many cost categories (Group service fees, training, travel, telecommunication costs, etc.);
- Significantly lower depreciation (-23.9%) and cost of capital (-41.1%) resulting from postponed investments; and,
- Significantly lower deduction for VFR exempted flights (-5.9%).

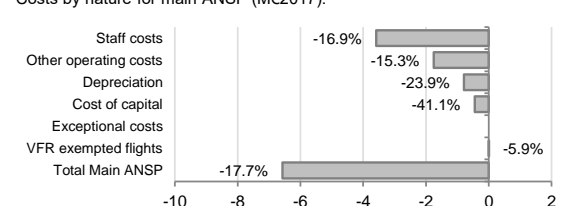
Note: It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



FINLAND: En route charging zone

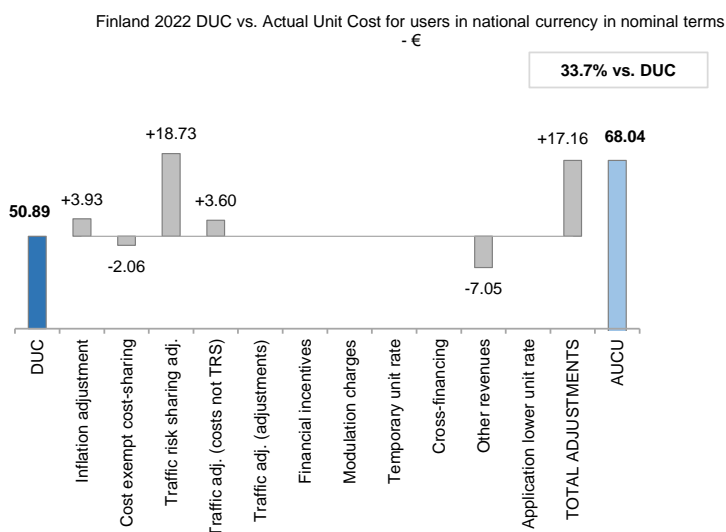
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 50.89 |
| DUC to be charged retroactively | 0.00 |
| DUC | 50.89 |
| Inflation adjustment | 3.93 |
| Cost exempt from cost-sharing | -2.06 |
| Traffic risk sharing adjustment | 18.73 |
| Traffic adj. (costs not TRS) | 3.60 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -7.05 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 17.16 |
| AUCU | 68.04 |
| AUCU vs. DUC | +33.7% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

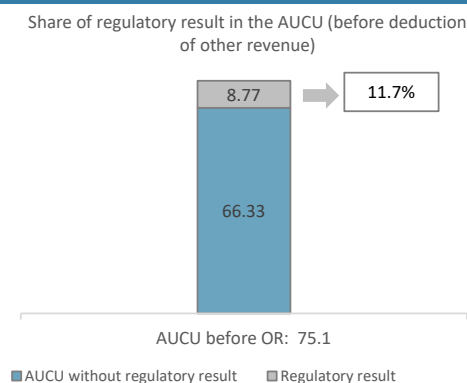
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|---------------|--------------|
| New and existing investments | -1 160 | -1.94 |
| Competent authorities and qualified entities costs | 0 | 0.00 |
| Eurocontrol costs | -58 | -0.10 |
| Pension costs | -11 | -0.02 |
| Interest on loans | 0 | 0.00 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | -1 230 | -2.06 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| Fintraffic ANS | 4 984 | 8.34 |
| METSP(s) | € '000 | €/SU |
| Finland MET | 257 | 0.43 |
| Total charging zone | 5 241 | 8.77 |
| Actual cost for users*** | 44 898 | 75.10 |
| Regulatory result (% AUCU) | 11.7% | 11.7% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (68.04 €) is +33.7% higher than the nominal DUC (50.89 €). The difference between these two figures (+17.16 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.93 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-2.06 €/SU);
- the addition of the traffic risk sharing adjustments (+18.73 €/SU);
- the addition of the traffic adjustment (+3.60 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-7.05 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 11.7%.

FINLAND: En route main ANSP (Fintraffic ANS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

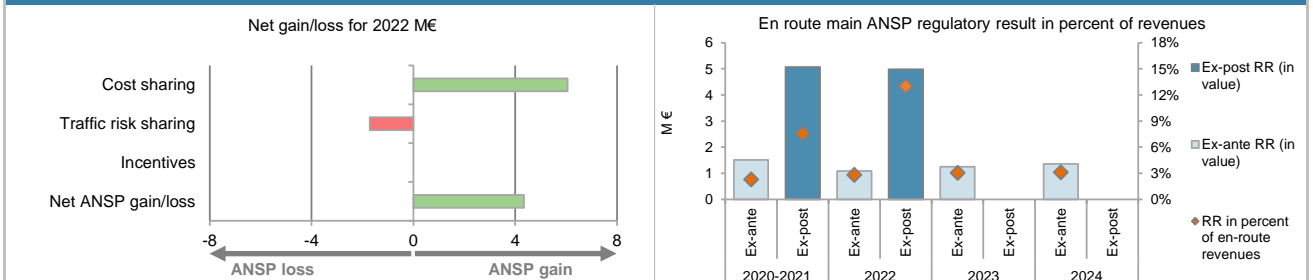
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 3 132 | 5 051 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 197 | 2 188 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -525 | -1 181 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 804 | 6 058 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.5% | -33.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 66 586 | 38 991 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 978 | -1 716 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 3 782 | 4 343 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Fintraffic ANS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-------------|--------------|--------------|--------------|--------------|--------------|
| Total asset base | 16 618 | 18 562 | 35 180 | 25 311 | 29 112 | 31 499 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| RoE (in value) | 715 | 798 | 1 513 | 1 088 | 1 252 | 1 354 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 715 | 798 | 1 513 | 1 088 | 1 252 | 1 354 |
| Revenue for the en route charging zone | 32 289 | 34 298 | 66 586 | 38 991 | 41 200 | 43 913 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.2% | 2.3% | 2.3% | 2.8% | 3.0% | 3.1% |
| Ex-ante RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| Fintraffic ANS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 16 618 | 13 314 | 29 932 | 14 904 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | | |
| RoE (in value) | 715 | 573 | 1 288 | 641 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 3 782 | 3 782 | 4 343 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 715 | 4 355 | 5 070 | 4 984 | | |
| Revenue for the en route charging zone | 32 289 | 34 947 | 67 236 | 38 283 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.2% | 12.5% | 7.5% | 13.0% | | |
| Ex-post RoE pre-tax rate (in %) | 4.3% | 32.7% | 16.9% | 33.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



Fintraffic ANS net gain on activity in the Finland en route charging zone in the year 2022

Fintraffic ANS reported a net gain of +4.3 M€, as a combination of a gain of +6.1 M€ arising from the cost sharing mechanism, with a loss of -1.7 M€ arising from the traffic risk sharing mechanism.

Fintraffic ANS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+4.3 M€) and the actual RoE (+0.6 M€) amounts to +5.0 M€ (13.0% of the en route revenues). The resulting ex-post rate of return on equity is 33.4%, which is higher than the 4.3% planned in the PP.

FINLAND: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Finland MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 2 201 | 2 358 | 4 559 | 2 569 | 2 572 | 2 528 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Finland MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 215 | 215 | 257 | | |
| Revenue for the en route charging zone | 2 201 | 2 386 | 4 587 | 2 740 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 9.0% | 4.7% | 9.4% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Finland (Finland MET) corresponds to 9.4% of the en route revenues. It should be noted that Finland MET does not charge cost of capital. | | | | | | |

FINLAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Finland TCZ represents 1.2% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Finland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 15 238 356 | 15 496 155 | 30 734 511 | 17 905 260 | 18 937 693 | 20 132 958 |
| Inflation % | 0.4% | 1.4% | | 1.5% | 1.6% | 1.8% |
| Inflation index (100 in 2017) | 102.7 | 104.2 | | 105.7 | 107.4 | 109.3 |
| Real terminal costs (€2017) | 14 857 949 | 14 908 564 | 29 766 514 | 16 960 141 | 17 656 105 | 18 451 042 |
| Total terminal service units | 44 088 | 37 000 | 81 088 | 108 000 | 121 000 | 129 000 |
| Real terminal DUC per service unit (€2017) | 337.01 | 402.93 | 367.09 | 157.04 | 145.92 | 143.03 |
| Finland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 15 238 356 | 14 468 174 | 29 706 530 | 16 610 562 | | |
| Inflation % | 0.4% | 2.1% | | 7.2% | | |
| Inflation index (100 in 2017) | 102.7 | 104.9 | | 112.4 | | |
| Real terminal costs (€2017) | 14 857 949 | 13 835 328 | 28 693 277 | 14 829 021 | | |
| Total terminal service units | 44 088 | 40 831 | 84 919 | 81 305 | | |
| Real terminal AUC per service unit (€2017) | 337.01 | 338.85 | 337.89 | 182.39 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value 0 | -1 027 980 | -1 027 980 | -1 294 698 | | |
| | in % - | -6.6% | -3.3% | -7.2% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.7 p.p. | | 5.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.7 p.p. | | 6.7 p.p. | | |
| Real terminal costs (€2017) | in value 0 | -1 073 237 | -1 073 237 | -2 131 120 | | |
| | in % - | -7.2% | -3.6% | -12.6% | | |
| Total terminal service units | in value 0 | 3 831 | 3 831 | -26 695 | | |
| | in % - | +10.4% | +4.7% | -24.7% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -64.09 | -29.20 | 25.35 | | |
| | in % - | -15.9% | -8.0% | +16.1% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was +16.1% (or +25.35 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-24.7%) and significantly lower than planned terminal costs in real terms (-12.6%, or -2.1 M€2017). It should be noted that actual inflation index in 2022 was +6.7 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (-24.7%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Fintraffic ANS) bearing a loss of -0.6 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -12.6% (-2.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Fintraffic ANS (-12.9%, or -2.0 M€2017) and the MET service provider (-9.1%, or -0.1 M€2017), while NSA costs were in line with the plan.</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs for the main ANSP (Fintraffic ANS) at charging zone level</p> <p>Significantly lower than planned terminal costs in real terms for Fintraffic ANS in 2022 (-12.9%, or -2.0 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-14.0%) resulting from cost-savings (temporary lay-offs, lower head count, abandoning bonuses, lower pension costs, postponing recruiting, etc.) introduced to compensate for significantly lower than planned traffic due to the war in Ukraine; - Significantly lower other operating costs (-12.0%) due to cost-savings in many cost categories (Group service fees, training, travel, telecommunication costs, etc.); and, - Slightly lower depreciation (-2.5%) and cost of capital (-0.2%). | | | | | | |

FINLAND: Terminal charging zone

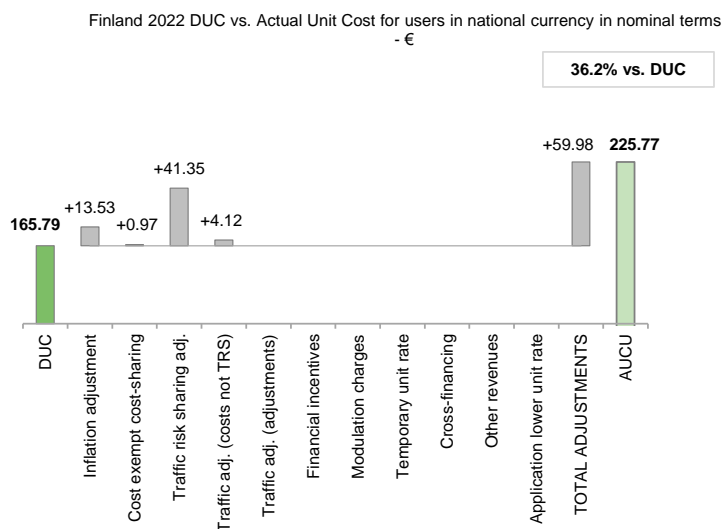
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 165.79 |
| DUC to be charged retroactively | 0.00 |
| DUC | 165.79 |
| Inflation adjustment | 13.53 |
| Cost exempt from cost-sharing | 0.97 |
| Traffic risk sharing adjustment | 41.35 |
| Traffic adj. (costs not TRS) | 4.12 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 59.98 |
| AUCU | 225.77 |
| AUCU vs. DUC | 36.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

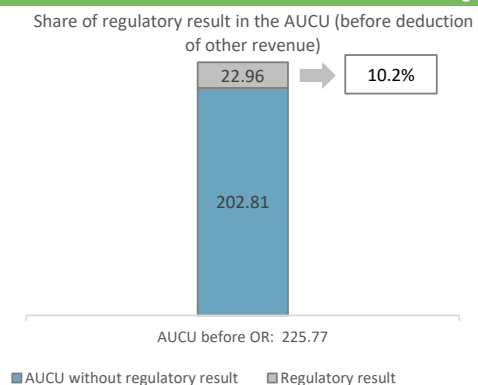
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-----------|-------------|
| by item | New and existing investments | 83 | 1.02 |
| | Competent authorities and qualified entities costs | 0 | 0.00 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | -4 | -0.05 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | 79 | 0.97 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| Fintraffic ANS | 1 737 | 21.36 |
| METSP(s) | | |
| Finland-MET | 130 | 1.59 |
| Total charging zone | 1 867 | 22.96 |
| Actual cost for users*** | 18 356 | 225.77 |
| Regulatory result (% AUCU) | 10.2% | 10.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (225.77 €) is +36.2% higher than the nominal DUC (165.79 €). The difference between these two figures (+59.98 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+13.53 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+0.97 €/SU);
- the addition of the traffic risk sharing adjustments (+41.35 €/SU); and,
- the addition of the traffic adjustment (+4.12 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 10.2%.

FINLAND: Terminal main ANSP (Fintraffic ANS)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

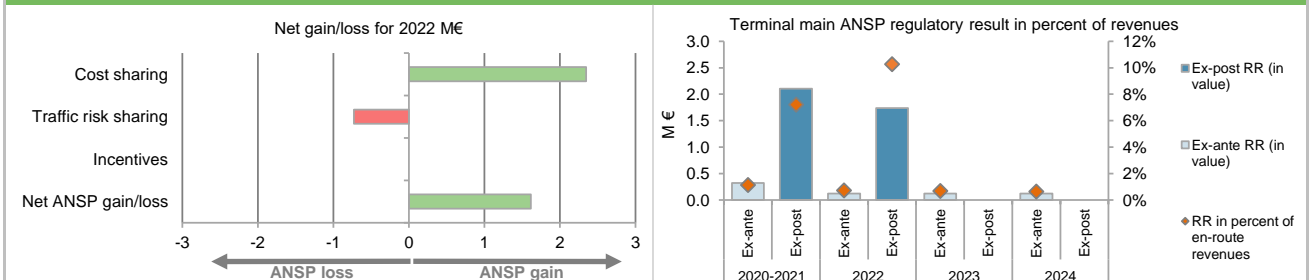
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 934 | 1 251 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 90 | 1 019 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -33 | 74 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 991 | 2 344 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 4.7% | -24.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 28 311 | 16 549 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 798 | -728 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 1 789 | 1 616 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Fintraffic ANS planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 4 419 | 3 050 | 7 469 | 2 811 | 2 800 | 2 812 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| RoE (in value) | 190 | 131 | 321 | 121 | 120 | 121 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 190 | 131 | 321 | 121 | 120 | 121 |
| Revenue for the terminal charging zone | 14 066 | 14 245 | 28 311 | 16 549 | 17 580 | 18 798 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 0.9% | 1.1% | 0.7% | 0.7% | 0.6% |
| Ex-ante RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% | 4.3% |
| Fintraffic ANS actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 4 419 | 2 952 | 7 370 | 2 805 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 4.3% | 4.3% | 4.3% | 4.3% | | |
| RoE (in value) | 190 | 127 | 317 | 121 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 1 789 | 1 789 | 1 616 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 190 | 1 916 | 2 106 | 1 737 | | |
| Revenue for the terminal charging zone | 14 066 | 15 100 | 29 166 | 16 914 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.4% | 12.7% | 7.2% | 10.3% | | |
| Ex-post RoE pre-tax rate (in %) | 4.3% | 64.9% | 28.6% | 61.9% | | |

13. Focus on main ANSP regulatory result on terminal activity



Fintraffic ANS net gain on activity in the Finland terminal charging zone in the year 2022

Fintraffic ANS reported a net gain of +1.6 M€, as a combination of a gain of +2.3 M€ arising from the cost sharing mechanism, with a loss of -0.7 M€ arising from the traffic risk sharing mechanism.

Fintraffic ANS overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.6 M€) and the actual RoE (+0.1 M€) amounts to +1.7 M€ (10.3% of the terminal revenues). The resulting ex-post rate of return on equity is 61.9%, which is higher than the 4.3% planned in the PP.

FINLAND: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Finland-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 1 100 | 1 179 | 2 279 | 1 285 | 1 286 | 1 263 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Finland-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 108 | 108 | 130 | | |
| Revenue for the terminal charging zone | 1 100 | 1 193 | 2 293 | 1 371 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 9.0% | 4.7% | 9.5% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Finland (Finland-MET) corresponds to 9.5% of the terminal revenues. It should be noted that Finland MET does not charge cost of capital. | | | | | | |

FINLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|---------------|---------------|--------------|---------------|---------------|-------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Finland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Finland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finland: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 37 408 395 | 39 370 777 | 76 779 172 | 43 474 245 | 45 038 050 | 46 941 389 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 14 857 949 | 14 908 564 | 29 766 514 | 16 960 141 | 17 656 105 | 18 451 042 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 52 266 344 | 54 279 342 | 106 545 686 | 60 434 386 | 62 694 155 | 65 392 431 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 71.6% | 72.5% | 72.1% | 71.9% | 71.8% | 71.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finland: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 37 408 395 | 35 618 896 | 73 027 291 | 36 620 032 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 14 857 949 | 13 835 328 | 28 693 277 | 14 829 021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 52 266 344 | 49 454 223 | 101 720 568 | 51 449 053 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 71.6% | 72.0% | 71.8% | 71.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 0 | -4 825 118 | -4 825 118 | -8 985 333 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 0.0% | -8.9% | -4.5% | -14.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in p.p. | | 0.0 p.p. | -0.5 p.p. | -0.3 p.p. | -0.8 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>73%</td> <td>27%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>71%</td> <td>29%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 72% | 28% | Actual | 72% | 28% | 2021 | Determined | 73% | 27% | Actual | 72% | 28% | 2020-2021 | Determined | 72% | 28% | Actual | 72% | 28% | 2022 | Determined | 72% | 28% | Actual | 71% | 29% | 2023 | Determined | 72% | 28% | Actual | 72% | 28% | 2024 | Determined | 72% | 28% | Actual | 72% | 28% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 73% | 27% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 71% | 29% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -14.9% (-9.0 M€2017) lower than planned, as en route costs are lower than planned by -6.9 M€2017 and terminal costs are lower than planned by -2.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (71.2%) is slightly lower than planned in the PP for 2022 (71.9%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fintraffic ANS | 1 209 | 55 539 | 2.2% | 6 720 | 55 196 | 12.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finland MET | 0 | 3 853 | 0.0% | 387 | 4 111 | 9.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 1 209 | 59 393 | 2.0% | 7 107 | 59 307 | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Finland covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +7.1 M€ (+5.2 M€ for en route and +1.9 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 12.0% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (2.0% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Finland gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Finland gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>2.0%</td> </tr> <tr> <td>Ex-post</td> <td>12.0%</td> </tr> </tbody> </table> | | | | | | | Result Type | Percentage | Ex-ante | 2.0% | Ex-post | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Percentage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 2.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

France

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FRANCE

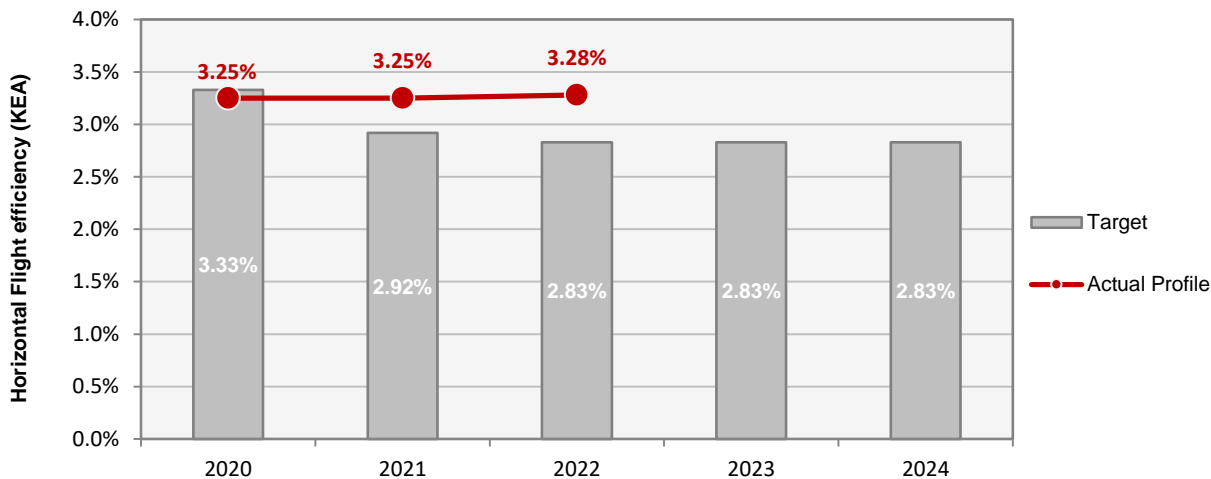
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| DSNA | 95 | C | C | D | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All five EoSM components of the ANSP meet the RP3 target level. The level was maintained compared with 2021. | | | | | | |

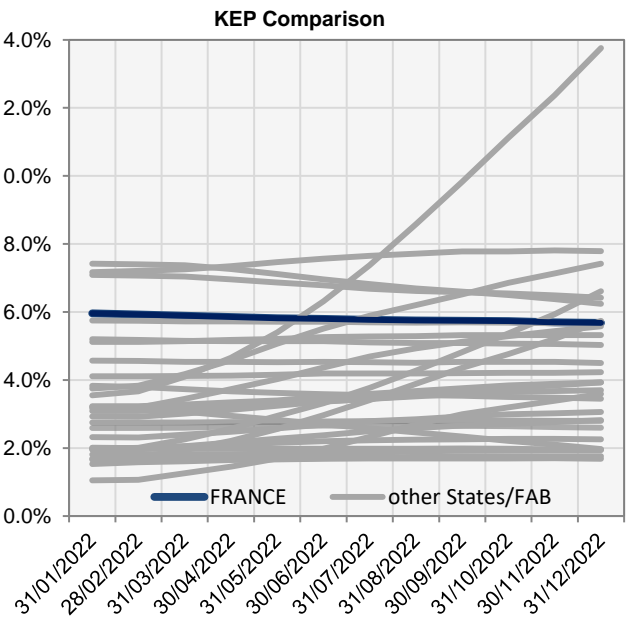
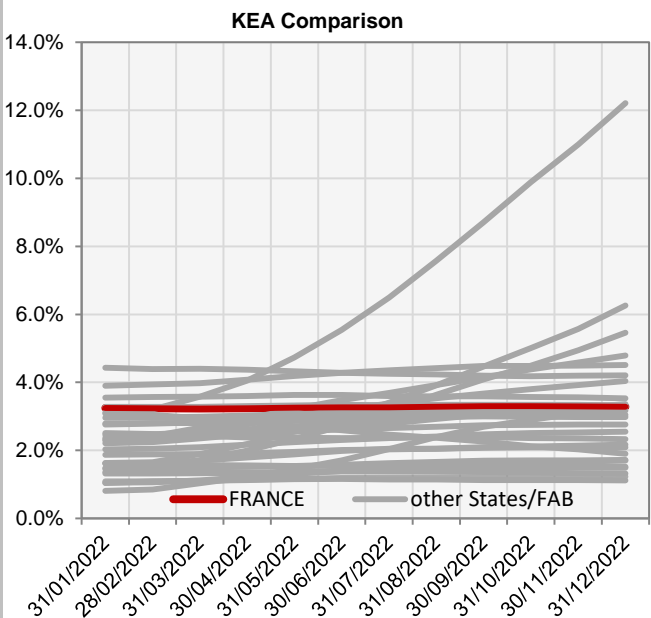
FRANCE

ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 3.33% | 2.92% | 2.83% | 2.83% | 2.83% |
| Actual performance | 3.25% | 3.25% | 3.28% | | |



| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 3.25% | 3.24% | 3.23% | 3.24% | 3.26% | 3.27% | 3.27% | 3.28% | 3.30% | 3.30% | 3.29% | 3.28% |
| KEP | 5.96% | 5.93% | 5.89% | 5.85% | 5.82% | 5.80% | 5.77% | 5.75% | 5.74% | 5.73% | 5.70% | 5.68% |
| KES | 5.75% | 5.72% | 5.68% | 5.65% | 5.63% | 5.61% | 5.59% | 5.57% | 5.56% | 5.55% | 5.53% | 5.52% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

For France, the scope of the RP3 monitoring comprises a total of 58 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only 6 of those airports must be monitored for additional taxi-out and ASMA times. 52 of these 58 airports are grouped into a basket ("LFXX") for monitoring and target setting purposes.

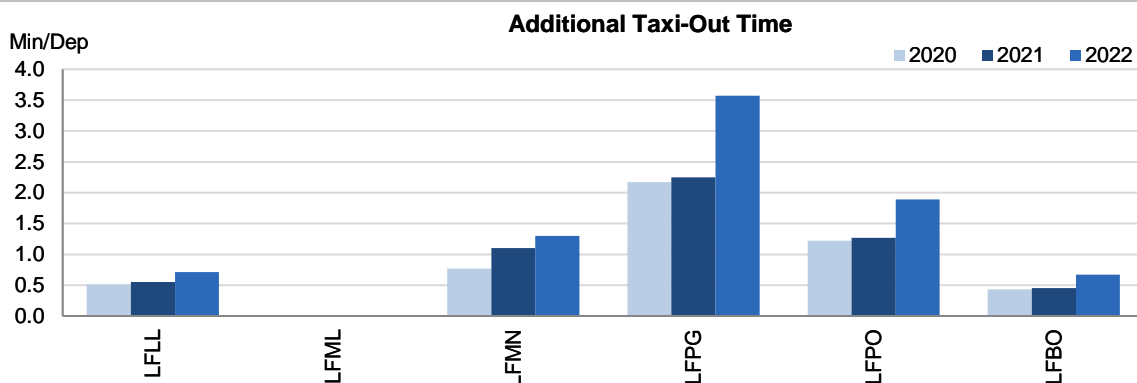
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is established for the 6 airports required. Nevertheless, the data quality in the case for Marseille (LFML) does not allow for the calculation of taxi-out times.

The traffic at the ensemble of these 58 airports in 2022 is still 15% below the 2019 levels, despite the 43% increase with respect to 2021.

All additional times observed an increase in 2022, in line with the traffic increase.

The share of CDO flights decreased even further in 2022. The 3 airports with the lowest share of CDO are located in France.

2. Additional Taxi-Out Time



The additional taxi-out times in 2022 remained at most French monitored airports below the SES average of 2.52 min/dep. Paris Charles de Gaulle on the other hand suffered the most significant increase (LFPG: 2019: 3.77 min/dep.; 2020: 2.17 min/dep.; 2021: 2.25 min/dep.; 2022: 3.57 min/dep) reaching values close to pre-pandemic and the 4th highest among SES monitored airports in 2022.

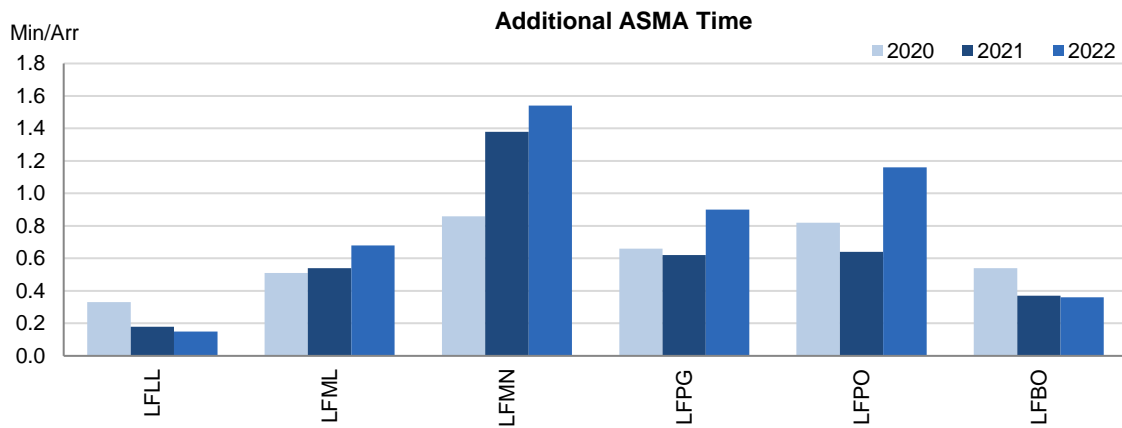
According to the French monitoring report: *Performance evolution is linked with the traffic increase till 2020 (2020&2021 traffic levels where very low due to the traffic collapse related to covid-19 travel bans) and general 2022 ATC performance impacted by the high traffic recovery and volatility ; however 2022 figures are better than 2019 figures and better than during the whole RP2 with equivalent traffics, showing general progress on the taxi-out time phase at French airports.*

Regarding the data quality for Marseille airport, the French NSA reports: *The Airport data flow (APDF) has been implemented at Marseille airport in 2019 with some technical issues regarding block data.*

Beginning 2020, when within the framework of a project on implementing A-CDM concept at Marseille airport additional exchanges took place regarding lacking information (AOBT/AIBT) and how to provide it through the airport data flow but it could not be implemented during the covid 19 phase.

Eurocontrol has contacted Marseille airport authorities to tackle the issue in 2022 and beginning 2023. The French NSA will support Eurocontrol and Marseille airport in order to identify remaining issues and implement the on block data provision as soon as possible.

3. Additional ASMA Time



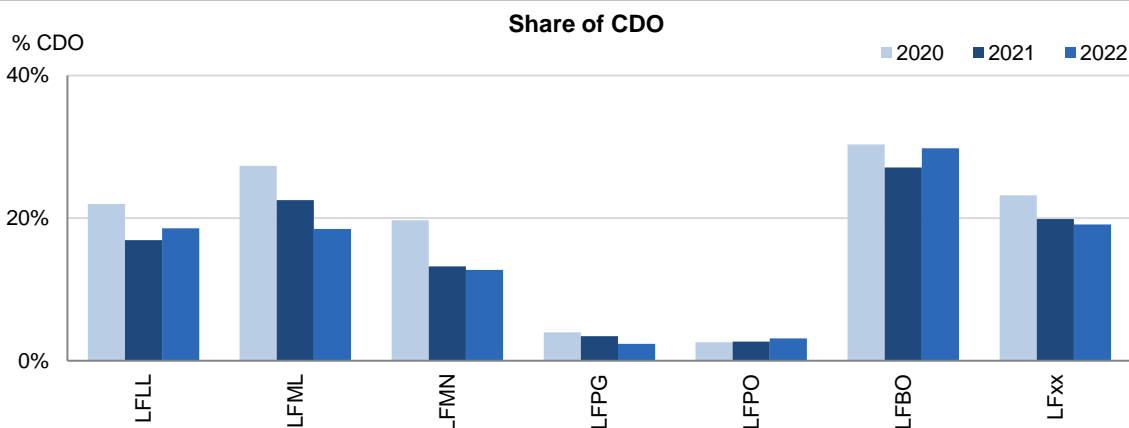
The additional ASMA in 2022 increased slightly at Marseille (LFML) and Paris Charles de Gaulle (LFPG) and remained very similar at Lyon (LFLL) and Toulouse (LFBO). At these 4 airports the result for 2022 is better than the average SES performance of 1.06 min/arr.

At Paris Orly there was a more significant increase (LFPO: 2019: 1.04 min/arr.; 2020: 0.82 min/arr.; 2021: 0.64 min/arr.; 2022: 1.16 min/arr.) surpassing the 2019 values. And at Nice, where the traffic recovered better than at the rest of French airports, additional times increased once again (LFMN; 2019: 1.76 min/arr.; 2020: 0.86 min/arr.; 2021: 1.38 min/arr.; 2022: 1.54 min/arr.)

According to the French monitoring report: *Performance evolution is linked with the traffic increase till 2020 (2020&2021 traffic levels were very low due to the traffic collapse related to covid-19 travel bans) and general 2022 ATC performance impacted by the high traffic recovery and volatility; however 2022 figures are generally equivalent or better than 2019 figures and generally equivalent or better than during the whole RP2 with equivalent traffics, showing general progress on the additional time in terminal airspace phase at some French airports.*

This also is closely linked to working methods and the sequencing of approaches, some actions are undertaken by DSNA to achieve "quick wins" where possible.

4. Share of arrivals applying CDO



For 13 out of the 58 airports, the share of CDO flights was above the RP3 overall value in 2022 (29.0%). In 2022, 12.6% of the arrivals performed a CDO compared to 13.9% in 2021.

The Paris airports have a remarkably low share of CDO flights. The 3 airports with the lowest share of CDO flights in 2022 are French, followed by Frankfurt. As in 2020 and 2021, Paris-Le Bourget (LFPB) has the lowest share of CDO flights of all airports monitored during 2022 (0.6%).

According to the French monitoring report: *DSNA has an objective to drastically increase the CDO rate (from FL75) to reduce noise on all major airports, and remove as much level-offs as possible.*

Launch of PBN to ILS projects in LFPG, LFPO, LFLL, LFMN, with significant CDO rate improvement targeted.

TF Green operations led to some vertical improvements with Green descent projects: improvements on certain legs from top of descent (CDO fuel).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|----------------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Lyon/Saint-Exupéry-LFLL | 0.51 | 0.55 | 0.71 | | | 0.33 | 0.18 | 0.15 | | | 22% | 17% | 19% | | |
| Marseille/Provence-LFML | n/a | n/a | n/a | | | 0.51 | 0.54 | 0.68 | | | 27% | 23% | 18% | | |
| Nice/Côte d'Azur-LFMN | 0.77 | 1.1 | 1.3 | | | 0.86 | 1.38 | 1.54 | | | 20% | 13% | 13% | | |
| Paris/Charles-De-Gaulle-LFPG | 2.17 | 2.25 | 3.57 | | | 0.66 | 0.62 | 0.9 | | | 4% | 3% | 2% | | |
| Paris/Orly-LFPO | 1.22 | 1.27 | 1.89 | | | 0.82 | 0.64 | 1.16 | | | 3% | 3% | 3% | | |
| Toulouse/Blagnac-LFBO | 0.43 | 0.45 | 0.67 | | | 0.54 | 0.37 | 0.36 | | | 30% | 27% | 30% | | |
| Agen/La-Garenne-LFBA | - | - | - | | | - | - | - | | | 20% | 13% | 12% | | |
| Ajaccio/Napoléon-Bonaparte-LFKJ | - | - | - | | | - | - | - | | | 39% | 32% | 34% | | |
| Albert/Bray-LFAQ | - | - | - | | | - | - | - | | | 29% | 31% | 21% | | |
| Anancy/Meythet-LFLP | - | - | - | | | - | - | - | | | 16% | 13% | 11% | | |
| Avignon/Caumont-LFMV | - | - | - | | | - | - | - | | | 14% | 12% | 11% | | |
| Bale/Mulhouse-LFSB | - | - | - | | | - | - | - | | | 18% | 13% | 14% | | |
| Bastia/Poretta-LFKB | - | - | - | | | - | - | - | | | 40% | 33% | 33% | | |
| Beauvais/Tillé-LFOB | - | - | - | | | - | - | - | | | 8% | 7% | 5% | | |
| Bergerac/Roumanière-LFBE | - | - | - | | | - | - | - | | | 15% | 13% | 19% | | |
| Béziers/Vias-LFMU | - | - | - | | | - | - | - | | | 27% | 25% | 27% | | |
| Biarritz/Bayonne-Anglet-LFBZ | - | - | - | | | - | - | - | | | 26% | 21% | 22% | | |
| Bordeaux/Mérignac-LFBD | - | - | - | | | - | - | - | | | 32% | 27% | 26% | | |
| Brest/Bretagne-LFRB | - | - | - | | | - | - | - | | | 33% | 33% | 32% | | |
| Brive/Souillac-LFSL | - | - | - | | | - | - | - | | | 15% | 20% | 21% | | |
| Caen/Carpique-LFRK | - | - | - | | | - | - | - | | | 11% | 10% | 10% | | |
| Calvi/Sainte-Catherine-LFKC | - | - | - | | | - | - | - | | | 37% | 34% | 32% | | |
| Cannes/Mandelieu-LFMD | - | - | - | | | - | - | - | | | 13% | 9% | 10% | | |
| Carcassonne/Salvaza-LFMK | - | - | - | | | - | - | - | | | 19% | 19% | 21% | | |
| Châlons/Vatry-LFOK | - | - | - | | | - | - | - | | | 27% | 28% | 26% | | |
| Chambéry/Aix-les-Bains-LFLB | - | - | - | | | - | - | - | | | 9% | 14% | 8% | | |
| Châteauroux/Déols-LFLX | - | - | - | | | - | - | - | | | 12% | 10% | 12% | | |
| Clermont-Ferrand/Auvergne-LFLC | - | - | - | | | - | - | - | | | 22% | 16% | 21% | | |
| Deauville/Normandie-LFRG | - | - | - | | | - | - | - | | | 11% | 11% | 12% | | |
| Dinard/Pleurtuit-Saint-Malo-LFRD | - | - | - | | | - | - | - | | | 19% | 13% | 16% | | |
| Dole/Tavaux-LFGJ | - | - | - | | | - | - | - | | | 13% | 12% | 9% | | |
| Figari/Sud-Corse-LFKF | - | - | - | | | - | - | - | | | 35% | 32% | 34% | | |

| | | | | | | | | | | | | |
|-------------------------------|---|---|---|---|---|---|---|-----|-----|-----|--|--|
| Grenoble/Isère-LFLS | - | - | - | - | - | - | - | 18% | 20% | 20% | | |
| Hyères/Le-Palyvestre-LFTH | - | - | - | - | - | - | - | 30% | 22% | 18% | | |
| Istres/Le-Tubé-LFMI | - | - | - | - | - | - | - | 31% | 24% | 22% | | |
| La-Rochelle/Ile de Ré-LFBH | - | - | - | - | - | - | - | 26% | 22% | 20% | | |
| Lille/Lesquin-LFQQ | - | - | - | - | - | - | - | 29% | 24% | 14% | | |
| Limoges/Bellegarde-LFBL | - | - | - | - | - | - | - | 30% | 31% | 32% | | |
| Lorient/Lann-Bihoué-LFRH | - | - | - | - | - | - | - | 30% | 28% | 28% | | |
| Lyon/Bron-LFLY | - | - | - | - | - | - | - | 10% | 7% | 8% | | |
| Metz-Nancy/Lorraine-LFJL | - | - | - | - | - | - | - | 9% | 8% | 14% | | |
| Montpellier/Méditerranée-LFMT | - | - | - | - | - | - | - | 33% | 30% | 29% | | |
| Nantes/Atlantique-LFRS | - | - | - | - | - | - | - | 27% | 23% | 24% | | |
| Nîmes/Garons-LFTW | - | - | - | - | - | - | - | 18% | 20% | 18% | | |
| Paris/Le Bourget-LFPB | - | - | - | - | - | - | - | 1% | 1% | 1% | | |
| Pau/Pyrénées-LFBP | - | - | - | - | - | - | - | 22% | 16% | 24% | | |
| Perpignan/Rivesaltes-LFMP | - | - | - | - | - | - | - | 43% | 39% | 34% | | |
| Poitiers/Biard-LFBI | - | - | - | - | - | - | - | 16% | 12% | 18% | | |
| Quimper/Pluguffan-LFRQ | - | - | - | - | - | - | - | 29% | 25% | 38% | | |
| Rennes/St-Jacques-LFRN | - | - | - | - | - | - | - | 53% | 49% | 45% | | |
| Rodez/Marcillac-LFCR | - | - | - | - | - | - | - | 17% | 16% | 19% | | |
| Rouen/Vallée-de-Seine-LFOP | - | - | - | - | - | - | - | 29% | 28% | 30% | | |
| Saint-Etienne/Bouthéon-LFMH | - | - | - | - | - | - | - | 11% | 12% | 13% | | |
| Saint-Nazaire/Montoir-LFRZ | - | - | - | - | - | - | - | 20% | 22% | 24% | | |
| Strasbourg/Entzheim-LFST | - | - | - | - | - | - | - | 17% | 14% | 14% | | |
| Tarbes-Lourdes/Pyrénées-LFBT | - | - | - | - | - | - | - | 63% | 64% | 53% | | |
| Tours/Val-de-Loire-LFOT | - | - | - | - | - | - | - | 48% | 46% | 32% | | |
| Toussus/Le-Noble-LFPN | - | - | - | - | - | - | - | 5% | 5% | 5% | | |

FRANCE

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:

At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.

At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| France | 71% | 72% | 72% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bordeaux | | | | | |
| Brest | | | | | |
| Marseille | | | | | |
| Paris | | | | | |
| Reims | | | | | |

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| France | 62% | 66% | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bordeaux | | | | | |
| Brest | | | | | |
| Marseille | | | | | |
| Paris | | | | | |
| Reims | | | | | |

Initiatives implemented or planned to improve PI#7

No validated data available for 2022 ... the data on previous cycles were kindly provided by Eurocontrol and processed by the FR NSA without further assessment by interested parties including MIL FR.

In the course of the 2022 monitoring exercise, a similar request has been issued in parallel to Eurocontrol and involved parties within FR to compute data with the help of PRISMIL tool. An active coordination between FR experts, Eurocontrol PRISMIL Team and NMIR support highlighted some biases in the information that could be retrieved.

A better understanding of the issue should put FR in a position to compute and provide the data from 2023 onward making use of existing tools and involving additional experts from DSNA.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| France | 66% | 67% | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bordeaux | 116% | 86% | | | |
| Brest | 101% | 83% | | | |
| Marseille | 90% | 96% | | | |
| Paris | 99% | 100% | | | |
| Reims | | 127% | | | |

Initiatives implemented or planned to improve PI#8

No validated data available for 2022 ... the data on previous cycles were kindly provided by Eurocontrol and processed by the FR NSA without further assessment by interested parties including MIL FR.

In the course of the 2022 monitoring exercise, a similar request has been issued in parallel to Eurocontrol and involved parties within FR to compute data with the help of PRISMIL tool. An active coordination between FR experts, Eurocontrol PRISMIL Team and NMIR support highlighted some biases in the information that could be retrieved.

A better understanding of the issue should put FR in a position to compute and provide the data from 2023 onward making use of existing tools and involving additional experts from DSNA.

FRANCE

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--------------------------------|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 3.12 | 0.18 | 0.25 | 0.25 | 0.25 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. |
| Actual performance | 0.61 | 0.46 | 1.49 | | | |

NSA's assessment of capacity performance

In 2022, traffic recovery has reached 89,3% of 2019 traffic for the full year and 92% of 2019 traffic during the Summer period with peaks at or above 2019 traffic levels for some sectors.

The capacity target for en route has not been met, 1,49 min/flight vs 0,25 min/flight, mainly due to the impact of new ATM system (4-FLIGHT) implementation in two ACCs (Reims and Marseille) together with related transition plans but also to due impact of industrial action in September. Some ACCs are still experiencing some staff shortages (Paris, Reims, Marseille).

Corrective actions have been identified and discussed with DSNA and will be implemented in order to mitigate the main delay causes (implementation of NOP corrective measures, addressing ATCO shortages, defining and implementing densified rostering schemes and additional flexibility, reduction of ATCO training time, negotiation of a new social agreement, implementing lessons learnt from 4-FLIGHT implementations in Reims and Bordeaux etc.)

Monitoring process for capacity performance

The French NSA monitoring process is twofold: on the top of the FABEC general monitoring process described in the French performance plan and in the previous 2020 and 2021 RP3 FABEC performance monitoring reports (cf. these documents), a national process has been established based on the following:

- The French NSA is regularly provided with various reports, analysis and data such as FABEC monthly capacity reports (including DSNA data), weekly/monthly/yearly capacity DSNA-OPS directorate reports, PRU monthly dashboards which enable to closely monitor the performance evolution and cross-check data;
- The French NSA is invited to and participates in the capacity planning meetings organized during winter by the NM with DSNA to prepare NOP updates (including discussion on remedial measures, traffic and delays forecast for DSNA ACC, Summer DSNA sector opening schemes etc.);
- The French NSA is invited to and participates in the two yearly Strategic airspace user meetings held by DSNA (beginning of Summer & Winter) where strategic evolutions, OPS projects, ongoing performance, investment plan and HR updates are presented by DSNA to the airspace users which can react and express their views and concerns if any;
- The French NSA has included in its yearly surveillance programme an OPS performance review : regarding capacity, on top of previous meeting participation and data & reports analysis, a dedicated meeting is organized in April/May with DSNA/OPS directorate in order to analyse the previous year performance, define and validate ongoing or new remedial and corrective measures to be taken by DSNA to address issues and underperformance, have a view on ongoing year capacity provision, prepare the yearly FR performance monitoring report to be submitted 1st June ; a follow-up meeting is organized by the French NSA in October/November to follow-up remedial measure implementation; analyse Summer performance, and discuss future performance.

Capacity Planning

Since April 2020, a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.

A first version of the new 2023-2027 NOP has been released in May 2023. It includes the capacity planning for DSNA ACCs and is still to be updated and finalized in June 2023 with the latest available capacity information and remedial measures for all DSNA ACCs concerned by capacity issues.

DSNA is of course part of this process and contributes to the provision for a consolidated European network view of the evolution of the air traffic, enabling the planning of the service delivered in the recovery phase to match the expected air traffic demand in a safe, efficient and coordinated manner.

It should be also noted that the French NSA, upon its request, has been associated to this process and attends since RP2 the NM - DSNA capacity planning meetings in order to be informed of the outcome of previous NOP remedial measures, French ACCS capacity issued and NM delays forecast for French ACCs, any new measures proposed either by DSNA or the NM to mitigate capacity issues.

ATCO in OPS (FTE)

| ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
|----------------------------|------|------|------|------|------|------|--------------|
| Bordeaux ACC | | | | | | | |
| Planned (Perf Plan) | - | - | 238 | 244 | 246 | 249 | |
| Actual | 218 | 229 | 247 | 234 | | | |
| Brest ACC | | | | | | | |
| Planned (Perf Plan) | - | - | 254 | 252 | 257 | 255 | |
| Actual | 249 | 248 | 256 | 258 | | | |
| Marseille ACC | | | | | | | |
| Planned (Perf Plan) | - | - | 310 | 319 | 321 | 322 | |
| Actual | 283 | 291 | 308 | 323 | | | |
| Paris ACC | | | | | | | |
| Planned (Perf Plan) | - | - | 254 | 262 | 256 | 265 | |
| Actual | 257 | 248 | 249 | 230 | | | |
| Reims ACC | | | | | | | |
| Planned (Perf Plan) | - | - | 188 | 182 | 191 | 198 | |
| Actual | 195 | 186 | 190 | 197 | | | |

Regarding ATCO planning, the plans are and will always be subject to change; in addition, the details of the planned evolution of ATCO numbers within an ANSP with several ACCs are socially sensitive.

However, ATCO hiring and assignment is one of the major driver for current capacity and staffing issues solving. ACE figures are provided and can be referred to. Nevertheless, the French NSA considers that they cannot be considered as a commitment where planning figures are requested, due to the high level of uncertainties related to such ATCO recruitment plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3.

There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all, the social agreements in place in an ANSP play a major role in the availability of ATCOs to fulfill the OPS needs (a new social agreement is currently under discussion and should be signed before end 2023 ; certain provisions - recruitment levels, flexibility and rostering, staff retention incentives - could have an impact on futures values).

Then, there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, moreover when understaffed ACC are concerned.

Application of Corrective Measures for Capacity (if applicable)

Traffic recovery for DSNA has reached 89,3% of 2019 traffic for the full year and 92% of 2019 traffic during the Summer period with peaks at or above 2019 traffic levels for some sectors.

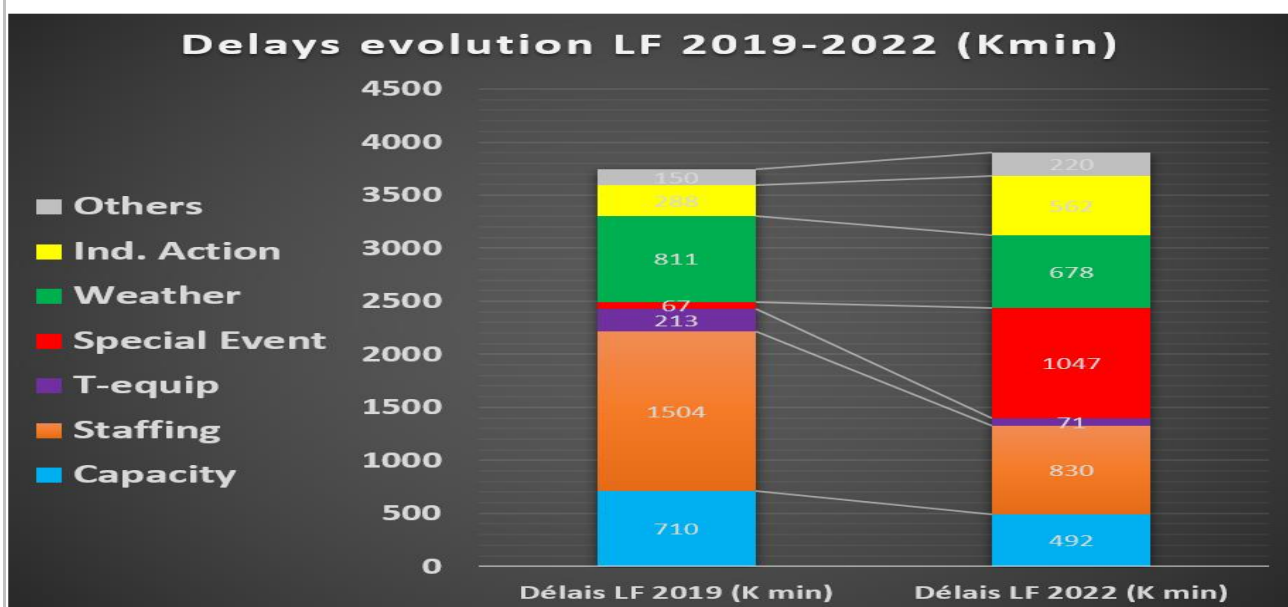
Delays due weather and to some staffing and capacity issues remain at Paris, Marseilles and Reims ACCs even if capacity and staffing delays have been reduced compared to 2019 (divided by two).

Some 2022 DSNA delays are also due to industrial actions (twice 2019 delays due to industrial actions).

The main reason for 2022 delays (1/3 of 2022 ER delays) is the impact on Marseilles and Reims ACCs of the training, validation and implementation of the new ATM system 4-FLIGHT and associated transition plans. Most of delays were incurred at Reims where this new system has been implemented for the 1st time 4th April 2022.

Due to technical issues on the core FDPS system which needed to be corrected by the manufacturer or to be taken into account for the development of an updated version of the software to be implemented at a later stage, the transition plan has been extended (until November 2022) and some capacity reductions have been maintained longer than expected, in particular in the lower sectors (under FL 345).

Lesson learnt from Reims ACC 4-FLIGHT implementation and software corrections done by the manufacturer to mitigate some technical issues identified during the Reims ACC implementation in April enabled Marseille to implement 4-FLIGHT 6th December 2022 with less impact on the traffic.



Recommendations to the ANSP:

A specific meeting was organized with DSNA in order to gather both explanations and information about remedial measures already launched and identify potential additional measures that could be implemented by DSNA in 2023 and beyond to tackle non temporary capacity issues.

The following recommendations / course of actions have been discussed and agreed with DSNA:

- General remedial measures already identified, coordinated with the Network Manager and published in the NOP 2023-2027 for the 5 French ACC should be implemented as soon as possible;

- A set of specific remedial measures put in place by DSNA or already planned in 2023 to mitigate identified non temporary issues at the French ACCs have been presented to the French NSA and are listed in the table below: the French NSA will be kept informed by DSNA of their timely implementation, of the expected benefit and of any issue in the implementation plan, and a follow-up meeting will be organized before the end of 2023;

- An analysis of potential risks on 2023 and beyond underperformance has been carried over and required potential remedial measures to address such a situation have been discussed; they are also addressed in the final chapter of the en route capacity tab of the monitoring together with the actions taken by the NSA to monitor future performance through its surveillance program.

| Planned remedial actions | | | |
|--|---|-----------------------------|---|
| Title | Description | Timeline for implementation | Status |
| <i>Implementation of NOP 2023-2027</i> | <i>Implementation of draft and future final NOP 2023 - 2027 remedial measures for DSNA ACCs.</i> | <i>2023-2027</i> | <i>ongoing</i> |
| <i>Implementation of new densified rostering schemes</i> | <p><i>Implementation of new modalities for locally densified service towers to introduce more flexibility and better take into account the increased volatility of air traffic in DSNA ACCs.</i></p> <p><i>Applied in Reims since January 2022 in the context of the implementation of 4-FLIGHT but also in Brest, Bordeaux and Paris. In 2023, a densified rostering scheme will also be applied in the Summer at Marseille ACC and maximum densification levels will be applied at Reims, Bordeaux, Paris and Marseille ACCs. Brest ACC remains on the densified rostering scheme implemented in 2022.</i></p> <p><i>Expected benefits: between 10 and 20% additional capacity depending on the tour of duty applied locally.</i></p> | <i>2023</i> | <i>14th January 2022 - New order on densified rostering updated rules</i> |
| <i>4-FLIGHT implementation: Marseilles ACC transition plan extension and Paris ACC transition plan preparation</i> | <p><i>4-FLIGHT transition plan continued at Marseilles ACC: gradual increase in capacity for summer 2023 depending on how the ATCOs take over the system (depending on traffic levels, impact of industrial action to be managed slowing down the initially planned increase in capacity).</i></p> <p><i>Preparation of the transition plan with the Network Manager for the implementation of 4-FLIGHT at Paris ACC: discussion with the NM on the coordination measures and programme reduction for winter 2023/2024 before future capacity increase.</i></p> | <i>2023</i> | <i>ongoing</i> |

| | | | |
|---|---|---|---|
| <p><i>Implementation of changes in the initial and continuing training of ICNA</i></p> | <p><i>A new 12-week intensive initial training phase on simulator at the French National Civil Aviation School (ENAC) has been introduced to reduce the total duration of qualification training for ICNAs assigned to DSNA ACCs. Implemented for the first time at the end of 2022/beginning of 2023 in Reims; will be implemented for new assignments in Paris ACC and then generalised to all DSNA ACCs.</i></p> | <p><i>Winter 2022/2023 and onward</i></p> | <p><i>ongoing (1st classroom training session in December 2022 for Reims ACC ATCO trainees)</i></p> |
| <p><i>DSNA: transfer of sector FL 115-195 from ACC to APP</i></p> | <p><i>In order to reduce the duration of training and to reinforce the capacity of DSNA ACCs, the sectors dealing with flights between flight levels 115 and 195 will be progressively transferred to approaches. Done in 2021 in Brest and in progress in the other ACCs; next DSNA concerned ACC is Reims ACC (after implementation of FRA, which is a priority) on 28/11/2024.</i></p> | <p><i>2021-2025</i></p> | <p><i>ongoing</i></p> |
| <p><i>Implementation of a loyalty scheme for ATCOs at the Paris and Reims ACC centres (also concerns Orly approach)</i></p> | <p><i>In order to reduce the turnover of ATCOs in centres still experiencing staffing issues, a loyalty scheme will be set up for the Reims, Paris and Orly centres: a monthly bonus will be paid to ATCOs remaining in post for at least 9 years after their qualification, and an exceptional bonus will be paid to ATCOs remaining in post for at least 15 years, bonus evolving thereafter according to the length of time in post (maximum obtained after 29 years in post).</i></p> | <p><i>2023</i></p> | <p><i>ongoing</i></p> |
| <p><i>Implementation of a new social agreement</i></p> | <p><i>a new DGAC social agreement will be negotiated between the DGAC, the Ministries of Finance, Transport and the Civil Service and the DGAC's representative social organisations, in order to implement a certain number of measures over the period 2023 - 2027, applying to DSNA, particularly with regard to the organisation of services, staffing levels and recruitment, the flexibility of rostering schemes and working methods.</i></p> | <p><i>2023 -2027</i></p> | <p><i>ongoing</i></p> |

It should also be noted that during year 2023 a national pension scheme reform has been announced by the French Government and should be discussed 1st half of the year. Internally, a new social agreement for the 2023 - 2027 period will be discussed between DGAC, the French ministries of Finance, Public administration and Transport and the Unions, with the aim to sign it and implement it before the end of the year.

These two social events could lead to industrial actions and social unrest having an impact on DSNA performance. In this case all possible collaborative decision management processes shall be used with the airspace users, the network manager and neighbouring ANSPs in order to mitigate as much as possible the impact on the users.

In addition a special coordination will take place between NM, DFS and DSNA to prepare Summer 2023 regarding additional flights to be rerouted from Karlsruhe ACC to Reims ACC in order to address some staffing issues at Karlsruhe.

Summary of capacity performance

France did not achieve the required en route capacity performance in 2022. There were 2 971k flights handled in the airspace of France in 2022, a significant increase on the 1 813k flights handled in 2021, but less than the 3 372k flights handled in 2019.

There were 4.3 million minutes of en route ATFM delay in France- during 2022, including 765k minutes that were attributed to DSNA (from other ANSPs) during the Network Manager's post operations attribution process, due to the eNM/S22 measures.

For comparison, in 2019, DSNA handled 3 372k flights with 4.5 million minutes of en route ATFM delay. Performance in 2022 was significantly affected by the implementation of 2 major ATM system upgrades in Reims ACC and Marseille ACC, which account for approximately one third of ATFM delays.

1. Overview

For France, the scope of the RP3 monitoring comprises a total of 58 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only 6 of those airports must be monitored for pre-departure delays. 52 of these 58 airports are grouped into a basket ("LFX") for monitoring and target setting purposes.

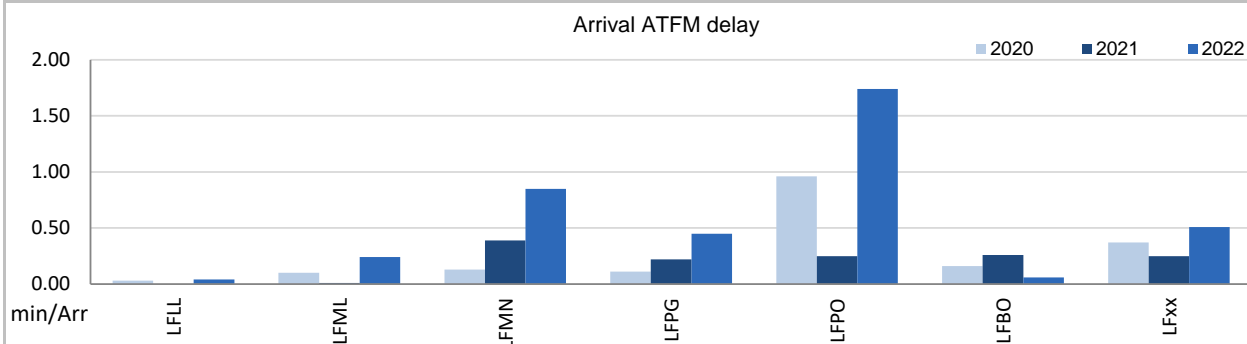
The Airport Operator Data Flow, necessary for the monitoring of the pre-departure delays, is established for the 6 airports required. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at Paris Charles de Gaulle, with more than 50% of the reported delay not allocated to any cause.

The traffic at the ensemble of these 58 airports in 2022 was still 15% below the 2019 levels, despite the 43% increase with respect to 2021.

Average arrival ATFM delays in 2022 was 0.62 min/arr, compared to 0.23 min/arr in 2021.

ATFM slot adherence has improved (2022: 89.2%; 2021: 88.4%).

2. Arrival ATFM Delay



The average arrival ATFM delays have increased at 5 of the 6 main French airports.

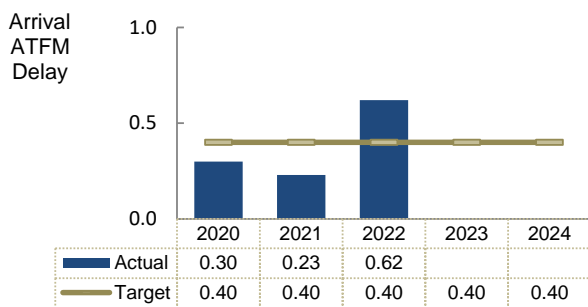
The highest increase was observed at Paris Orly (LFPO) where they averaged 1.74 min/arr., one of the highest values in the SES area in 2022. 45% of these delays at Orly were attributed to Aerodrome Capacity issues, followed by 25% attributed to Weather and 14% to ATC Staffing.

Nice (LFMN) also observed a moderate increase resulting in 0.85 min/arr. 73% of these delays were attributed to ATC Staffing issues. The rest of the main French airports remained below the SES average for arrival ATFM delay in 2022 (0.52 min/arr.)

The French monitoring report lists 5 measures and remedial actions (see table below)

| Title / Airport(s) | Description | Timeline for implementation | Status |
|--|---|-----------------------------|---|
| <i>Consolidation of approach and tower staffing</i> | <i>Harmonisation of the staffing of approaches and towers, taking into account local specificities: future departures, average qualification time, transfer and retirement forecasts. The model will be scalable.</i> | <i>2023</i> | <i>Launched</i> |
| <i>Creation of new Flight Information Centres and optimisation of ATCO resources</i> | <i>Create between 2 and 4 Flight Information Centres (North and South), i.e. about 20 flight information sectors instead of 50 at present) in order to facilitate future approach groupings and optimise the work of ATCOs by refocusing on the core business.</i> | <i>2023 and onward</i> | <i>Launched</i> |
| <i>Implementation of a new social agreement</i> | <i>a new DGAC social agreement will be negotiated between the DGAC, the Ministries of Finance, Transport and the Civil Service and the DGAC's representative social organisations, in order to implement a certain number of measures over the period 2023 - 2027, applying to DSNA, particularly with regard to the organisation of services, staffing levels and recruitment, the flexibility of rostering schemes and working methods.</i> | <i>2023 -2027</i> | <i>ongoing</i> |
| <i>Implementation of new densified rostering schemes</i> | <i>Implementation of new modalities for locally densified service towers to introduce more flexibility and better take into account the increased volatility of air traffic in DSNA ACCs. In addition to the ACCs, the DSNA is also implementing new densified rostering schemes at main approaches: Roissy-CDG, Nice, Lyon, Marseille, Montpellier. A new rostering scheme will also be implemented at Orly in summer 2023. Expected benefits: between 10 and 20% additional capacity depending on the tour of duty applied locally.</i> | <i>2022</i> | <i>14th January 2022 - New order on densified rostering updated rules</i> |
| <i>Progressive consolidation plan of DSNA approaches</i> | <i>DSNA has announced its objective of grouping all approach activity into 15 approaches at the level of the France Mainland (i.e. the eventual grouping of 10 approaches). For example, in April 2024 the Lille approach will take over the Rouen approach and the Rennes approach will take over Deauville; the Strasbourg approach will take over the Metz approach in 2025, etc.</i> | <i>2023 - 2030</i> | <i>Launched</i> |

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was not met, with actual arrival ATFM delays at 0.62 min/arr. in average, and the national target set at 0.40 min/arr. According to the French monitoring report, this is mainly due to the following reasons:

- During the previous years, in order to address the en route staffing and capacity issues due to ATCO shortages in some DSNA ACCs, priority has been given to recruiting, training and assigning staff to the 5 French ACCs. In that context, some DSNA approaches and towers are now progressively also experiencing locally staff shortages (for example Paris-Orly, Basel or Bordeaux airports...);

With the 2022 traffic progressively catching up pre covid levels, some airports located in touristic areas (such as the South-East of France: Nice and Marseille airports for example, but also Corsica airports) have faced a strong increase in traffic, with Summer traffic close to 2019 levels and high peak-hours in some cases ; meanwhile Toulon approach has been transferred to Nice approach in 2023, also having a significant impact on Nice ATC capacity this year.

- Paris-Orly airport has also been impacted by construction work on taxiways and by staff shortage and the new rostering scheme couldn't be implemented in 2022;

- However, it should be noted that weather and industrial action and aerodrome capacity (main non-CRSTMP delays causes for 2022) represent 45% of the French terminal delays in 2022.

Regarding the recommendations to the ANSP to rectify the situation, the French NSA reports:

A specific meeting has been organized with DSNA in order to gather both explanations and information about remedial measures already launched and identify potential additional measures that could be implemented by DSNA in 2023 and beyond to tackle non temporary terminal capacity issues.

The following recommendations / course of actions have been discussed and agreed with DSNA:

- A set of specific remedial measures put in place by DSNA or already planned in 2023 to mitigate identified non temporary issues at the French approaches and towers have been presented to the French NSA and are listed in the table below: the French NSA will be kept informed by DSNA of their timely implementation, of the expected benefit and of any issue in the implementation plan, and a follow-up meeting will be organized before the end of 2023;

- An analysis of potential risks on 2023 and beyond underperformance has been carried over and required potential remedial measures to address such a situation have been discussed; they are also addressed in the final chapter of the terminal capacity tab of the monitoring together with the actions taken by the NSA to monitor future performance through its surveillance program

See comments and remedial measures listed above, which, for most of them address the whole RP3 timeframe including risks which are likely to lead to performance targets not being achieved in 2023 and 2024.

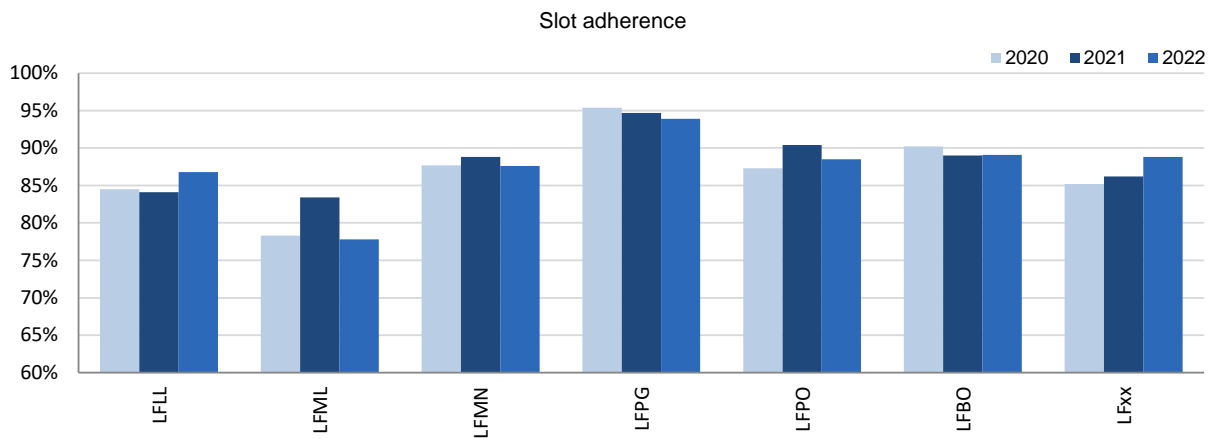
It should also be noted that during year 2023 a national pension scheme reform has been announced by the French Government and should be discussed 1st half of the year. Internally, a new social agreement for the 2023 - 2027 period will be discussed between DGAC, the French ministries of Finance, Public administration and Transport and the Unions, with the aim to sign it and implement it before the end of the year.

These two events, socially sensitive, could lead to industrial actions and social unrest having an impact on DSNA performance. In this case all possible collaborative decision management processes shall be used with the airspace users, the network manager and neighboring ANSPs in order to mitigate as much as possible the impact on the users.

The French NSA will closely monitor the implementation of the above listed remedial measures by DSNA and assess their impact on the en route capacity performance through its surveillance program ; should any additional measures be necessary, it will be studied and discussed accordingly with DSNA in order to assess their feasibility, their potential impact on other performance area KPIs, their benefits and the related implementation timeline.

The French NSA will be involved in the discussions regarding the social agreement discussions and their implementation.

4. ATFM Slot Adherence



National level and main national individual airports involved are above the 80% threshold of compliance.

The national average was 89.2%, slightly better than in 2021 when the adherence was 88.4%. With regard to the 10.8% of flights that did not adhere, 5.1% was early and 5.8% was late.

The French monitoring report explains: *Globally, DSNA has reported to the NSA some issues in relation with the adherence to CTOT. Root causes as well as corrective measures have been identified and already been partially implemented to improve the performance.*

They address both systemic elements applicable to many airports and specific items to solve the situation in Marseille where the 80% threshold was not met in 2022.

Several causes are noticed with regard to the adherence to CTOT:

- 2 to 5 minutes structural difference between the actual take-off time and the ATOT issued via FSA message. Operational and technical options are investigated to solve it.

- Strong demand on parking stands in relation with seasonal traffic or platform infrastructures (limited number of taxiways).

- ATM system related issues:

- * technical : update rates (especially for new CTOT) in CHMI and ATC systems not synchronised (as a work around, investigation of using NMP FLOW as an additional tool)

- * operational : information disseminated on 3 tools to be monitored by ATCOs

- Conflicting priorities between aircraft operators requesting and accepting any slot improvement and the departure sequence put in place by ATCOs.

On the specific case of Marseille, all the flights subject to a slot extension request by TWR were on the NM list (NMIR sources) of flights that did not adhere to their slot.

Numerous requests / interactions from TWR are likely to induce an overload on certain key personnel contributing to the FMP. A refresher training has been performed to FMP staff on applicable procedures as well as raising TWR staff awareness on that aspect and request them to focus coordination with the FMP on essential items (a list of routine / non-essential items was drafted and communicated) only in such situations.

As a baseline, DSNA will strengthen the awareness of ATCOs in towers and approaches on the importance of aiming at precisely adhering to CTOT versus -5 minutes practice in case of departure ahead of CTOT.

Ultimately, many actions will be undertaken by DSNA in favour of the TWR-APP in 2023:

- Organisation of the REX (lesson learnt) ATFCM TWR-APP 2022 : work on the state of play and national coordination which led to the creation of a network of experts with a national POC for the TWR-APP;

- Participation to a Taxi Time WG at the European network level;

- Launch of a national communication campaign on ATFM in the course of the preparation of the TWR-APP summer 2023 season;

- On site tailor-made training delivered by FMP staff and Direction of operations headquarter staff at the request of the TWR units.

- Immersion days in FMPs organised by some FMPs for the benefit of TWR units.

5. ATC Pre-departure Delay

The share of unidentified delay reported by Charles de Gaulle (LFPG) was above 40% for more than 2 months in the year, preventing the calculation of this indicator for this airport.

The French NSA reports, based on the alternative data source from the airlines (Aircraft Operator Data Flow), following ATC pre-departure delay figures for Charles de Gaulle (2020: 0.48 min/dep; 2021: 0.62 min/dep; 2022: 0.92 min/dep). This data source however does not cover all flights so these figures are only available for information purposes.

The data quality at Marseille (LFML) and Toulouse (LFBO) has improved and the calculation of ATC pre-departure delay is possible for 2022.

The most significant deterioration was observed at Paris Orly (LFPO; 2021: 0.54 min/dep.; 2022: 1.25 min/dep.) resulting in the third highest among the SES monitored airports.

According to the French monitoring report: *Performance evolution is linked with the traffic increase evolution till 2020 and general ATC performance ; however 2022 figures are generally equivalent or better than 2019 figures and generally equivalent or better than during the whole RP2 with equivalent traffics, showing general progress on the additional time in terminal airspace phase at some French airports, except for LFMN and LFPG where traffic recovery has been stronger than expected.*

In 2022 we can see that despite the increase in traffic, CDG has improved its reporting ([DLY_89] + [DLY_OTHER]), particularly since May 2022, but unfortunately, the quality threshold for unidentified delays has never fallen below 40%, the 1st condition for publication. CDG currently mainly uses the code [ZZZ], which indicates that they have no information about the origin of the various delays. This situation will be examined in detailed with DSNA OPS department in order to improve this data provision in 2023.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at French airports in 2022 increased significantly at all French airports monitored for this indicator. The values range from 13.08 min/dep for Toulouse(LFBO) to 21.34 min/dep. for Paris Charles de Gaulle (LFPG).

The highest delays per flight at these airports were observed in Summer and December.

According to the French monitoring report: *An additional reason is also the impact of the en route delays due to the 4-FLIGHT implementation in Reims ACC, but also the impact of capacity shortages at Karlsruhe ACC.*

Staff shortages were also experienced at airports (either in France or abroad) which had a strong impact on this performance indicator.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|---------------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Lyon/Saint-Exupéry-LFLL | 0.03 | 0 | 0.04 | | | 84.5% | 84.1% | 86.8% | | | n/a | 0.22 | 0.32 | | | 11.98 | 11.88 | 19.99 | | |
| Marseille/Provence-LFML | 0.1 | 0.01 | 0.24 | | | 78.3% | 83.4% | 77.8% | | | n/a | n/a | 0.15 | | | 9.57 | 9.94 | 17.97 | | |
| Nice/Côte d'Azur-LFMN | 0.13 | 0.39 | 0.85 | | | 87.7% | 88.8% | 87.6% | | | 0.21 | 0.38 | 0.52 | | | 7.46 | 10.52 | 18.42 | | |
| Paris/Charles-De-Gaulle-LFPG | 0.11 | 0.22 | 0.45 | | | 95.4% | 94.7% | 93.9% | | | n/a | n/a | n/a | | | 12.85 | 17.09 | 21.34 | | |
| Paris/Orly-LFPO | 0.96 | 0.25 | 1.74 | | | 87.3% | 90.4% | 88.5% | | | n/a | 0.54 | 1.25 | | | 13.41 | 12.46 | 17.26 | | |
| Toulouse/Blagnac-LFBO | 0.16 | 0.26 | 0.06 | | | 90.2% | 89.0% | 89.1% | | | n/a | n/a | 0.30 | | | 8.89 | 8.28 | 13.08 | | |
| Agen-La Garenne-LFBA | 0 | 0 | 0 | | | 79.2% | 85.7% | n/a | | | - | - | - | | | - | - | - | | |
| Ajaccio-Napoléon-Bonaparte-LFKJ | 0 | 0.05 | 0.05 | | | 76.4% | 71.3% | 74.3% | | | - | - | - | | | - | - | - | | |
| Albert-Bray-LFAQ | 0 | 0 | 0 | | | 44.0% | 72.7% | 89.2% | | | - | - | - | | | - | - | - | | |
| Anncemy-Meythet-LFLP | 0.16 | 0.06 | 0.36 | | | 74.9% | 82.3% | 88.8% | | | - | - | - | | | - | - | - | | |
| Avignon-Caumont-LFMV | 0.23 | 0.02 | 0.28 | | | 78.7% | 84.8% | 87.5% | | | - | - | - | | | - | - | - | | |
| Bâle-Mulhouse-LFSB | 0.41 | 0.05 | 0.21 | | | 87.4% | 89.2% | 89.5% | | | - | - | - | | | - | - | - | | |
| Bastia-Poretta-LFKB | 0 | 0.06 | 0.12 | | | 80.7% | 87.0% | 88.4% | | | - | - | - | | | - | - | - | | |
| Beauvais-Tillé-LFOB | 0.05 | 0.01 | 0.01 | | | 72.6% | 89.3% | 89.6% | | | - | - | - | | | - | - | - | | |
| Bergerac-Roumanièrre-LFBE | 0 | 0.14 | 0 | | | 81.8% | 89.4% | 92.1% | | | - | - | - | | | - | - | - | | |
| Béziers-Vias-LFMU | 0 | 0 | 0 | | | 68.5% | 70.7% | 70.8% | | | - | - | - | | | - | - | - | | |
| Biarritz-Bayonne-Anglet-LFBZ | 0.05 | 0.15 | 0.2 | | | 88.8% | 93.0% | 92.1% | | | - | - | - | | | - | - | - | | |
| Bordeaux-Mérignac-LFBD | 0.77 | 0.07 | 0.17 | | | 91.5% | 89.7% | 89.4% | | | - | - | - | | | - | - | - | | |
| Brest-Bretagne-LFRB | 0 | 0.05 | 0 | | | 97.0% | 83.8% | 80.2% | | | - | - | - | | | - | - | - | | |
| Brive-Souillac-LFSL | 0 | 0 | 0 | | | 95.7% | 85.6% | 90.0% | | | - | - | - | | | - | - | - | | |
| Caen-Carpiquet-LFRK | 0 | 0 | 0 | | | 94.2% | 92.3% | 92.7% | | | - | - | - | | | - | - | - | | |
| Calvi-Sainte-Catherine-LFKC | 0.07 | 0.28 | 0.28 | | | 82.1% | 87.3% | 91.2% | | | - | - | - | | | - | - | - | | |
| Cannes-Mandelieu-LFMD | 2.97 | 3 | 2.86 | | | 93.4% | 90.2% | 94.9% | | | - | - | - | | | - | - | - | | |
| Carcassonne-Salvaza-LFMK | 0 | 0 | 0 | | | 81.8% | 84.3% | 86.4% | | | - | - | - | | | - | - | - | | |

| | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|------|------|------|--|--|-------|-------|-------|--|--|---|---|---|--|--|---|---|---|--|--|
| Châlons-Vatry-LFOK | 0.5 | 0.78 | 0.8 | | | 78.0% | 86.1% | 90.0% | | | - | - | - | | | - | - | - | | |
| Chambéry-Aix-les-Bains-LFLB | 1.67 | 0.08 | 0.94 | | | 89.3% | 82.5% | 82.0% | | | - | - | - | | | - | - | - | | |
| Châteauroux-Déols-LFLX | 0 | 0 | 0 | | | 86.7% | 84.9% | 85.9% | | | - | - | - | | | - | - | - | | |
| Clermont-Ferrand-Auvergne-LFLC | 0 | 0.01 | 0 | | | 81.5% | 86.9% | 83.7% | | | - | - | - | | | - | - | - | | |
| Deauville-Normandie-LFRG | 0 | 0 | 0.15 | | | 90.0% | 88.6% | 86.7% | | | - | - | - | | | - | - | - | | |
| Dinard-Pleurtuit-Saint-Malo-LFRD | 0 | 0 | 0 | | | 61.3% | 93.2% | 92.7% | | | - | - | - | | | - | - | - | | |
| Dôle-Tavaux-LFGJ | 0 | 0 | 0 | | | 59.4% | 77.5% | 84.4% | | | - | - | - | | | - | - | - | | |
| Figari-Sud Corse-LFKF | 0.18 | 1.24 | 0.34 | | | 80.3% | 76.8% | 86.4% | | | - | - | - | | | - | - | - | | |
| Grenoble-Isère-LFLS | 0.5 | 0.02 | 0.58 | | | 93.6% | 85.2% | 90.4% | | | - | - | - | | | - | - | - | | |
| Hyères-Le Palyvestre-LFTH | 0.06 | 0.04 | 1.28 | | | 81.1% | 88.3% | 88.9% | | | - | - | - | | | - | - | - | | |
| Istres-Le Tubé-LFMI | 0 | 0 | 0 | | | 66.7% | 68.4% | 82.3% | | | - | - | - | | | - | - | - | | |
| La Rochelle-Ile de Ré-LFBH | 0 | 0 | 0 | | | 81.3% | 89.2% | 84.4% | | | - | - | - | | | - | - | - | | |
| Lille-Lesquin-LFQQ | 0.33 | 0.01 | 0.05 | | | 86.1% | 87.7% | 90.7% | | | - | - | - | | | - | - | - | | |
| Limoges-Bellegarde-LFBL | 0.19 | 0.11 | 1.3 | | | 93.4% | 92.4% | 87.9% | | | - | - | - | | | - | - | - | | |
| Lorient-Lann Bihoué-LFRH | 0 | 0 | 0 | | | 88.8% | 88.3% | 87.1% | | | - | - | - | | | - | - | - | | |
| Lyon-Bron-LFLY | 0.01 | 0 | 0 | | | 89.5% | 83.8% | 87.4% | | | - | - | - | | | - | - | - | | |
| Metz-Nancy-Lorraine-LFJL | 0 | 0 | 0 | | | 82.5% | 84.6% | 91.4% | | | - | - | - | | | - | - | - | | |
| Montpellier-Méditerranée-LFMT | 0.01 | 0 | 0 | | | 75.1% | 84.6% | 84.9% | | | - | - | - | | | - | - | - | | |
| Nantes-Atlantique-LFRS | 0.24 | 0.08 | 0.05 | | | 91.6% | 91.3% | 91.9% | | | - | - | - | | | - | - | - | | |
| Nîmes-Garons-LFTW | 0 | 0.02 | 0.07 | | | 83.4% | 82.5% | 88.3% | | | - | - | - | | | - | - | - | | |
| Paris-Le Bourget-LFPB | 0.6 | 0.53 | 1.84 | | | 94.2% | 95.3% | 95.1% | | | - | - | - | | | - | - | - | | |
| Pau-Pyrénées-LFBP | 1.45 | 0 | 0 | | | 85.9% | 87.6% | 88.1% | | | - | - | - | | | - | - | - | | |
| Perpignan-Rivesaltes-LFMP | 0.07 | 0.03 | 0.01 | | | 77.4% | 77.0% | 83.7% | | | - | - | - | | | - | - | - | | |
| Poitiers-Biard-LFBI | 0 | 0 | 0 | | | 87.8% | 72.5% | 71.0% | | | - | - | - | | | - | - | - | | |
| Quimper-Pluguffan-LFRQ | 0 | 0 | 0 | | | 84.7% | 90.6% | 90.0% | | | - | - | - | | | - | - | - | | |
| Rennes-Saint-Jacques-LFRN | 0 | 0 | 0 | | | 78.7% | 86.7% | 89.2% | | | - | - | - | | | - | - | - | | |
| Rodez-Marcillac-LFCR | 0 | 0 | 0 | | | 88.5% | 82.5% | 85.2% | | | - | - | - | | | - | - | - | | |
| Rouen-LFOP | 0.13 | 0.27 | 0.04 | | | 74.2% | 83.9% | 79.2% | | | - | - | - | | | - | - | - | | |
| Saint-Etienne-Bouthéon-LFMH | 0 | 0 | 0 | | | 79.6% | 86.8% | 90.1% | | | - | - | - | | | - | - | - | | |
| Saint-Nazaire-Montoir-LFRZ | 0 | 0 | 0 | | | 97.2% | 94.7% | 94.7% | | | - | - | - | | | - | - | - | | |
| Strasbourg-Entzheim-LFST | 0.03 | 0.01 | 0 | | | 79.6% | 88.9% | 90.1% | | | - | - | - | | | - | - | - | | |
| Tarbes-Lourdes Pyrénées-LFBT | 0 | 0.02 | 0.04 | | | 90.5% | 91.3% | 89.7% | | | - | - | - | | | - | - | - | | |
| Tours-Val de Loire-LFOT | 0 | 0.11 | 9.32 | | | 50.0% | 0.0% | 66.7% | | | - | - | - | | | - | - | - | | |
| Toussus-le-Noble-LFPN | 0.97 | 0.89 | 2.94 | | | 77.7% | 88.3% | 89.3% | | | - | - | - | | | - | - | - | | |

FRANCE: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|---------------|--|---------------|---------------|---------------|-------------|-------|-----------------------|-------|--------------|--------|-----------------|-------|-------------------|--------|----------------------|-------|-----------------|-------|
| <ul style="list-style-type: none"> France ECZ represents 20.6% of the SES en route ANS actual costs in 2022 National currency: EUR Performance Plan: RP3 draft performance plan dated 28 October 2022 and found consistent as per Commission Decision (EU) 2023/176 of 14 December 2022 The final version of the plan was adopted and published by France in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | | | | | | | | | | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | | | | | | | | | | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | | | | | | | | | | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | | | | | | | | | | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | | | | | | | | | | | | | | | |
| France: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | |
| En route costs (nominal €) | 1 331 065 667 | 1 337 151 151 | 2 668 216 818 | 1 356 571 126 | 1 382 095 349 | 1 407 430 933 | | | | | | | | | | | | | | |
| Inflation % | 0.5% | 1.1% | | 1.2% | 1.3% | 1.4% | | | | | | | | | | | | | | |
| Inflation index (100 in 2017) | 103.9 | 105.1 | | 106.3 | 107.7 | 109.3 | | | | | | | | | | | | | | |
| Real en route costs (€2017) | 1 290 838 451 | 1 286 494 015 | 2 577 332 466 | 1 293 612 485 | 1 305 142 346 | 1 315 459 035 | | | | | | | | | | | | | | |
| Total en route service units | 8 547 246 | 10 969 138 | 19 516 384 | 16 989 960 | 21 020 185 | 22 464 259 | | | | | | | | | | | | | | |
| Real en route DUC per service unit (€2017) | 151.02 | 117.28 | 132.06 | 76.14 | 62.09 | 58.56 | | | | | | | | | | | | | | |
| France: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | |
| En route costs (nominal €) | 1 331 065 667 | 1 319 090 332 | 2 650 155 999 | 1 354 237 575 | | | | | | | | | | | | | | | | |
| Inflation % | 0.5% | 2.1% | | 5.9% | | | | | | | | | | | | | | | | |
| Inflation index (100 in 2017) | 103.9 | 106.1 | | 112.4 | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | 1 290 838 451 | 1 258 437 805 | 2 549 276 256 | 1 235 107 184 | | | | | | | | | | | | | | | | |
| Total en route service units | 8 547 246 | 11 180 520 | 19 727 767 | 18 897 985 | | | | | | | | | | | | | | | | |
| Real en route AUC per service unit (€2017) | 151.02 | 112.56 | 129.22 | 65.36 | | | | | | | | | | | | | | | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | |
| En route costs (nominal €) | in value | 0 | -18 060 819 | -18 060 819 | -2 333 551 | | | | | | | | | | | | | | | |
| | in % | - | -1.4% | -0.7% | -0.2% | | | | | | | | | | | | | | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | 4.7 p.p. | | | | | | | | | | | | | | | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.1 p.p. | 6.1 p.p. | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | in value | 0 | -28 056 210 | -28 056 210 | -58 505 301 | | | | | | | | | | | | | | | |
| | in % | - | -2.2% | -1.1% | -4.5% | | | | | | | | | | | | | | | |
| Total en route service units | in value | 0 | 211 382 | 211 382 | 1 908 025 | | | | | | | | | | | | | | | |
| | in % | - | +1.9% | +1.1% | +11.2% | | | | | | | | | | | | | | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -4.73 | -2.84 | -10.78 | | | | | | | | | | | | | | | |
| | in % | - | -4.0% | -2.1% | -14.2% | | | | | | | | | | | | | | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | | | | | | | | | | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TSUs Threshold -10% Threshold +10% Dead-band -2% Dead-band +2%</p> | | | | | | | | | | | | | | | | | |
| <p>In 2022, the en route AUC was -14.2% (or -10.78 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+11.2%) and lower than planned en route costs in real terms (-4.5%, or -58.5 M€2017). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.</p> | | | | | | | | | | | | | | | | | | | | |
| En route service units | | | | | | | | | | | | | | | | | | | | |
| The difference between actual and planned TSUs (+11.2%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DSNA) retaining an amount of +47.1 M€2017. | | | | | | | | | | | | | | | | | | | | |
| En route costs by entity | | | <p>Costs by entity at ECZ level (M€2017):</p> <table border="1"> <tr><td>Main ANSP</td><td>-5.2%</td></tr> <tr><td>Other ANSP(s)</td><td>-2.9%</td></tr> <tr><td>METSP(s)</td><td>+2.8%</td></tr> <tr><td>NSA/EUROCONTROL</td><td>-4.5%</td></tr> <tr><td>Total CZ</td><td>-4.5%</td></tr> </table> | | | | Main ANSP | -5.2% | Other ANSP(s) | -2.9% | METSP(s) | +2.8% | NSA/EUROCONTROL | -4.5% | Total CZ | -4.5% | | | | |
| Main ANSP | -5.2% | | | | | | | | | | | | | | | | | | | |
| Other ANSP(s) | -2.9% | | | | | | | | | | | | | | | | | | | |
| METSP(s) | +2.8% | | | | | | | | | | | | | | | | | | | |
| NSA/EUROCONTROL | -4.5% | | | | | | | | | | | | | | | | | | | |
| Total CZ | -4.5% | | | | | | | | | | | | | | | | | | | |
| <p>Actual real en route costs are -4.5% (-58.5 M€2017) lower than planned. This is the result of lower than planned costs for the main ANSP, DSNA (-5.2%, or -59.0 M€2017) and the MET service provider (-2.9%, or -1.9 M€2017) and higher than planned costs for the NSA/EUROCONTROL (+2.8%, or +2.4 M€2017).</p> | | | | | | | | | | | | | | | | | | | | |
| En route costs for the main ANSP (DSNA) at charging zone level | | | <p>Costs by nature for main ANSP (M€2017):</p> <table border="1"> <tr><td>Staff costs</td><td>-4.6%</td></tr> <tr><td>Other operating costs</td><td>-2.2%</td></tr> <tr><td>Depreciation</td><td>-17.0%</td></tr> <tr><td>Cost of capital</td><td>+4.6%</td></tr> <tr><td>Exceptional costs</td><td>-12.8%</td></tr> <tr><td>VFR exempted flights</td><td>-5.2%</td></tr> <tr><td>Total Main ANSP</td><td>-5.2%</td></tr> </table> | | | | Staff costs | -4.6% | Other operating costs | -2.2% | Depreciation | -17.0% | Cost of capital | +4.6% | Exceptional costs | -12.8% | VFR exempted flights | -5.2% | Total Main ANSP | -5.2% |
| Staff costs | -4.6% | | | | | | | | | | | | | | | | | | | |
| Other operating costs | -2.2% | | | | | | | | | | | | | | | | | | | |
| Depreciation | -17.0% | | | | | | | | | | | | | | | | | | | |
| Cost of capital | +4.6% | | | | | | | | | | | | | | | | | | | |
| Exceptional costs | -12.8% | | | | | | | | | | | | | | | | | | | |
| VFR exempted flights | -5.2% | | | | | | | | | | | | | | | | | | | |
| Total Main ANSP | -5.2% | | | | | | | | | | | | | | | | | | | |
| <p>Significantly lower than planned en route costs in real terms for DSNA in 2022 (-5.2%, or -59.0 M€2017) result mainly from a higher than planned inflation:</p> <ul style="list-style-type: none"> - Lower than planned staff costs (-4.6%) mainly due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are in line with the planned (+0.9%). - Lower than planned other operating costs (-2.2%) in real terms but higher in nominal terms (+3.5%) reported to be mainly due to the increase in energy prices, - Significantly lower than planned depreciation costs (-17.0%), "mainly in relation with the postponement of commissioning from 2022 to 2023, late commissioning in 2022 of the operations of 2021 and the transfer of part of the investment costs to project-related OPEX costs" as reported in the additional information to the June 2023 reporting tables, - Higher than planned cost of capital (+4.6%), mainly due to a higher than planned asset base and higher average interest on debt, - Significantly lower than planned deduction for VFR exempted flights (-12.8%). <p>Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).</p> | | | | | | | | | | | | | | | | | | | | |

FRANCE: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

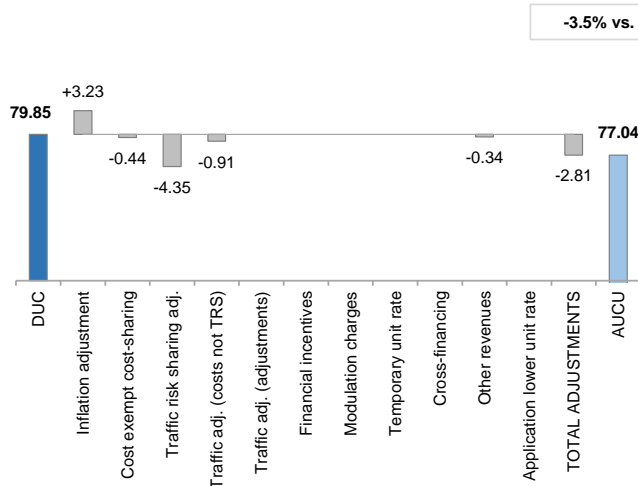
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

France 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 79.85 |
| DUC to be charged retroactively | 0.00 |
| DUC | 79.85 |
| Inflation adjustment | 3.23 |
| Cost exempt from cost-sharing | -0.44 |
| Traffic risk sharing adjustment | -4.35 |
| Traffic adj. (costs not TRS) | -0.91 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -0.34 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -2.81 |
| AUCU | 77.04 |
| AUCU vs. DUC | -3.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

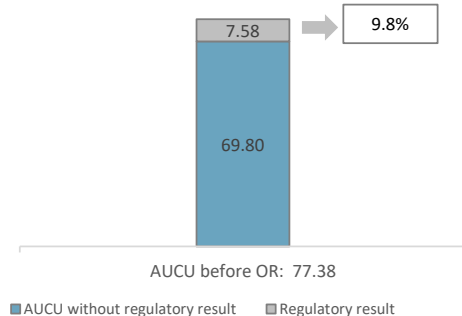
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|---------------|--------------|
| by item | New and existing investments | -11 550 | -0.61 |
| | Competent authorities and qualified entities costs | -665 | -0.04 |
| | Eurocontrol costs | 3 019 | 0.16 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 941 | 0.05 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -8 255 | -0.44 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenues)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|------------------|--------------|
| DSNA | 140 208 | 7.42 |
| METSP(s) | € '000 | €/SU |
| France MET | 2 955 | 0.16 |
| Total charging zone | 143 164 | 7.58 |
| Actual cost for users*** | 1 462 264 | 77.38 |
| Regulatory result (% AUCU) | 9.8% | 9.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (77.04 €) is -3.5% lower than the nominal DUC (79.85 €). The difference between these two figures (-2.81 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.23 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.44 €/SU);
- the deduction of the traffic risk sharing adjustments (-4.35 €/SU);
- the deduction of the traffic adjustment (-0.91 €/SU) for the costs not subject to traffic risk sharing to be reimbursed in future years; and
- the deduction of the other revenues (-0.34 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 9.8%.

FRANCE: En route main ANSP (DSNA)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

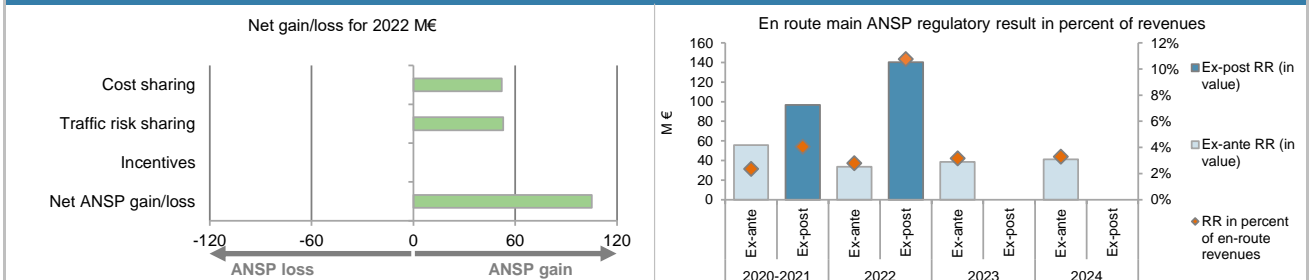
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 12 493 | 5 603 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 10 038 | 57 843 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -12 464 | -11 321 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 10 067 | 52 125 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.1% | 11.2% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 2 367 281 | 1 204 247 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 25 640 | 52 987 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 35 707 | 105 111 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DSNA planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|------------------|------------------|------------------|------------------|------------------|------------------|
| Total asset base | 1 589 985 | 2 353 579 | 3 943 563 | 2 557 204 | 2 301 959 | 2 005 386 |
| Proportion of financing through equity (in %) | 13% | 5% | 8% | 8% | 12% | 17% |
| RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| RoE (in value) | 31 213 | 24 500 | 55 713 | 33 669 | 38 654 | 41 207 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 31 213 | 24 500 | 55 713 | 33 669 | 38 654 | 41 207 |
| Revenue for the en route charging zone | 1 181 681 | 1 185 600 | 2 367 281 | 1 204 247 | 1 228 395 | 1 253 531 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.6% | 2.1% | 2.4% | 2.8% | 3.1% | 3.3% |
| Ex-ante RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| DSNA actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 1 589 985 | 2 262 020 | 3 852 005 | 2 466 470 | | |
| Proportion of financing through equity (in %) | 13% | 7% | 9% | 9% | | |
| RoE pre-tax rate (in %) | 14.9% | 19.7% | 16.9% | 16.2% | | |
| RoE (in value) | 31 213 | 29 636 | 60 849 | 35 097 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 35 707 | 35 707 | 105 111 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 31 213 | 65 344 | 96 557 | 140 208 | | |
| Revenue for the en route charging zone | 1 181 681 | 1 208 814 | 2 390 495 | 1 303 755 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.6% | 5.4% | 4.0% | 10.8% | | |
| Ex-post RoE pre-tax rate (in %) | 14.9% | 43.3% | 26.8% | 64.8% | | |

13. Focus on the main ANSP regulatory result on en route activity



DSNA net gain on activity in the France en route charging zone in the year 2022

DSNA reported a net gain of +105.1 M€, as a combination of a gain of +52.1 M€ arising from the cost sharing mechanism, with a gain of +53.0 M€ arising from the traffic risk sharing mechanism.

DSNA overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+105.1 M€) and the actual RoE (+35.1 M€) amounts to +140.2 M€ (10.8% of the en route revenues). The resulting ex-post rate of return on equity is 64.8%, which is higher than the 16.2% planned in the PP.

FRANCE: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| France MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 45 | 45 | 90 | 45 | 46 | 46 |
| Revenue for the en route charging zone | 67 575 | 68 442 | 136 017 | 68 410 | 69 385 | 69 379 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Ex-ante RoE pre-tax rate (in %) | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| France MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 45 | 419 | 464 | 2 955 | | |
| Revenue for the en route charging zone | 67 575 | 68 862 | 136 437 | 72 241 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 0.6% | 0.3% | 4.1% | | |
| Ex-post RoE pre-tax rate (in %) | 0.1% | 1.1% | 0.6% | 7.5% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for France (METEO France) corresponds to 4.1% of the en route revenues. The ex-post RoE 7.5% is higher than planned 0.1%. | | | | | | |

FRANCE ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|-----------------|---------------|---|---------------|---------------|--------------|
| <ul style="list-style-type: none"> France zone 1 TCZ represents 4.0% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 2 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 2 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| France zone 1: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 56 623 602 | 57 425 761 | 114 049 362 | 58 939 208 | 60 366 031 | 61 594 406 |
| Inflation % | 0.5% | 1.1% | | 1.2% | 1.3% | 1.4% |
| Inflation index (100 in 2017) | 103.9 | 105.1 | | 106.3 | 107.7 | 109.3 |
| Real terminal costs (€2017) | 54 964 503 | 55 348 158 | 110 312 661 | 56 375 904 | 57 265 874 | 57 925 436 |
| Total terminal service units | 267 166 | 313 933 | 581 099 | 492 532 | 560 294 | 592 207 |
| Real terminal DUC per service unit (€2017) | 205.73 | 176.31 | 189.83 | 114.46 | 102.21 | 97.81 |
| France zone 1: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 56 623 602 | 52 910 714 | 109 534 315 | 53 106 117 | | |
| Inflation % | 0.5% | 2.1% | | 5.9% | | |
| Inflation index (100 in 2017) | 103.9 | 106.1 | | 112.4 | | |
| Real terminal costs (€2017) | 54 964 503 | 50 542 382 | 105 506 885 | 48 455 738 | | |
| Total terminal service units | 267 166 | 324 427 | 591 593 | 517 517 | | |
| Real terminal AUC per service unit (€2017) | 205.73 | 155.79 | 178.34 | 93.63 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -4 515 047 | -4 515 047 | -5 833 091 | |
| | in % | - | -7.9% | -4.0% | -9.9% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | | 4.7 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.1 p.p. | | 6.1 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -4 805 776 | -4 805 776 | -7 920 166 | |
| | in % | - | -8.7% | -4.4% | -14.0% | |
| Total terminal service units | in value | 0 | 10 494 | 10 494 | 24 985 | |
| | in % | - | +3.3% | +1.8% | +5.1% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -20.52 | -11.49 | -20.83 | |
| | in % | - | -11.6% | -6.1% | -18.2% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+5.1%</p> | | | |
| <p>In 2022, the terminal AUC was -18.2% (or -20.83 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-14.0%, or -7.9 M€2017) and significantly higher than planned TNSUs (+5.1%). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.</p> | | | | | | |
| Terminal charging zone 1 service units | | | | | | |
| <p>The difference between actual and planned TNSUs (+5.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DSNA) retaining an amount of +1.4 M€2017.</p> | | | | | | |
| Terminal charging zone 1 costs by entity | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP -14.4%</p> <p>Other ANSP(s) -6.7%</p> <p>METSP(s) -23.3%</p> <p>NSA -14.0%</p> <p>Total CZ -14.0%</p> | | | |
| <p>Actual real terminal costs are -14.0% (-7.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DSNA (-14.4%, or -7.6 M€2017), the MET service provider (-6.7%, or -0.2 M€2017) and the NSA (-23.3%, or -0.1 M€2017).</p> | | | | | | |
| Terminal charging zone 1 costs for the main ANSP (DSNA) at charging zone level | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -1.5%</p> <p>Other operating costs -18.6%</p> <p>Depreciation -33.0%</p> <p>Cost of capital -27.6%</p> <p>Exceptional costs +34.2%</p> <p>VFR exempted flights -14.4%</p> <p>Total Main ANSP -14.4%</p> | | | |
| <p>Significantly lower than planned terminal costs in real terms for DSNA in 2022 (-14.4%, or -7.6 M€2017) mainly resulting from higher than planned inflation:</p> <ul style="list-style-type: none"> Slightly lower than planned staff costs (-1.5%) due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are higher than planned (+4.2%), Significantly lower than planned other operating costs in real terms (-18.6%) due to lower operational expenditure associated to investments, Significantly lower than planned depreciation costs (-33.0%) "due to the redefinition and prioritization of SYSAT programme with a new ATM system for major airports: iATS project at Orly in 2024 and AVISO system at CDG. The SYSAT contract has been redefined end 2021 / beginning 2022 and some 2022 planned expenditures postponed accordingly" as reported in the NSA Monitoring Report 2022, Significantly lower than planned cost of capital (-27.6%), "in line with the decrease of the depreciation costs" as reported in the additional information to the June 2023 reporting tables, Significantly higher than planned deduction for VFR exempted flights (+34.2%). | | | | | | |
| <p>Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).</p> | | | | | | |

FRANCE ZONE 1: Terminal charging zone

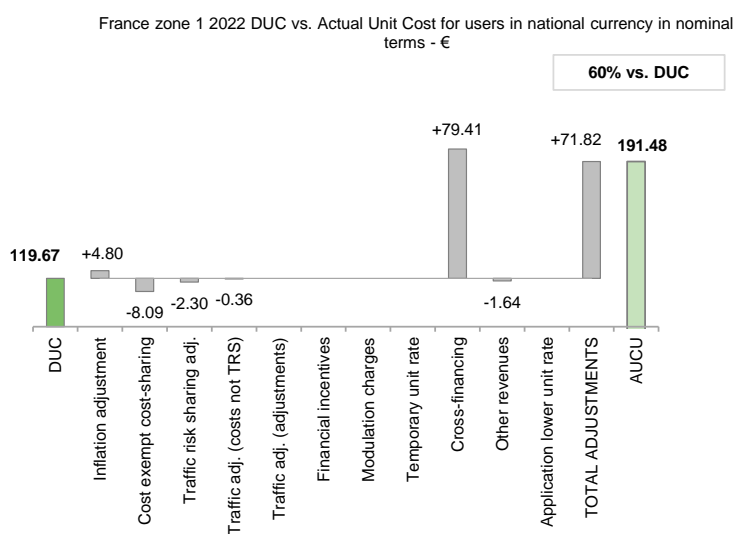
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 119.67 |
| DUC to be charged retroactively | 0.00 |
| DUC | 119.67 |
| Inflation adjustment | 4.80 |
| Cost exempt from cost-sharing | -8.09 |
| Traffic risk sharing adjustment | -2.30 |
| Traffic adj. (costs not TRS) | -0.36 |
| Traffic adj. (adjustments)* | 0.00 |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | 0.00 |
| Cross-financing | 79.41 |
| Other revenues | -1.64 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 71.82 |
| AUCU | 191.48 |
| AUCU vs. DUC | 60.0% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

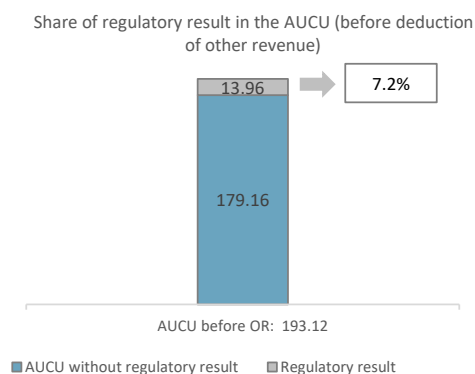
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|---------------|--------------|
| New and existing investments | -4 210 | -8.14 |
| Competent authorities and qualified entities costs | -67 | -0.13 |
| Eurocontrol costs | 0 | 0.00 |
| Pension costs | 0 | 0.00 |
| Interest on loans | 89 | 0.17 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | -4 188 | -8.09 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| DSNA | 6 976 | 13.48 |
| METSP(s) | € '000 | €/SU |
| France zone 1-MET | 248 | 0.48 |
| Total charging zone | 7 224 | 13.96 |
| Actual cost for users*** | 99 945 | 193.12 |
| Regulatory result (% AUCU) | 7.2% | 7.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (191.48 €) is +60.0% higher than the nominal DUC (119.67 €). The difference between these two figures (+71.82 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+4.80 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-8.09 €/SU);
- the deduction of the traffic risk sharing adjustments (-2.30 €/SU);
- the deduction of the traffic adjustment (-0.36 €/SU) for the costs not subject to traffic risk sharing;
- the cross-financing between the two TCZ (+79.41 €/SU); and
- the deduction of the other revenues (-1.64 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 7.2%.

FRANCE ZONE 1: Terminal main ANSP (DSNA)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

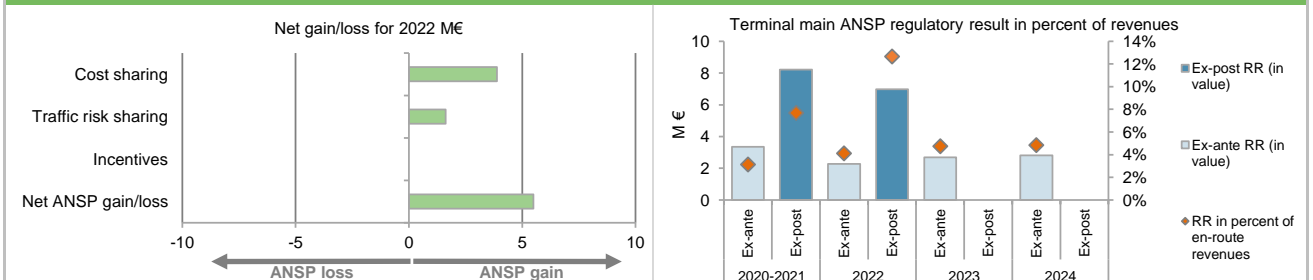
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 4 506 | 5 679 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 407 | 2 330 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -2 060 | -4 128 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 853 | 3 881 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.8% | 5.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 106 793 | 55 312 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 929 | 1 616 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 4 781 | 5 497 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DSNA planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|----------------|---------------|---------------|---------------|
| Total asset base | 118 981 | 158 658 | 277 639 | 176 689 | 167 138 | 152 019 |
| Proportion of financing through equity (in %) | 11% | 4% | 7% | 8% | 12% | 16% |
| RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| RoE (in value) | 1 872 | 1 479 | 3 351 | 2 279 | 2 683 | 2 808 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 1 872 | 1 479 | 3 351 | 2 279 | 2 683 | 2 808 |
| Revenue for the terminal charging zone | 52 996 | 53 797 | 106 793 | 55 312 | 56 692 | 57 920 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.5% | 2.7% | 3.1% | 4.1% | 4.7% | 4.8% |
| Ex-ante RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| DSNA actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 118 981 | 141 716 | 260 697 | 142 262 | | |
| Proportion of financing through equity (in %) | 11% | 5% | 8% | 6% | | |
| RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.2% | 16.2% | | |
| RoE (in value) | 1 872 | 1 561 | 3 433 | 1 479 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 4 781 | 4 781 | 5 497 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 1 872 | 6 342 | 8 214 | 6 976 | | |
| Revenue for the terminal charging zone | 52 996 | 54 073 | 107 069 | 55 130 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.5% | 11.7% | 7.7% | 12.7% | | |
| Ex-post RoE pre-tax rate (in %) | 14.9% | 85.8% | 41.1% | 76.6% | | |

13. Focus on main ANSP regulatory result on terminal activity



DSNA net gain on activity in the France terminal charging zone 1 in the year 2022

DSNA reported a net gain of +5.5 M€, as a combination of a gain of +3.9 M€ arising from the cost sharing mechanism, with a gain of +1.6 M€ arising from the traffic risk sharing mechanism.

DSNA overall regulatory results (RR) for the terminal charging zone 1 activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+5.5 M€) and the actual RoE (+1.5 M€) amounts to +7.0 M€ (12.7% of the terminal revenues in the Terminal Charging Zone 1). The resulting ex-post rate of return on equity is 76.6%, which is higher than the 16.2% planned in the PP.

FRANCE ZONE 1: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| France zone 1-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 2 | 2 | 4 | 2 | 2 | 2 |
| Revenue for the terminal charging zone | 3 300 | 3 342 | 6 642 | 3 341 | 3 388 | 3 388 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Ex-ante RoE pre-tax rate (in %) | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| France zone 1-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 2 | 16 | 18 | 248 | | |
| Revenue for the terminal charging zone | 3 300 | 3 363 | 6 663 | 3 500 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 0.5% | 0.3% | 7.1% | | |
| Ex-post RoE pre-tax rate (in %) | 0.1% | 0.1% | 0.1% | 13.5% | | |
| Total other ANSP overall regulatory result (RR) for the terminal charging zone 1 activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone 1 for France (France zone 1-MET / METEO France) corresponds to (+7.1%) of the terminal revenues in the terminal Charging Zone 1. The ex-post RoE (+13.5%) is higher than planned (+0.1%). | | | | | | |

FRANCE ZONE 2: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> France zone 2 TCZ represents 14.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 56 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 52 Airports with more than 80,000 IFR mvmts: 4 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| France zone 2: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 192 084 499 | 190 365 182 | 382 449 681 | 190 383 772 | 191 305 181 | 192 111 965 |
| Inflation % | 0.5% | 1.1% | | 1.2% | 1.3% | 1.4% |
| Inflation index (100 in 2017) | 103.9 | 105.1 | | 106.3 | 107.7 | 109.3 |
| Real terminal costs (€2017) | 185 717 482 | 182 368 576 | 368 086 058 | 180 553 386 | 179 399 599 | 178 028 515 |
| Total terminal service units | 244 439 | 314 005 | 558 444 | 508 702 | 529 498 | 557 181 |
| Real terminal DUC per service unit (€2017) | 759.77 | 580.78 | 659.13 | 354.93 | 338.81 | 319.52 |
| France zone 2: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 192 084 499 | 200 248 171 | 392 332 669 | 194 501 686 | | |
| Inflation % | 0.5% | 2.1% | | 5.9% | | |
| Inflation index (100 in 2017) | 103.9 | 106.1 | | 112.4 | | |
| Real terminal costs (€2017) | 185 717 482 | 190 128 162 | 375 845 644 | 175 723 094 | | |
| Total terminal service units | 244 439 | 316 501 | 560 940 | 459 449 | | |
| Real terminal AUC per service unit (€2017) | 759.77 | 600.72 | 670.03 | 382.46 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | 9 882 989 | 9 882 989 | 4 117 914 | |
| | in % | - | +5.2% | +2.6% | +2.2% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | | 4.7 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.1 p.p. | | 6.1 p.p. | |
| Real terminal costs (€2017) | in value | 0 | 7 759 586 | 7 759 586 | -4 830 292 | |
| | in % | - | +4.3% | +2.1% | -2.7% | |
| Total terminal service units | in value | 0 | 2 496 | 2 496 | -49 253 | |
| | in % | - | +0.8% | +0.4% | -9.7% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | 19.94 | 10.90 | 27.54 | |
| | in % | - | +3.4% | +1.7% | +7.8% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was +7.8% (or +27.54 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-9.7%) and lower than planned terminal costs in real terms (-2.7%, or -4.8 M€2017). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal charging zone 2 service units</p> <p>The difference between actual and planned TNSUs (-9.7%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DSNA) bearing a loss of -6.6 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal charging zone 2 costs by entity</p> <p>Actual real terminal costs are -2.7% (-4.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DSNA (-1.7%, or -2.8 M€2017) and the MET service provider (-15.4%, or -2.3 M€2017) and higher costs for the NSA (+28.1%, or +0.3 M€2017).</p> | | | | | | |
| <p>Terminal charging zone 2 costs for the main ANSP (DSNA) at charging zone level</p> <p>Slightly lower than planned terminal costs in real terms for DSNA in 2022 (-1.7%, or -2.8 M€2017) mainly resulting from higher than planned inflation:</p> <ul style="list-style-type: none"> - Lower than planned staff costs (-2.6%) due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are higher than planned (+2.9%), - Higher than planned other operating costs (+3.3%) in real terms and (+9.2%) in nominal terms, reported to be mainly due to the increase in energy prices, - Lower than planned depreciation costs (-3.0%), - Higher than planned cost of capital (+3.6%) due to a higher than planned asset base and higher average interest on debt. - Higher than planned deduction for VFR exempted flights (+4.2%). <p>Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

FRANCE ZONE 2: Terminal charging zone

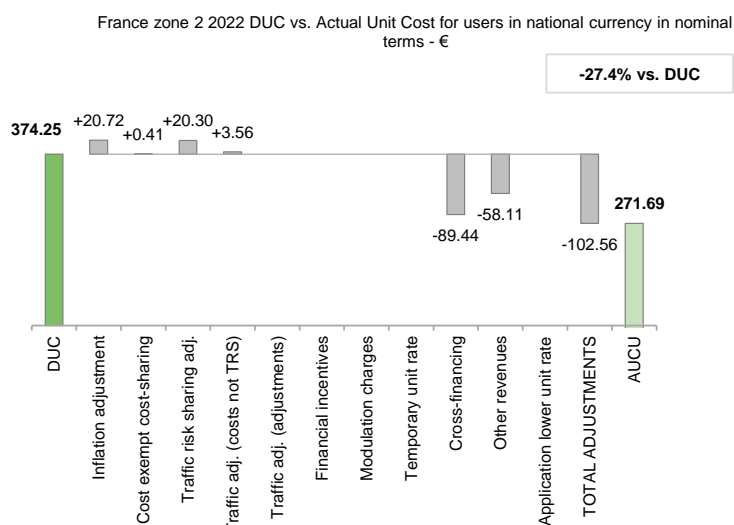
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 377.60 |
| DUC to be charged retroactively | -3.34 |
| DUC | 374.25 |
| Inflation adjustment | 20.72 |
| Cost exempt from cost-sharing | 0.41 |
| Traffic risk sharing adjustment | 20.30 |
| Traffic adj. (costs not TRS) | 3.56 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | -89.44 |
| Other revenues | -58.11 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -102.56 |
| AUCU | 271.69 |
| AUCU vs. DUC | -27.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

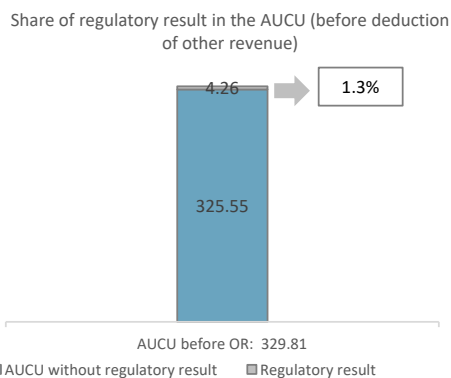
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|------------|-------------|
| by item | New and existing investments | -120 | -0.26 |
| | Competent authorities and qualified entities costs | 304 | 0.66 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 6 | 0.01 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | 190 | 0.41 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| DSNA | -355 | -0.77 |
| METSP(s) | | |
| France zone 2-MET | 2 311 | 5.03 |
| Total charging zone | 1 956 | 4.26 |
| Actual cost for users*** | 151 530 | 329.81 |
| Regulatory result (% AUCU) | 1.3% | 1.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (271.69 €) is -27.4% lower than the nominal DUC (374.25 €). The difference between these two figures (-102.56 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+20.72 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+0.41 €/SU);
- the addition of the traffic risk sharing adjustments (+20.30 €/SU);
- the addition of the traffic adjustment (+3.56 €/SU) for the costs not subject to traffic risk sharing;
- the cross-financing between the two TCZ (-89.44 €/SU); and
- the deduction of the other revenues (-58.11 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 1.3%.

FRANCE ZONE 2: Terminal main ANSP (DSNA)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

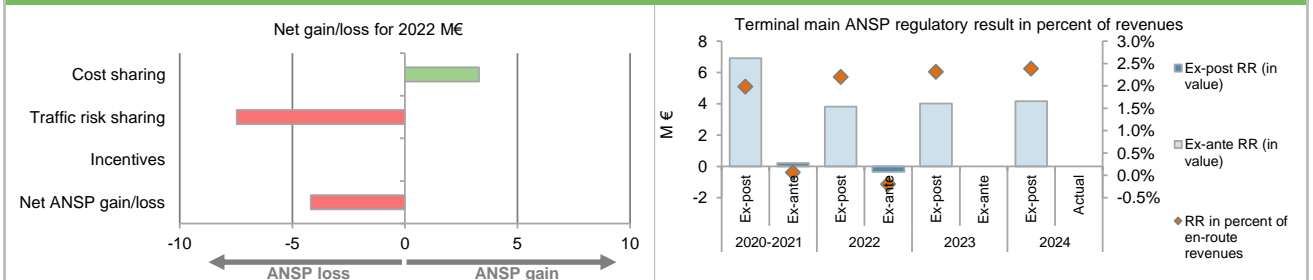
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -9 945 | -5 670 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 544 | 8 797 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -458 | 161 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -8 858 | 3 288 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.4% | -9.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 348 678 | 173 479 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 559 | -7 468 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | -7 299 | -4 180 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DSNA planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 170 577 | 239 315 | 409 892 | 255 632 | 234 858 | 213 821 |
| Proportion of financing through equity (in %) | 15% | 6% | 10% | 9% | 13% | 16% |
| RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| RoE (in value) | 3 843 | 3 068 | 6 911 | 3 812 | 4 025 | 4 166 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 3 843 | 3 068 | 6 911 | 3 812 | 4 025 | 4 166 |
| Revenue for the terminal charging zone | 175 226 | 173 452 | 348 678 | 173 479 | 174 176 | 174 984 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.2% | 1.8% | 2.0% | 2.2% | 2.3% | 2.4% |
| Ex-ante RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.1% | 16.2% | 13.7% | 11.9% |
| DSNA actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 170 576 | 248 540 | 419 116 | 261 285 | | |
| Proportion of financing through equity (in %) | 15% | 7% | 10% | 9% | | |
| RoE pre-tax rate (in %) | 14.9% | 21.1% | 17.4% | 16.2% | | |
| RoE (in value) | 3 843 | 3 673 | 7 516 | 3 825 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | -7 299 | -7 299 | -4 180 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 3 843 | -3 627 | 217 | -355 | | |
| Revenue for the terminal charging zone | 175 226 | 176 098 | 351 324 | 174 969 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.2% | -2.1% | 0.1% | -0.2% | | |
| Ex-post RoE pre-tax rate (in %) | 14.9% | -20.9% | 0.5% | -1.5% | | |

13. Focus on main ANSP regulatory result on terminal activity



DSNA net gain on activity in the France terminal charging zone 2 in the year 2022

DSNA reported a net loss of -4.2 M€, as a combination of a gain of +3.3 M€ arising from the cost sharing mechanism, with a loss of -7.5 M€ arising from the traffic risk sharing mechanism.

DSNA overall regulatory results (RR) for the terminal charging zone 2 activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-4.2 M€) and the actual RoE (+3.8 M€) amounts to -0.4 M€ (-0.2% of the terminal revenues in the Terminal Charging Zone 2).

FRANCE ZONE 2: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| France zone 2-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 10 | 10 | 21 | 10 | 11 | 11 |
| Revenue for the terminal charging zone | 15 629 | 15 830 | 31 459 | 15 822 | 16 048 | 16 046 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| Ex-ante RoE pre-tax rate (in %) | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| France zone 2-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 10 | 794 | 804 | 2 311 | | |
| Revenue for the terminal charging zone | 15 629 | 15 749 | 31 378 | 16 269 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 5.0% | 2.6% | 14.2% | | |
| Ex-post RoE pre-tax rate (in %) | 0.1% | 8.8% | 4.5% | 29.3% | | |
| Total other ANSP overall regulatory result (RR) for the terminal charging zone 2 activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone 2 for France (France zone 2-MET/METEO France) corresponds to 14.2% of the terminal revenues in the Terminal Charging Zone 2. The ex-post RoE (+29.3%) is higher than planned (+0.1%). | | | | | | |

FRANCE: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|------------------|---------------|----------------|------------------|---------------|---------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: France | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: France zone 1 Terminal charging zone 2: France zone 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| France: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 1 290 838 451 | 1 286 494 015 | 2 577 332 466 | 1 293 612 485 | 1 305 142 346 | 1 315 459 035 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 240 681 985 | 237 716 734 | 478 398 719 | 236 929 290 | 236 665 473 | 235 953 951 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 1 531 520 436 | 1 524 210 749 | 3 055 731 185 | 1 530 541 774 | 1 541 807 818 | 1 551 412 986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.3% | 84.4% | 84.3% | 84.5% | 84.7% | 84.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| France: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 1 290 838 451 | 1 258 437 805 | 2 549 276 256 | 1 235 107 184 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 240 681 985 | 240 670 544 | 481 352 529 | 224 178 832 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 1 531 520 436 | 1 499 108 349 | 3 030 628 785 | 1 459 286 015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.3% | 83.9% | 84.1% | 84.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -25 102 400 | -25 102 400 | -71 255 759 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -1.6% | -0.8% | -4.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.5 p.p. | -0.2 p.p. | 0.1 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 84% | 16% | Actual | 84% | 16% | 2021 | Determined | 84% | 16% | Actual | 84% | 16% | 2020-2021 | Determined | 84% | 16% | Actual | 84% | 16% | 2022 | Determined | 85% | 15% | Actual | 85% | 15% | 2023 | Determined | 85% | 15% | Actual | 85% | 15% | 2024 | Determined | 85% | 15% | Actual | 85% | 15% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -4.7% (-71.3 M€2017) lower than planned, as en route costs are lower than planned by -58.5 M€2017 and terminal costs are lower than planned by -12.8 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (84.6%) is in line with the PP for 2022 (84.5%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DSNA | 39 760 | 1 433 038 | 2.8% | 146 830 | 1 533 855 | 9.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| France MET | 58 | 87 573 | 0.1% | 5 515 | 92 010 | 6.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 39 818 | 1 520 611 | 2.6% | 152 344 | 1 625 865 | 9.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of France covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +152.3 M€ (+143.2 M€ for en route and +9.2 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to +9.4% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (2.6% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>France gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>France gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>2.6%</td> </tr> <tr> <td>Ex-post</td> <td>9.4%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 2.6% | Ex-post | 9.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 2.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 9.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Germany

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GERMANY

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| DFS | 90 | C | C | D | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All five EoSM components of the ANSP meet the RP3 target level. The level was maintained compared with 2021. | | | | | | |

MUAC

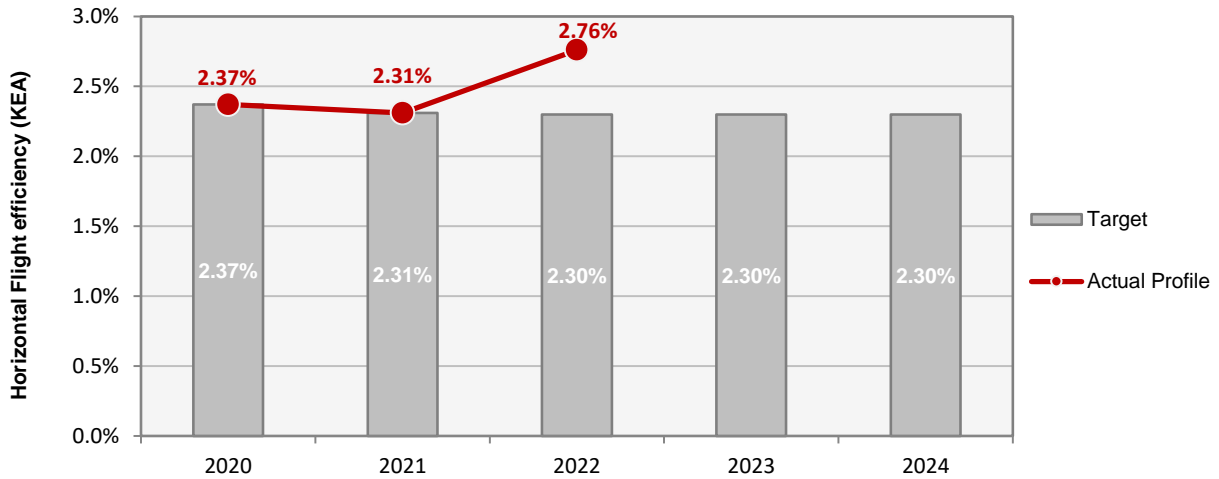
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| MUAC | 95 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> <p>MUAC oversight is exercised in a coordinated manner by the Four States' NSAs (Belgium, Germany, Luxembourg and the Netherlands) over which territories and airspace MUAC provides air traffic services. Safety performance of MUAC is reported separately of these four States as it has been assessed and agreed by the four NSAs.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet the RP3 target levels. Further improvements on three questions were observed during 2022 compared with 2021.</p> <p>IMPORTANT: EASA/European Commission did not receive the verified questionnaire from the NSA on time. This is an important step to receive confirmation that the self-evaluated questionnaire by the ANSP has been actually verified. It should be sent in due time to allow proper and timely drafting of the Monitoring Report.</p> | | | | | | |

GERMANY

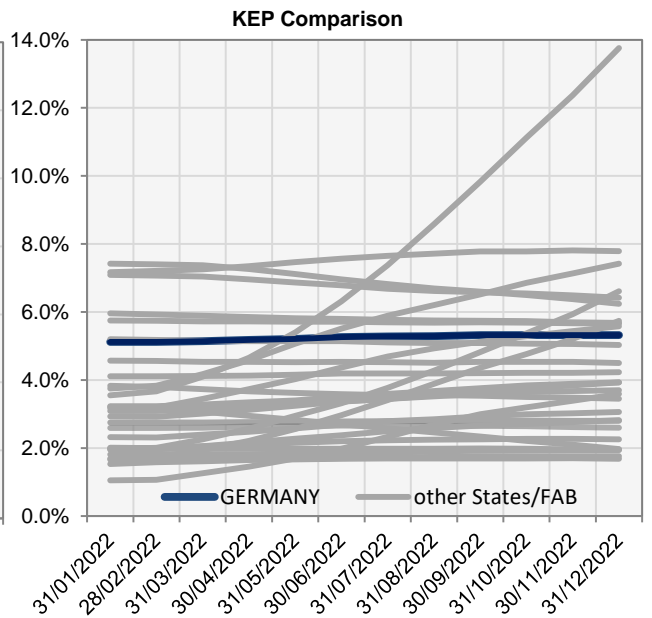
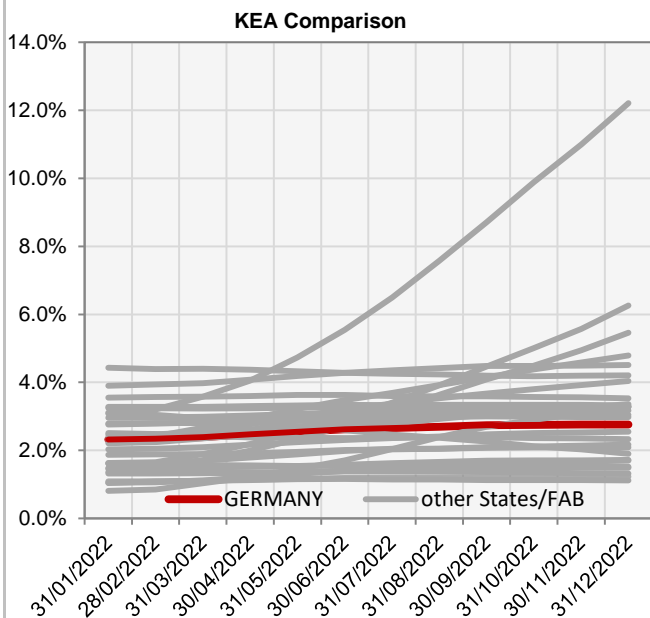
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.37% | 2.31% | 2.30% | 2.30% | 2.30% |
| Actual performance | 2.37% | 2.31% | 2.76% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.32% | 2.34% | 2.39% | 2.47% | 2.55% | 2.62% | 2.66% | 2.69% | 2.74% | 2.75% | 2.76% | 2.76% |
| KEP | 5.12% | 5.12% | 5.14% | 5.18% | 5.21% | 5.26% | 5.28% | 5.29% | 5.32% | 5.32% | 5.32% | 5.32% |
| KES | 4.84% | 4.85% | 4.88% | 4.92% | 4.95% | 4.99% | 5.00% | 5.02% | 5.05% | 5.05% | 5.05% | 5.05% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Germany identifies a total of 16 airports as subject to RP3 monitoring (15 since the closure of Berlin Tegel) However, in accordance with IR (EU) 2019/317 and the traffic figures, only 8 of those airports must be monitored for additional taxi-out and ASMA times (7 since the closure of Berlin Tegel)

The Airport Operator Data Flow, necessary for the monitoring of the additional times, is established for the 8 airports required and the monitoring of all environment indicators can be performed.

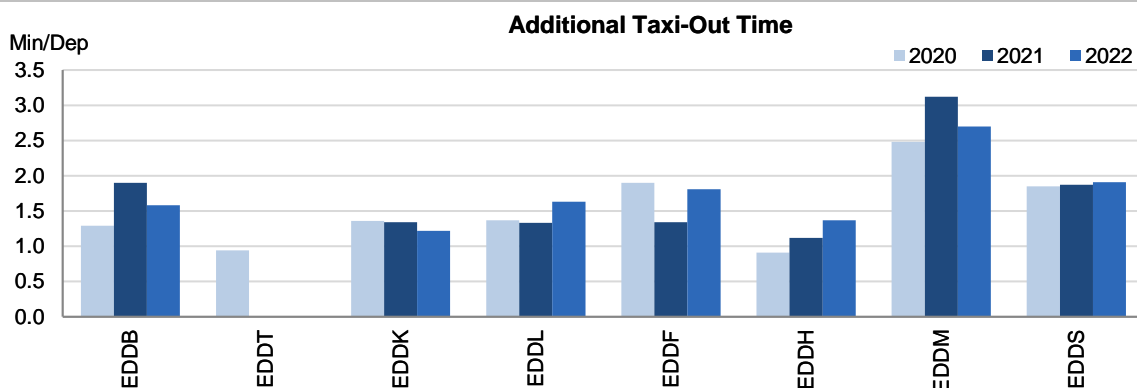
In 2022, traffic at the ensemble of German airports under monitoring was still 30% lower with respect to 2019, even if 53% higher than in 2021. The traffic recovery at Munich (EDDM), Hamburg (EDDH) and Dusseldorf (EDDL) is worse than at most European airports, with traffic still at 62 to 69% of 2019 levels.

Additional times at the ensemble of the 8 German airports, has decreased in 2022 with respect to 2021.

The share of CDO flights stayed rather low and decreased even further to 12.7% in 2022.

Flight Operation at Berlin-Tegel were suspended on 08/11/2020 and the airport was finally decommissioned on 05/05/2021.

2. Additional Taxi-Out Time



In global, the additional taxi-out times in 2022 at German airports was 7% higher than in 2021. Evolution at each airport is different but without any drastic changes at any of these airports. Only Munich (EDDM; 2019: 3.82 min/dep.; 2020: 2.48 min/dep.; 2021: 3.12 min/dep.; 2022: 2.7 min/dep.), regardless of a slight decrease, exceeded the 2022 average additional taxi-out time for the SES monitored airports of 2.52 min/dep.

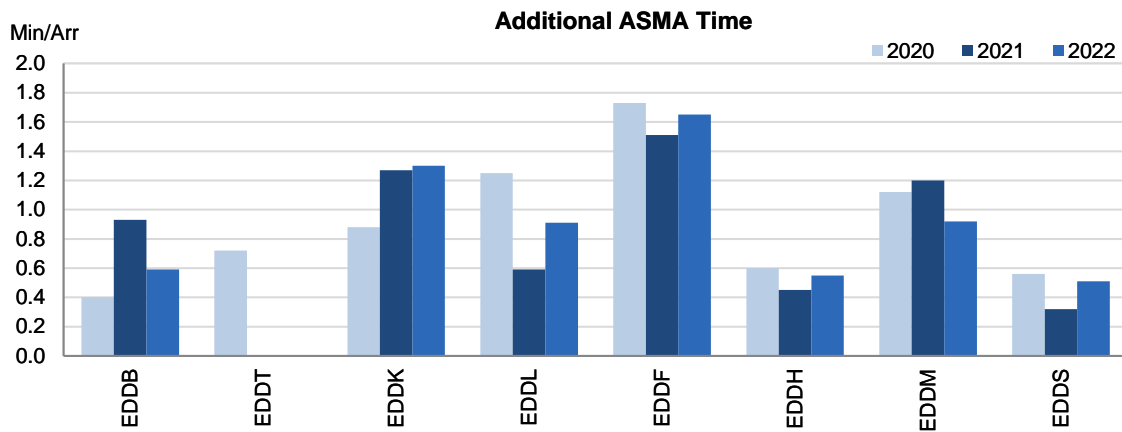
According to the German monitoring report: *This data is not collected by DFS. No initiatives were/are planned.*

Most of the movement/taxi-areas at german airports are outside of the responsibility of DFS.

The NSA is monitoring the KPA Environment by regularly checking the current performance by using the existing dashboards.

The German monitoring report takes the values from the SES DB (<https://www.eurocontrol.int/prudata/dashboard/vis/2022/>), which is the same as the data in the pre-filled monitoring templates and used across this report.

3. Additional ASMA Time



The additional ASMA times evolved in 2022 in a different manner at each German airport, but in total, and driven mainly by the improvements in Berlin Brandenburg and Munich, these times were 3% lower than in 2021.

In comparison with the 2022 SES average of 1.06 min/arr, only Frankfurt (EDDF; 2019: 2.17 min/arr.; 2020: 1.73 min/arr.; 2021: 1.51 min/arr.; 2022: 1.65 min/arr.) and Cologne (EDDK; 2019: 1.15 min/arr.; 2020: 0.88 min/arr.; 2021: 1.27 min/arr.; 2022: 1.3 min/arr.) exceed that value.

According to German monitoring report: *ATM in TMAs is still focusing on noise abatement (departure) and capacity and traffic flow (approach).*

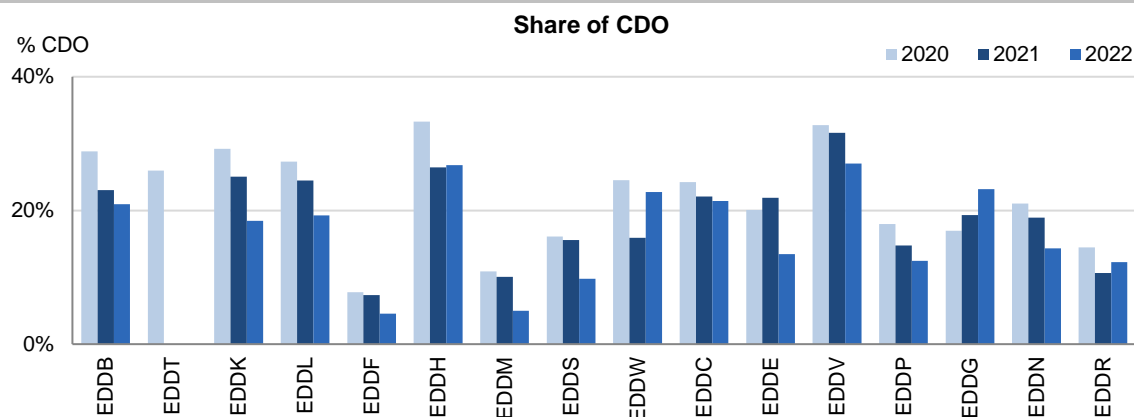
With traffic recovering after the COVID pandemic more tactical manoeuvring inside TMAs occurred as forecasted.

In addition projects to shorten TMA detours have been successfully implemented (EDDL/MODRU; EDDS/TEDGO).

The NSA is monitoring the KPA Environment by regularly checking the current performance by using the existing dashboards.

The German monitoring report takes the values from the SES DB (<https://www.eurocontrol.int/prudata/dashboard/vis/2022/>), which is the same as the data in the pre-filled monitoring templates and used across this report.

4. Share of arrivals applying CDO



All German airports had shares of CDO flights below the RP3 overall value in 2022 (29.0%). Only Hamburg (EDDH), Bremen (EDDW), Münster-Osnabrück (EDDG) and Saarbrücken (EDDR) saw an improvement in the share of CDOs. Overall, the share of CDO decreased from 16.2% in 2021 to 12.7% in 2022.

The two airports with the highest traffic numbers, Frankfurt (EDDF) and Munich (EDDM), still have a very low share of CDO flights.

The share of CDO flights decreased with 5 or more percentage points for Cologne/Bonn (EDDK), Dusseldorf (EDDL), Munich (EDDM), Stuttgart (EDDS) and Erfurt (EDDE).

According to the German monitoring report: *After DFS had successfully implemented High-Transition-Operations to continuously approach Frankfurt from close to cruising levels a new project in the context of HERON is set up to design CDOs to EDDF from cruising level from various directions (out of adjacent FIRs/UIRs including MUAC) making use of the results from the former project.*

Besides DFS is taking every opportunity to apply published or tactical CDO procedures at airspace users individual needs whenever traffic allows.

The NSA is monitoring the KPA Environment by regularly checking the current performance by using the existing dashboards.

Source of above shown values: SES DB (<https://www.eurocontrol.int/prudata/dashboard/vis/2022/>)

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Berlin Brandenburg-EDDB | 1.29 | 1.9 | 1.58 | | | 0.4 | 0.93 | 0.59 | | | 29% | 23% | 21% | | |
| Berlin-Tegel-EDDT | 0.94 | - | - | | | 0.72 | - | - | | | 26% | n/a | n/a | | |
| Cologne/Bonn-EDDK | 1.36 | 1.34 | 1.22 | | | 0.88 | 1.27 | 1.3 | | | 29% | 25% | 18% | | |
| Dusseldorf-EDDL | 1.37 | 1.33 | 1.63 | | | 1.25 | 0.59 | 0.91 | | | 27% | 24% | 19% | | |
| Frankfurt-EDDF | 1.9 | 1.34 | 1.81 | | | 1.73 | 1.51 | 1.65 | | | 8% | 7% | 5% | | |
| Hamburg-EDDH | 0.91 | 1.12 | 1.37 | | | 0.6 | 0.45 | 0.55 | | | 33% | 26% | 27% | | |
| Munich-EDDM | 2.48 | 3.12 | 2.7 | | | 1.12 | 1.2 | 0.92 | | | 11% | 10% | 5% | | |
| Stuttgart-EDDS | 1.85 | 1.87 | 1.91 | | | 0.56 | 0.32 | 0.51 | | | 16% | 16% | 10% | | |
| Bremen-EDDW | - | - | - | | | - | - | - | | | 25% | 16% | 23% | | |
| Dresden-EDDC | - | - | - | | | - | - | - | | | 24% | 22% | 21% | | |
| Erfurt-EDDE | - | - | - | | | - | - | - | | | 20% | 22% | 13% | | |
| Hannover-EDDV | - | - | - | | | - | - | - | | | 33% | 32% | 27% | | |
| Leipzig-EDDP | - | - | - | | | - | - | - | | | 18% | 15% | 12% | | |
| Münster-Osnabrück-EDDG | - | - | - | | | - | - | - | | | 17% | 19% | 23% | | |
| Nürnberg-EDDN | - | - | - | | | - | - | - | | | 21% | 19% | 14% | | |
| Saarbrücken-EDDR | - | - | - | | | - | - | - | | | 14% | 11% | 12% | | |

GERMANY

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace on civil performance is highly minored when associated with an efficient ASM process:

- At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA structures), especially for congested airspaces.

- At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

- At tactical level (ACC/UAC in cooperation with TCS) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/UAC, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Germany | 51% | 42% | 43% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bremen | | | | | |
| Karlsruhe | | | | | |
| Langen | | | | | |
| Munich | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Germany | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bremen | | | | | |
| Karlsruhe | | | | | |
| Langen | | | | | |
| Munich | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Germany | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bremen | | | | | |
| Karlsruhe | | | | | |
| Langen | | | | | |
| Munich | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#8

GERMANY

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--|------|------|------|------|------|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | n/a | 0.22 | 0.27 | 0.27 | 0.27 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process, and the exclusion of delays due to 'exceptional events'. |
| Actual performance | n/a | n/a | 2.20 | | | |
| NSA's assessment of capacity performance | | | | | | |
| <p>In addition to the decisive influence of the pandemic in 2021, two other influencing factors were added in 2022 that were decisive for the course of business: the war in Ukraine and the significantly rising inflation rate, leading among other things to the resulting energy shortage.</p> <p>Air traffic recorded significant growth rates compared to the previous year. However, problems with the operational handling of passenger processes, triggered by the various service providers at the airports, affected this positive development.</p> <p>Overall, the recovery of the situation is reflected in the fact that the level of traffic development on average in 2022 has been able to correspond to the strongest month of 2021 with 80 percent of the traffic of 2019. After traffic volumes had only reached half of pre-crisis levels in 2021, there was a significant recovery in 2022. On an annual average, the number of controlled flights in German airspace was 80 percent of the 2019 level.</p> <p>Compared to the previous year, DFS conducted more than 60 percent more flights under instrument flight rules in 2022. In some air traffic control sectors, even more traffic was controlled than in the pre-Corona year 2019, up to 50 percent at peak times. Due to the Ukraine war, military flight operations also increased in the course of 2022. Overall, it was around 15 percent above the level of 2021.</p> <p>The GER 2022 en route capacity target of 0,27 min/flight was not met. The actual value for 2022 was 2,27 min/flight which is 2,00 min/flight above the target. [Corrected to 2,20 after consideration of 'exceptional events'.]</p> <p>The delay in 2022 was mainly caused by limited ATC capacity, Other Reasons (Code O due to activation of military corridors) and severe weather.</p> <p>Reasons for this non-achievement are e.g. the strong traffic increase from April 2022 with traffic peaks far above the pre-crisis level, significantly higher airspace complexity with increased military presence and the establishment of military corridors because of the war in the Ukraine.</p> <p>The capacity targets for 2022 were met in MUAC. More ATCO than anticipated have stopped working in OPS.</p> | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>DFS is in continuous exchange with the NM.</p> <p>Data received from DFS was checked, consolidated and in terms of unclarities further information was requested. Besides this the NSA requested regularly during the past year information on the Capacity performance, remedial actions and their progress as well as on outlooks.</p> <p>MUAC reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the AFG/PMG (ANSP FABEC Group / Performance Management Group) capacity report. This report is based on MUAC data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values.</p> <p>Value shown above is in line with the SES Dashboard (https://www.eurocontrol.int/prudata/dashboard/vis/2022/). It has to be considered that the anspperformance Dashboard (https://ansperformance.eu/data/) shows a better value of 2,11.</p> | | | | | | |

Capacity Planning

As stated in the national PP, the targets remain challenging for DFS. It is rather difficult to react on the strong traffic increase from April 2022 onwards with traffic peaks far above the pre-crisis level; significantly higher airspace complexity with increased military presence, and the establishment of military corridors because of the war in the Ukraine, while at the same time there are e.g. staffing measures having been slowed down during COVID with a negative effect on the staff situation (especially in Karlsruhe UAC Sector family South).

In addition, there were some unforeseen events or framework conditions that led to further bottlenecks such as: 4Flight Initiative with shifts of traffic from Reims ACC (due to the software problems with the 4Flight system, DSN was not able to fully ramp up capacity again by summer 2022 as planned. Therefore, part of the traffic transfers from Reims ACC to Karlsruhe UAC had to be extended until the beginning of October); High traffic volatility and poor predictability (intensive work is being done with all system partners and with NM to improve flight plan adherence.).

[Nothing reported for MUAC.]

ATCO in OPS (FTE)

| Bremen ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Planned (Perf Plan) | - | - | 235 | 233 | 248 | 268 | |
| Actual | 250 | 235 | 223 | 223 | | | |
| | | | | | | | |
| Karlsruhe ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 404 | 446 | 473 | 485 | |
| Actual | 396 | 380 | 386 | 388 | | | |
| | | | | | | | |
| Langen ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 440 | 424 | 441 | 447 | |
| Actual | 445 | 438 | 429 | 457 | | | |
| | | | | | | | |
| Munich ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 279 | 272 | 281 | 286 | |
| Actual | 288 | 278 | 274 | 302 | | | |
| | | | | | | | |
| Maastricht ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 290 | 309 | 315 | 317 | |
| Actual | 292 | 286 | 288 | 293 | | | |

The German NSA and ANSPs question if ATCO planning figures are legally required by the performance regulation to be included in the Performance Monitoring for RP3, as it is not a prescribed indicator. Furthermore, Germany questions whether this level of detail should be monitored by the EC, as plans are subject to change, creating unnecessary burdens within the SES performance scheme domain. Additionally, the planned evolution of ATCO numbers within an ANSP with multiple ACCs is socially sensitive.

Despite being a major driver for resolving current capacity and staffing issues, ATCO hiring and assignment cannot be considered a commitment due to the uncertainties associated with managing recruitment plans. The provided figures, even when reported annually, only offer a snapshot and do not guarantee a realistic view throughout the entire duration of RP3. Several factors contribute to the uncertainty of ATCO planning, including retirement rates, employee absences, maternity and parental leave, ATCO mobility issues, availability of suitable applicants, training success rates, and social agreements that impact ATCO availability per person and the total available Full-Time Equivalent (FTE) per ANSP. The demographic situation of ANSPs may also require hiring beyond traffic demand. Standardizing assumptions and disclosing information about ATCOs partially working in projects are necessary before reporting ATCO FTE.

For ANSPs with multiple national ACCs, ATCO hiring plans are managed at the ANSP level, but changes in traffic volumes, flows, and local human resources factors can influence assignments to different ACCs. It should be noted that social agreements, involving ANSPs, unions, Ministries of Finance, and Public Administration, will affect the figures related to the numbers of additional ATCOs to be recruited during RP3 and working conditions such as salaries, extra hours, and rostering.

For MUAC: More ATCO than anticipated have stopped working in OPS.

Application of Corrective Measures for Capacity (if applicable)

Strong traffic increase from April 2022 with traffic peaks far above the pre-crisis level (esp. in Karlsruhe UAC Sector family South); Staffing situation in some sector families (especially in Karlsruhe UAC Sector family South); 4Flight initiative with traffic shifts from Reims ACC; Significantly higher airspace complexity with increased military presence and the establishment of military corridors because of war in the Ukraine; High traffic volatility and poor predictability.[

As the given reasons for the capacity situation are various, the NSA was and will still be in regular contact with the ANSP to evaluate the situation in the course of the year, the outcome of the previous years remedial actions and the implementation of further remedial actions.

Remedial measures to be taken by ANSP

| Title | Description | Timeline for implementation | Status |
|---|--|------------------------------------|--|
| <i>Cooperation with NM - eNM22, eNM23</i> | <i>Network Measures Summer 2022 - RAD package to relieve Karlsruhe UAC. This initiative will also be continued in summer 2023.</i> | <i>Sommer period 2022 and 2023</i> | <i>Sommer 2022 - implemented Sommer 2023 - implemented</i> |
| <i>Cooperation with the German Armed Forces</i> | <i>Making the military corridors more flexible as far as possible</i> | <i>continuous</i> | <i>ongoing</i> |
| <i>Provision of full ATCO training capacity</i> | <i>After the pandemic, where ATCO training capacities had to be reduced, the training is brought back to maximum level</i> | <i>End of 2022</i> | <i>implemented</i> |
| <i>Increasing ATCO training capacity</i> | <i>DFS is currently examining ways to increase the training capacity for centre controllers in the short term. In addition, it is being examined whether upper area control training can be provided at an academy outside DFS, which would strengthen internal training in APS/ACS (lower area control).</i> | <i>as needed</i> | <i>ongoing</i> |
| <i>More extensive use of extra shifts</i> | <i>The labour agreement provides flexibility to make more extensive use of incentivised extra ATCO shifts</i> | <i>as needed</i> | <i>The labour agreement is in place since 2018</i> |
| <i>Optimisation of airspace structure</i> | <i>The airspace project COBRA offers increased sector capacities for Karlsruhe UAC</i> | <i>October 2021 and March 2022</i> | <i>Implementation has been achieved in two steps</i> |
| <i>Flight Plan adherence</i> | <i>Due to the poor predictability, traffic flow regulation measures are sometimes carried out below the standard capacity values in order to avoid congestion situations. This results in wasted capacity. Intensive work is being done with all system partners and with NM to improve flight plan adherence.</i> | <i>continuous</i> | <i>ongoing</i> |
| <i>Implementation of a new separation area in FL365 in the EBG South in Karlsruhe</i> | <i>This measure allows better balance of traffic distribution in the individual sectors.</i> | <i>March 2023</i> | <i>implemented</i> |

Summary of capacity performance

Germany did not achieve the required en route capacity performance in 2022. There were 2 516k flights in the airspace of Germany (handled by DFS & EUROCONTROL MUAC), with 5.7 million minutes of ATFM en route delay, including 483k minutes of ATFM delay re-attributed to the DFS (from other ANSPs) under the Network Manager's post operations delay attribution process.

Such delays originated from the eNM/S22 measures agreed with adjacent ANSPs to ameliorate expected capacity shortfalls primarily in Karlsruhe UAC, by on-loading adjacent ATC units.

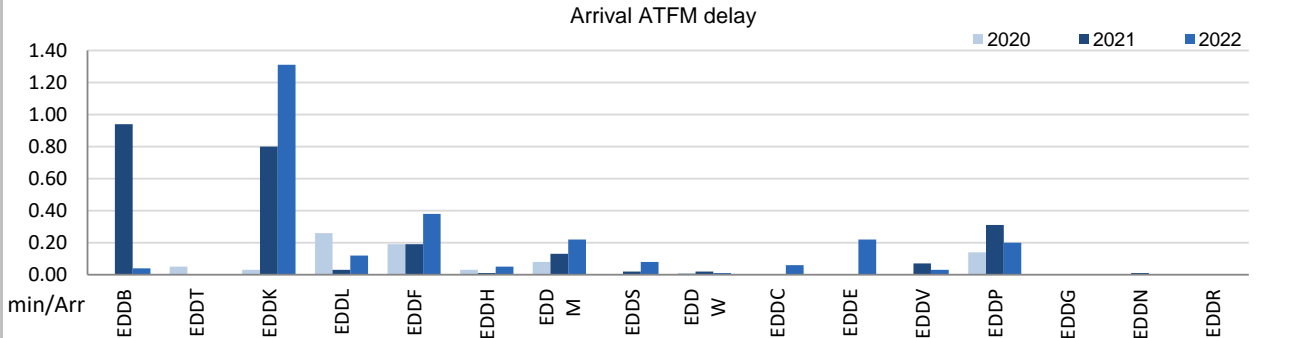
Similarly, during 2022, the DFS re-attributed 503k minutes of en route ATFM delay to DSNA due to eNM/S22 measures associated with the capacity shortfall in Reims ACC.

An additional 180k minutes of ATFM delay due to 'exceptional events' were excluded after consultation with the European Commission and the Network Manager, giving a final value of 5,5 million minutes of en route ATFM delay.

1. Overview

Germany identifies a total of 15 airports as subject to RP3 monitoring (Flight Operation at Berlin-Tegel were suspended on 08/11/2020 and the airport was finally decommissioned on 05/05/2021.) However, in accordance with IR (EU) 2019/317 and the traffic figures, only 7 of those airports must be monitored for pre-departure delays. The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is established for the 8 airports required. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at Cologne (EDDK) and Frankfurt (EDDF), with more than 60% of the reported delay not allocated to any cause. In 2022, traffic at the ensemble of German airports under monitoring was still 30% lower with respect to 2019, regardless of a 53% increase versus 2021. Average arrival ATFM delays in 2022 was 0.28 min/arr, same as in 2021. ATFM slot adherence has improved (2022: 97.6%; 2021: 97.3%).

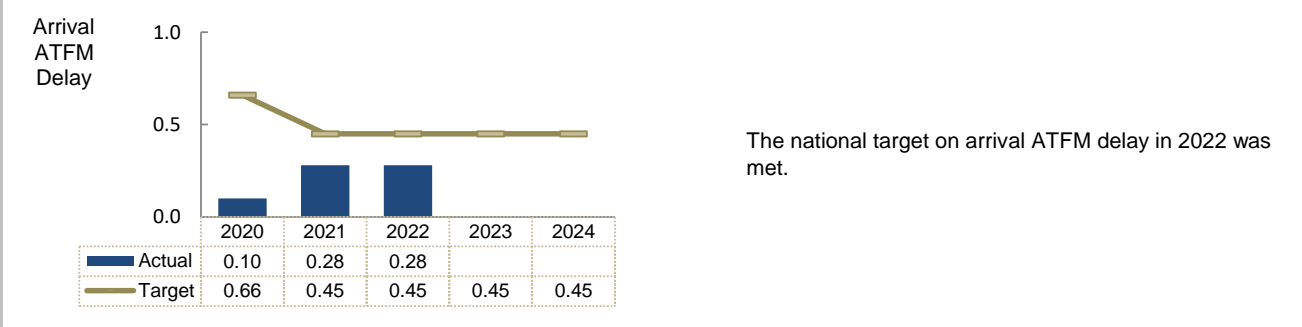
2. Arrival ATFM Delay



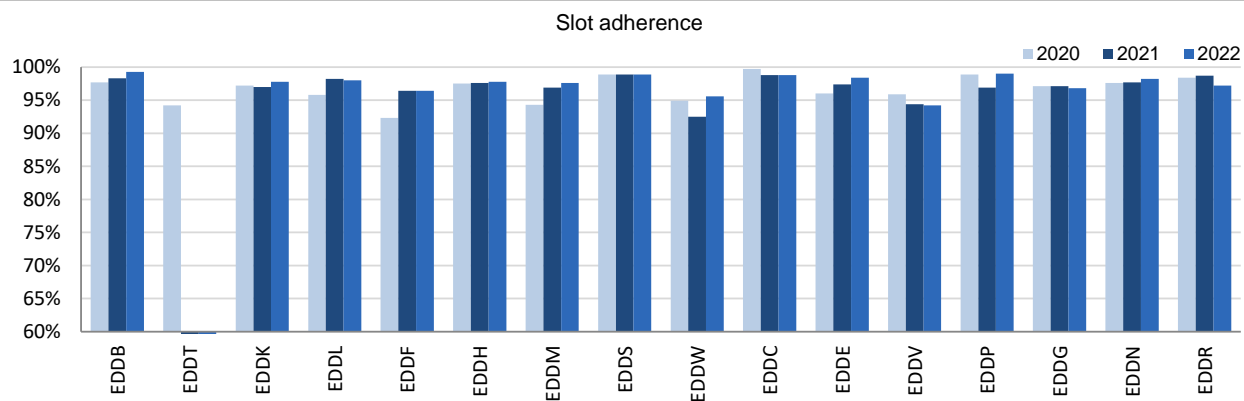
The most important delays at German airports in 2022 were observed at Cologne (EDDK: 2020: 0.03 min/arr.; 2021: 0.80 min/arr.; 2022: 1.31 min/arr.). 80% of these delays at Cologne were attributed to Aerodrome Capacity issues and distributed all over the year. Frankfurt (EDDF: 2019: 0.69 min/arr.; 2020: 0.19 min/arr.; 2021: 0.19 min/arr.; 2022: 0.38 min/arr.) and Munich (EDDM: 2019: 0.25 min/arr.; 2020: 0.08 min/arr.; 2021: 0.13 min/arr.; 2022: 0.22 min/arr.) showed delays mainly due to weather. Leipzig (EDDP: 2020: 0.14 min/arr.; 2021: 0.31 min/arr.; 2022: 0.2 min/arr.) improved slightly and Erfurt showed some delays concentrated in one day in November, and associated with non-ATC disruptions.

The rest of German airports registered very low or nearly zero arrival ATFM delays in 2022.

3. Arrival ATFM Delay – National Target



4. ATFM Slot Adherence



All German airports showed adherence above 94% and the national average was 97.6%, a slight improvement with respect to 2021 (97.3%). With regard to the 2.4% of flights that did not adhere, 1.5% was early and 0.9% was late. According to the German monitoring report there are *no initiatives planned by DFS in this area*.

5. ATC Pre-departure Delay

The share of unidentified delay reported by 2 of the 7 German airports subject to monitoring of this indicator in 2021 (Tegel is closed) has been above 40% for more than 2 months in the year, preventing the calculation of this indicator.

In order to improve the situation EUROCONTROL contacts regularly the airports to check on the status of the reporting and provide support in the final correct implementation of the APDF. EUROCONTROL is also part of an ACI sub-group (APN) that includes several airports and informs them regularly on data provision issues.

It should be noted that in 2022 three more airports were able to provide enough data quality for the calculation of the indicator (EDDH, EDDM, EDDS).

Hamburg (EDDH: 2022: 0.37 min/dep) and Berlin Brandenburg (EDDB: 2022: 0.27 min/dep) showed the highest values in Germany for this indicator. At the rest of airports these delays are very low.

According to the German monitoring report there are no initiatives planned by DFS in this area.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at German airports in 2022 increased significantly at all airports. The highest pre-departure delays were observed at Frankfurt (EDDF: 2022: 27.93 min/dep) and Cologne (EDDK: 2022: 25.75 min/dep), resulting in the highest and third highest among the SES monitored airports in 2022. The worst delays per flight at these airports were observed in Summer.

According to the German monitoring report there are no initiatives planned by DFS in this area. The German monitoring report also mentions: All cause departure delay is very generic and ATFM delay is only a small contributor. Departure delay can be generated by ATFM en-route delay (not only local airport, but the complete Network) but also reactionary and turnaround delay, technical issues with the aircraft, airport operations, problems with passengers and or luggage, etc. In other words, it is not always possible to address a specific reason as this delay is quite generic.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Berlin Brandenburg-EDDB | 0 | 0.94 | 0.04 | | | 97.7% | 98.3% | 99.3% | | | n/a | 0.32 | 0.27 | | | 8.17 | 12.32 | 20.13 | | |
| Berlin-Tegel-EDDT | 0.05 | - | - | | | 94.2% | - | - | | | n/a | - | - | | | 6.71 | - | - | | |
| Cologne/Bonn-EDDK | 0.03 | 0.8 | 1.31 | | | 97.2% | 97.0% | 97.8% | | | n/a | n/a | n/a | | | 10.77 | 16.68 | 25.75 | | |
| Dusseldorf-EDDL | 0.26 | 0.03 | 0.12 | | | 95.8% | 98.2% | 98.0% | | | n/a | 0.03 | 0.10 | | | 8.19 | 11.57 | 20.60 | | |
| Frankfurt-EDDF | 0.19 | 0.19 | 0.38 | | | 92.3% | 96.4% | 96.4% | | | n/a | n/a | n/a | | | 16.49 | 20.38 | 27.93 | | |
| Hamburg-EDDH | 0.03 | 0.01 | 0.05 | | | 97.5% | 97.6% | 97.8% | | | n/a | n/a | 0.37 | | | 7.38 | 10.24 | 19.05 | | |
| Munich-EDDM | 0.08 | 0.13 | 0.22 | | | 94.3% | 96.9% | 97.6% | | | n/a | n/a | 0.02 | | | 7.34 | 9.04 | 16.72 | | |
| Stuttgart-EDDS | 0 | 0.02 | 0.08 | | | 98.9% | 98.9% | 98.9% | | | n/a | n/a | 0.05 | | | 6.90 | 9.05 | 13.74 | | |
| Bremen-EDDW | 0.01 | 0.02 | 0.01 | | | 94.9% | 92.5% | 95.6% | | | - | - | - | | | - | - | - | | |
| Dresden-EDDC | 0 | 0 | 0.06 | | | 99.7% | 98.8% | 98.8% | | | - | - | - | | | - | - | - | | |
| Erfurt-EDDE | 0 | 0 | 0.22 | | | 96.0% | 97.4% | 98.4% | | | - | - | - | | | - | - | - | | |
| Hannover-EDDV | 0 | 0.07 | 0.03 | | | 95.9% | 94.4% | 94.2% | | | - | - | - | | | - | - | - | | |
| Leipzig-EDDP | 0.14 | 0.31 | 0.2 | | | 98.9% | 96.9% | 99.0% | | | - | - | - | | | - | - | - | | |
| Münster-Osnabrück-EDDG | 0 | 0 | 0 | | | 97.1% | 97.1% | 96.8% | | | - | - | - | | | - | - | - | | |
| Nürnberg-EDDN | 0 | 0.01 | 0 | | | 97.6% | 97.7% | 98.2% | | | - | - | - | | | - | - | - | | |
| Saarbrücken-EDDR | 0 | 0 | 0 | | | 98.4% | 98.7% | 97.2% | | | - | - | - | | | - | - | - | | |

GERMANY: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Germany ECZ represents 14.8% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 02 November 2022 and found consistent as per Commission Decision (EU) 2023/177 of 14 December 2022
The final version of the plan was adopted and published by Germany in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Germany: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|--------------|---------------|---------------|
| En route costs (nominal €) | 956 694 163 | 978 664 247 | 1 935 358 410 | 977 377 632 | 1 010 116 017 | 1 033 552 160 |
| Inflation % | 0.4% | 2.2% | | 1.1% | 1.5% | 1.7% |
| Inflation index (100 in 2017) | 103.7 | 106.1 | | 107.2 | 108.8 | 110.6 |
| Real en route costs (€2017) | 927 391 842 | 930 626 558 | 1 858 018 400 | 921 276 788 | 940 629 654 | 949 671 536 |
| Total en route service units | 6 792 043 | 7 562 500 | 14 354 543 | 13 643 500 | 14 862 500 | 15 857 500 |
| Real en route DUC per service unit (€2017) | 136.54 | 123.06 | 129.44 | 67.52 | 63.29 | 59.89 |

| Germany: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|---------------|---------------|---------------|--------------|-------|-------|
| En route costs (nominal €) | 956 694 163 | 920 107 769 | 1 876 801 932 | 999 178 465 | | |
| Inflation % | 0.4% | 3.2% | | 8.7% | | |
| Inflation index (100 in 2017) | 103.7 | 107.1 | | 116.4 | | |
| Real en route costs (€2017) | 927 391 842 | 866 615 414 | 1 794 007 256 | 884 417 524 | | |
| Total en route service units | 6 792 043 | 7 678 785 | 14 470 828 | 12 518 746 | | |
| Real en route AUC per service unit (€2017) | 136.54 | 112.86 | 123.97 | 70.65 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-----------------|-------------|---------------|--------------|--------------|------|
| En route costs (nominal €) | in value | 0 | -58 556 478 | -58 556 478 | 21 800 833 | |
| | in % | - | -6.0% | -3.0% | +2.2% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | | 7.6 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.0 p.p. | | 9.1 p.p. | |
| Real en route costs (€2017) | in value | 0 | -64 011 144 | -64 011 144 | -36 859 263 | |
| | in % | - | -6.9% | -3.4% | -4.0% | |
| Total en route service units | in value | 0 | 116 285 | 116 285 | -1 124 754 | |
| | in % | - | +1.5% | +0.8% | -8.2% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -10.20 | -5.46 | 3.12 | |
| | in % | - | -8.3% | -4.2% | +4.6% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +4.6% (or +3.12 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-8.2%) and lower than planned en route costs in real terms (-4.0%, or -36.9 M€2017). It should be noted that actual inflation index in 2022 was +9.1 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-8.2%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DFS) bearing a loss of -26.7 M€2017.

En route costs by entity

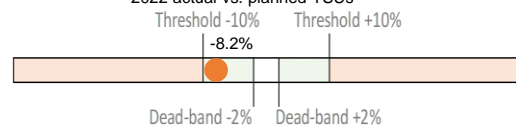
Actual real en route costs are -4.0% (-36.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DFS (-3.0%, or -22.4 M€2017), the other ANSP (MUAC (Germany), -12.6%, or -12.6 M€2017) and the MET service provider (-25.9%, or -3.1 M€2017) and higher costs for the NSA/EUROCONTROL (+2.2%, or +1.2 M€2017).

En route costs for the main ANSP (DFS) at charging zone level

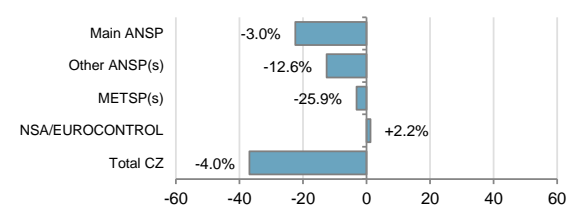
Lower than planned en route costs in real terms for DFS in 2022 (-3.0%, or -22.4 M€2017) result from:

- Significantly lower staff costs (-8.3%), due to two opposite effects, from one side lower staff (FTE's) compared to the planned while increasing costs for special payments in order to maintain capacity as part of the COVID-19 agreements,
- Significantly lower other operating costs (-13.0%), reflecting lower costs in projects like "Transmission paths", "Data Center", the construction of a new building at the DFS Campus Munich and lower costs relating to facility management and infrastructure.
- Slightly lower depreciation (-0.9%). None lower costs driver information has been provided.
- Significantly higher cost of capital (+199.8%), "caused by the negative development of the commercial papers."

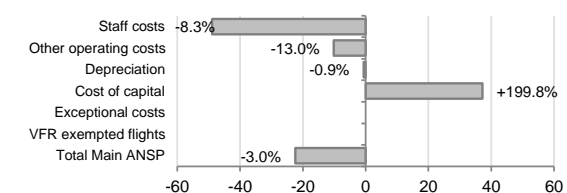
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



GERMANY: En route charging zone

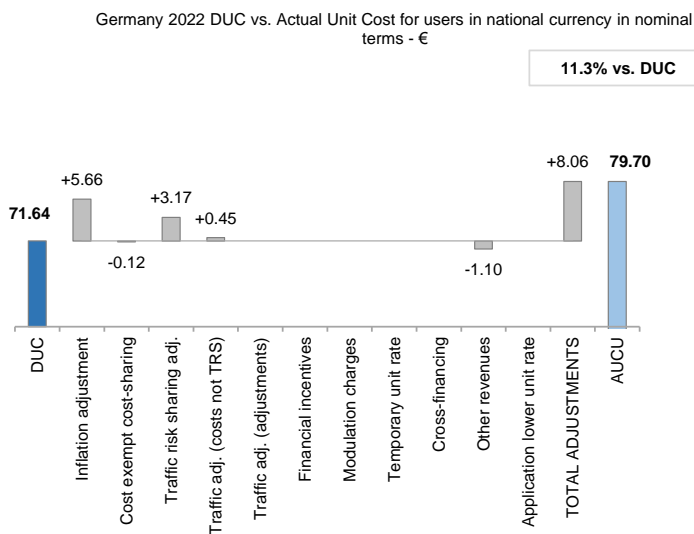
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 71.64 |
| DUC to be charged retroactively | 0.00 |
| DUC | 71.64 |
| Inflation adjustment | 5.66 |
| Cost exempt from cost-sharing | -0.12 |
| Traffic risk sharing adjustment | 3.17 |
| Traffic adj. (costs not TRS) | 0.45 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -1.10 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 8.06 |
| AUCU | 79.70 |
| AUCU vs. DUC | +11.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

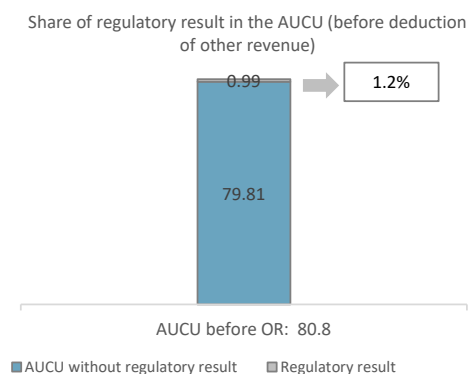
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|---------------|--------------|
| by item | New and existing investments | -971 | -0.08 |
| | Competent authorities and qualified entities costs | -2 409 | -0.19 |
| | Eurocontrol costs | 3 647 | 0.29 |
| | Pension costs | -1 676 | -0.13 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | -85 | -0.01 |
| | Total costs exempt from cost sharing | -1 493 | -0.12 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|------------------|--------------|
| DFS | -1 339 | -0.11 |
| MUAC (Germany) | 10 063 | 0.80 |
| METSP(s) | € '000 | €/SU |
| Germany MET | 3 618 | 0.29 |
| Total charging zone | 12 342 | 0.99 |
| Actual cost for users*** | 1 011 521 | 80.80 |
| Regulatory result (% AUCU) | 1.2% | 1.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (79.70 €) is +11.3% higher than the nominal DUC (71.64 €). The difference between these two figures (+8.06 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+5.66 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.12 €/SU);
- the addition of the traffic risk sharing adjustments (+3.17 €/SU);
- the addition of the traffic adjustment (+0.45 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-1.10 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 1.2%.

GERMANY: En route main ANSP (DFS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: The proportion of financing through equity for 2022A should be corrected to reflect the actual share, in spite of the specific composition of the asset base and the significantly higher than planned cost of capital reported to be due to "the negative development of the commercial papers". For the purpose of the analysis, it has been set at the level of the 2022D presented in the revised draft performance plan.

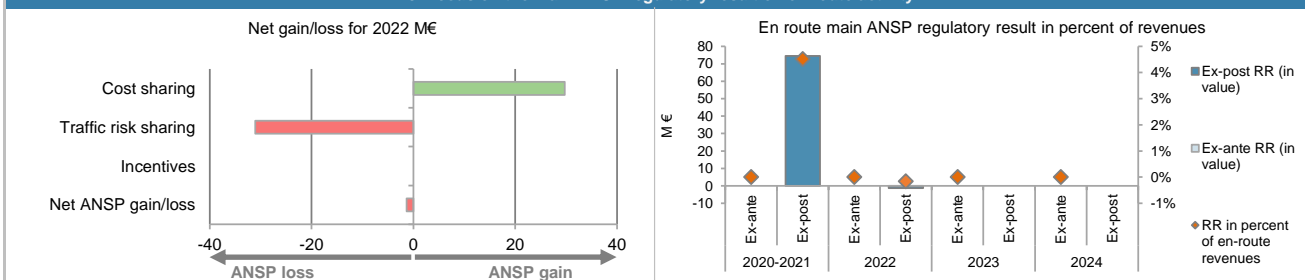
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 56 222 | -28 994 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 6 928 | 61 081 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -1 775 | -2 355 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 61 374 | 29 732 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.8% | -8.2% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 631 964 | 802 206 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 13 220 | -31 071 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 74 595 | -1 339 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DFS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-------------|---------------|---------------|---------------|-------------|-------------|
| Total asset base | 1 917 579 | 1 894 676 | 3 812 255 | 2 091 544 | 1 980 301 | 1 847 188 |
| Proportion of financing through equity (in %) | 32% | 27% | 30% | 39% | 41% | 51% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 0 | 0 | 0 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 807 298 | 824 666 | 1 631 964 | 802 206 | 828 096 | 847 075 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| DFS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 1 917 579 | 1 643 107 | 3 560 686 | 1 999 425 | | |
| Proportion of financing through equity (in %) (see Note 1) | 32% | 27% | 30% | 39% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | | |
| RoE (in value) | 0 | 0 | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 74 595 | 74 595 | -1 339 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 74 595 | 74 595 | -1 339 | | |
| Revenue for the en route charging zone | 807 298 | 843 039 | 1 650 337 | 829 862 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 8.8% | 4.5% | -0.2% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 16.6% | 7.0% | -0.2% | | |

13. Focus on the main ANSP regulatory result on en route activity



DFS net gain on activity in the Germany en route charging zone in the year 2022

DFS reported a net loss of -1.3M€, as a combination of a gain of +29.7 M€ arising from the cost sharing mechanism, with a loss of -31.1 M€ arising from the traffic risk sharing mechanism.

DFS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR corresponds to the net loss from the en route activity mentioned above (-1.3 M€), as the RoE for DFS has been set to zero throughout RP3. The ex-post RR corresponds to -0.2% of the en route revenues). The resulting ex-post rate of return on equity is -0.2%, compared to 0% planned in the PP.

GERMANY: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|---------|------------|---------|---------|---------|
| MUAC (Germany) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 83 201 | 87 695 | 170 896 | 106 543 | 112 535 | 116 251 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Germany) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 2 028 | 2 028 | 10 063 | | |
| Revenue for the en route charging zone | 83 201 | 89 724 | 172 925 | 110 860 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 2.3% | 1.2% | 9.1% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Germany MET planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 12 493 | 13 112 | 25 605 | 12 750 | 12 115 | 12 209 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Germany MET actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -697 | -697 | 3 618 | | |
| Revenue for the en route charging zone | 12 493 | 13 218 | 25 711 | 13 682 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -5.3% | -2.7% | 26.4% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | -8.7% | -4.5% | 57.0% | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 95 694 | 100 808 | 196 502 | 119 292 | 124 650 | 128 460 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 1 331 | 1 331 | 13 681 | | |
| Revenue for the en route charging zone | 95 694 | 102 942 | 198 635 | 124 542 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.3% | 0.7% | 11.0% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Germany (MUAC (Germany), Germany MET) corresponds to 11.0% of the en route revenues. The RoE cannot be calculated for MUAC (Germany), as it has no equity. | | | | | | |

GERMANY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Germany TCZ represents 22.7% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 15 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 8 Airports with more than 80,000 IFR mvmts: 7 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Germany: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 286 347 609 | 297 289 961 | 583 637 570 | 294 376 034 | 304 847 292 | 326 799 431 |
| Inflation % | 0.4% | 2.2% | | 1.1% | 1.5% | 1.7% |
| Inflation index (100 in 2017) | 103.7 | 106.1 | | 107.2 | 108.8 | 110.6 |
| Real terminal costs (€2017) | 277 117 296 | 282 222 850 | 559 340 146 | 276 938 178 | 283 248 502 | 299 291 923 |
| Total terminal service units | 630 014 | 693 000 | 1 323 014 | 1 280 000 | 1 426 000 | 1 498 000 |
| Real terminal DUC per service unit (€2017) | 439.86 | 407.25 | 422.78 | 216.36 | 198.63 | 199.79 |
| Germany: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 286 347 609 | 289 414 789 | 575 762 397 | 313 270 924 | | |
| Inflation % | 0.4% | 3.2% | | 8.7% | | |
| Inflation index (100 in 2017) | 103.7 | 107.1 | | 116.4 | | |
| Real terminal costs (€2017) | 277 117 296 | 271 829 077 | 548 946 373 | 275 486 343 | | |
| Total terminal service units | 630 014 | 704 005 | 1 334 018 | 1 067 026 | | |
| Real terminal AUC per service unit (€2017) | 439.86 | 386.12 | 411.50 | 258.18 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -7 875 172 | -7 875 172 | 18 894 890 | |
| | in % | - | -2.6% | -1.3% | +6.4% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.0 p.p. | | 7.6 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.0 p.p. | | 9.1 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -10 393 774 | -10 393 774 | -1 451 835 | |
| | in % | - | -3.7% | -1.9% | -0.5% | |
| Total terminal service units | in value | 0 | 11 005 | 11 005 | -212 974 | |
| | in % | - | +1.6% | +0.8% | -16.6% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -21.13 | -11.28 | 41.82 | |
| | in % | - | -5.2% | -2.7% | +19.3% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +19.3% (or +41.82 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-16.6%) and slightly lower than planned terminal costs in real terms (-0.5%, or -1.5 M€2017). It should be noted that actual inflation index in 2022 was +9.1 p.p. higher than planned.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (-16.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DFS) bearing a loss of -10.9 M€2017.</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -0.5% (-1.5 M€2017) lower than planned. This is the result of lower costs for the MET service provider (-16.3%, or -0.8 M€2017), the main ANSP, DFS (-0.2%, or -0.4 M€2017) and the NSA (-19.3%, or -0.2 M€2017).</p> | | | | | | |
| <p>Terminal costs for the main ANSP (DFS) at charging zone level</p> <p>Slightly lower than planned terminal costs in real terms for DFS in 2022 (-0.2%, or -0.4 M€2017) result from:</p> <ul style="list-style-type: none"> - Lower staff costs (-4.2%), mainly as a result of the inflation index impact (+9.1 p.p.) since in nominal terms staff costs are higher than planned (+3.9%) due to special payments in order to maintain capacity as part of the COVID-19 agreements. - Lower other operating costs (-2.5%), as a result of the inflation index impact (+9.1 p.p.) since in nominal terms operating costs are higher than planned (+5.8%) due to external personnel for programming work, travel expenses, bike leasing, inflation impacting the increase of costs services. - Significantly lower depreciation (-17.1%), mainly due to the implementation of the TANGE (Tower Air Traffic Service - ATS next generation)/RTC project. - Significantly higher cost of capital (+215.9%), "caused by the negative performance of the commercial papers." | | | | | | |

GERMANY: Terminal charging zone

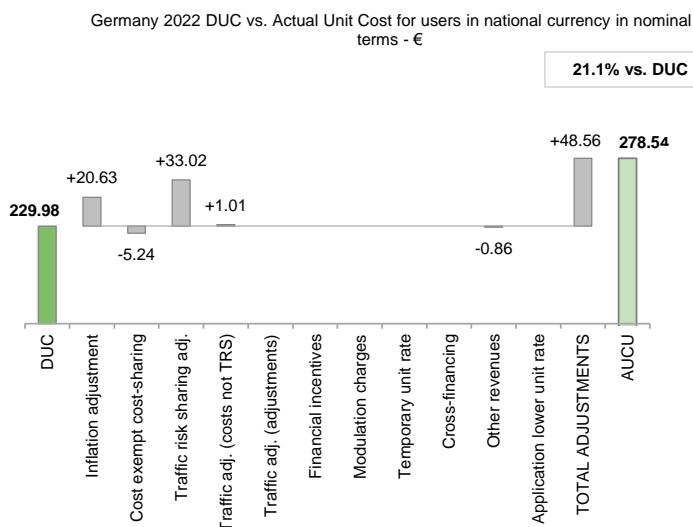
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 229.98 |
| DUC to be charged retroactively | 0.00 |
| DUC | 229.98 |
| Inflation adjustment | 20.63 |
| Cost exempt from cost-sharing | -5.24 |
| Traffic risk sharing adjustment | 33.02 |
| Traffic adj. (costs not TRS) | 1.01 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -0.86 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 48.56 |
| AUCU | 278.54 |
| AUCU vs. DUC | 21.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

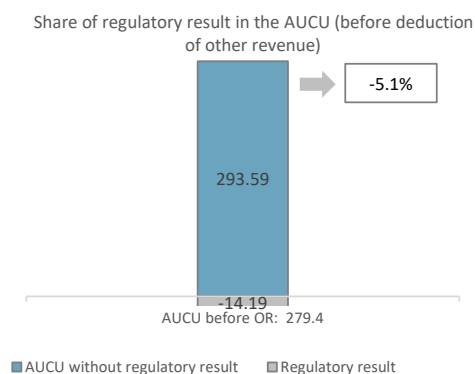
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|--------------|--------------|
| by item | New and existing investments | -4752 | -4.45 |
| | Competent authorities and qualified entities costs | -209 | -0.20 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | -602 | -0.56 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | -31 | -0.03 |
| Total costs exempt from cost sharing | | -5593 | -5.24 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| DFS | -16 117 | -15.10 |
| METSP(s) | | |
| Germany-MET | 977 | 0.92 |
| Total charging zone | -15 139 | -14.19 |
| Actual cost for users*** | 298 132 | 279.40 |
| Regulatory result (% AUCU) | -5.1% | -5.1% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (278.54 €) is +21.1% higher than the nominal DUC (229.98 €). The difference between these two figures (+48.56 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+20.63 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-5.24 €/SU);
- the addition of the traffic risk sharing adjustments (+33.02 €/SU);
- the addition of the traffic adjustment (+1.01 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.86 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -5.1%.

GERMANY: Terminal main ANSP (DFS)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: The proportion of financing through equity for 2022A should be corrected to reflect the actual share, in spite of the specific composition of the asset base and the significantly higher than planned cost of capital reported to be due to "the negative development of the commercial papers". For the purpose of the analysis, it has been set at the level of the 2022D presented in the revised draft performance plan.

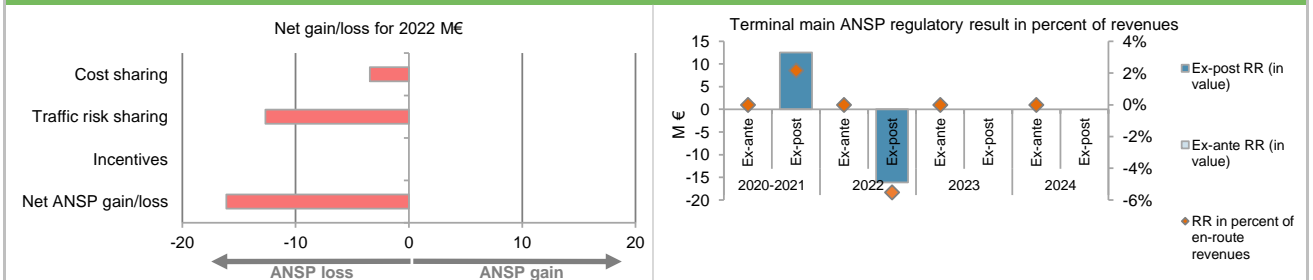
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 8 040 | -19 689 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 2 410 | 21 624 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -2 697 | -5 384 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 7 753 | -3 448 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.8% | -16.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 571 068 | 287 917 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 4 750 | -12 668 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 12 503 | -16 117 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| DFS planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|-------------|---------------|---------------|----------------|-------------|-------------|
| Total asset base | 548 894 | 637 510 | 1 186 404 | 823 605 | 786 495 | 704 148 |
| Proportion of financing through equity (in %) | 20% | 1% | 10% | 24% | 32% | 30% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 0 | 0 | 0 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 280 236 | 290 831 | 571 068 | 287 917 | 298 433 | 320 312 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| DFS actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 548 894 | 674 656 | 1 223 550 | 798 046 | | |
| Proportion of financing through equity (in %) (see Note 1) | 20% | 1% | 10% | 24% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | | |
| RoE (in value) | 0 | 0 | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 12 503 | 12 503 | -16 117 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 12 503 | 12 503 | -16 117 | | |
| Revenue for the terminal charging zone | 280 236 | 295 294 | 575 530 | 291 489 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 4.2% | 2.2% | -5.5% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 231.6% | 10.8% | -8.6% | | |

13. Focus on main ANSP regulatory result on terminal activity



DFS net gain on activity in the Germany terminal charging zone in the year 2022

DFS reported a net loss of -16.1 M€, as a combination of a loss of -3.4 M€ arising from the cost sharing mechanism, with a loss of -12.7 M€ arising from the traffic risk sharing mechanism.

DFS overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-16.1 M€) amounts to -16.1 M€ (-5.5% of the terminal revenues), as the RoE for DFS has been set to zero. The resulting ex-post rate of return on equity is -8.6%.

GERMANY: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Germany-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 5 321 | 5 456 | 10 777 | 5 374 | 5 226 | 5 260 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Germany-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | -208 | -208 | 977 | | |
| Revenue for the terminal charging zone | 5 321 | 5 500 | 10 821 | 5 767 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -3.8% | -1.9% | 16.9% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | -6.3% | -3.2% | 32.4% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Germany (Germany-MET) corresponds to 16.9% of the terminal revenues. The ex-post RoE 32.4% is higher than planned 0.0%. | | | | | | |

GERMANY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|------------------|---------------|---------------|------------------|---------------|---------------|-----------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Germany | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Germany | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Germany: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 927 391 842 | 930 626 558 | 1 858 018 400 | 921 276 788 | 940 629 654 | 949 671 536 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 277 117 296 | 282 222 850 | 559 340 146 | 276 938 178 | 283 248 502 | 299 291 923 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 1 204 509 138 | 1 212 849 408 | 2 417 358 546 | 1 198 214 966 | 1 223 878 156 | 1 248 963 459 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 77.0% | 76.7% | 76.9% | 76.9% | 76.9% | 76.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Germany: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 927 391 842 | 866 615 414 | 1 794 007 256 | 884 417 524 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 277 117 296 | 271 829 077 | 548 946 373 | 275 486 343 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 1 204 509 138 | 1 138 444 490 | 2 342 953 629 | 1 159 903 868 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 77.0% | 76.1% | 76.6% | 76.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -74 404 917 | -74 404 917 | -38 311 098 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -6.1% | -3.1% | -3.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.6 p.p. | -0.3 p.p. | -0.6 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>77%</td> <td>23%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>77%</td> <td>23%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>76%</td> <td>24%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 77% | 23% | Actual | 77% | 23% | 2021 | Determined | 77% | 23% | Actual | 76% | 24% | 2020-2021 | Determined | 77% | 23% | Actual | 77% | 23% | 2022 | Determined | 77% | 23% | Actual | 76% | 24% | 2023 | Determined | 77% | 23% | Actual | 76% | 24% | 2024 | Determined | 76% | 24% | Actual | 76% | 24% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -3.2% (-38.3 M€2017) lower than planned, as en route costs are lower than planned by -36.9 M€2017 and terminal costs are lower than planned by -1.5 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (76.2%) is slightly lower than planned in the PP for 2022 (76.9%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DFS | 0 | 1 090 123 | 0.0% | -17 456 | 1 121 351 | -1.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MUAC (Germany) | 0 | 106 543 | 0.0% | 10 063 | 110 860 | 9.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | | RR | | | Revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Germany MET | 0 | 18 124 | 0.0% | 4 596 | 19 449 | 23.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 1 214 790 | 0.0% | -2 797 | 1 251 660 | -0.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Germany covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to -2.8 M€ (+12.3 M€ for en route and -15.1 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to -0.2% of gate-to-gate ANS revenues.</p> <p>This is lower than the return planned for the year (0.0% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Germany gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Germany gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Category</th> <th>Value (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>0.0%</td> </tr> <tr> <td>Ex-post</td> <td>-0.2%</td> </tr> </tbody> </table> | | | | | | | Category | Value (%) | Ex-ante | 0.0% | Ex-post | -0.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Category | Value (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 0.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | -0.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Greece

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GREECE

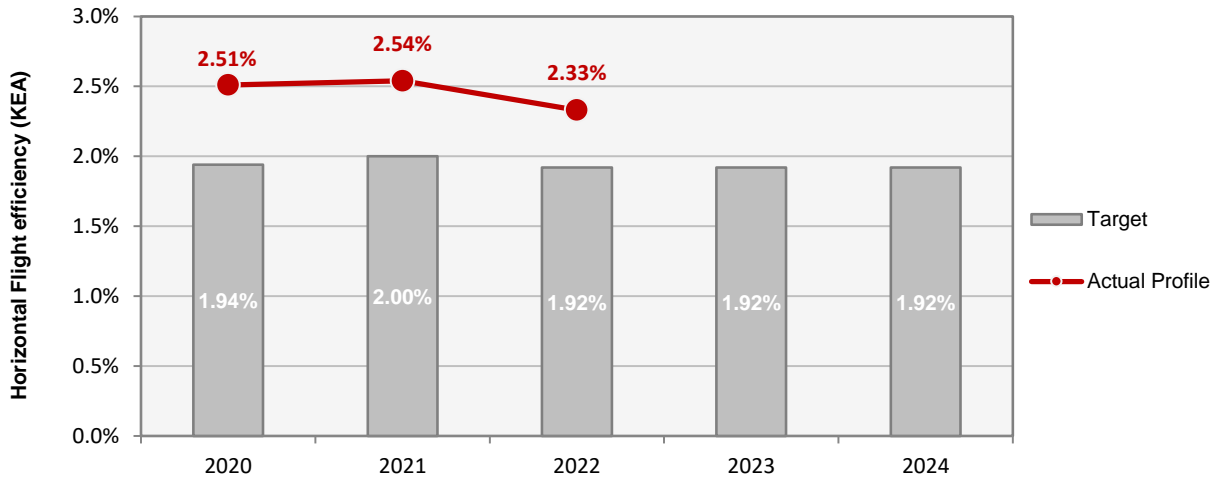
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| HANSP | 80 | C | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Four out of five EoSM components of the ANSP meet already the RP3 target level. No improvements were observed over 2022, but only "Safety Risk Management" component is below 2024 target level. Three questions are to be improved to reach the RP3 target. | | | | | | |

GREECE

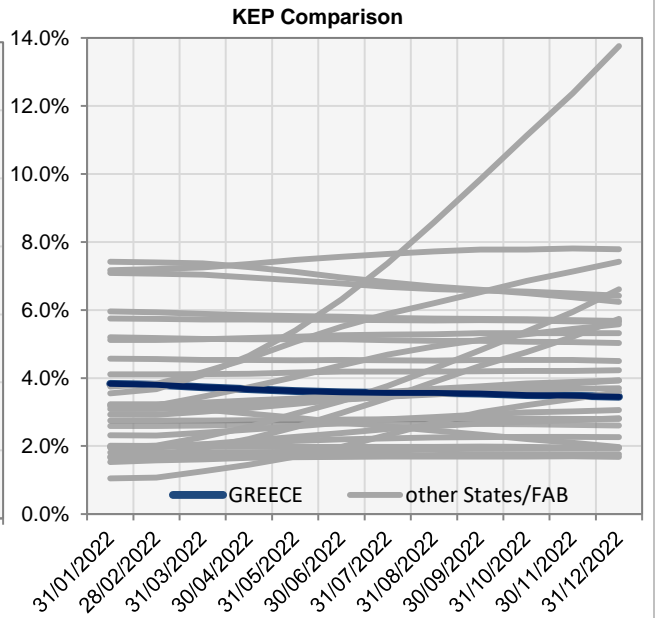
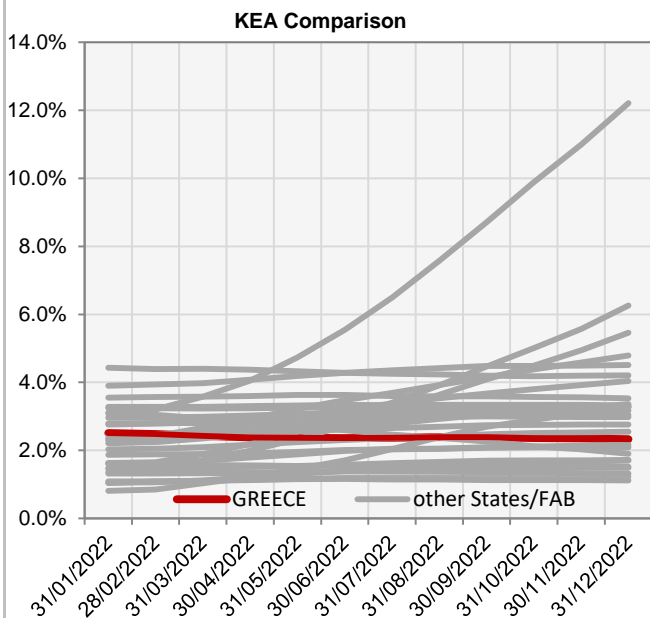
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.94% | 2.00% | 1.92% | 1.92% | 1.92% |
| Actual performance | 2.51% | 2.54% | 2.33% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.51% | 2.48% | 2.43% | 2.38% | 2.37% | 2.36% | 2.37% | 2.39% | 2.39% | 2.36% | 2.35% | 2.33% |
| KEP | 3.83% | 3.80% | 3.73% | 3.67% | 3.62% | 3.58% | 3.56% | 3.56% | 3.54% | 3.50% | 3.48% | 3.45% |
| KES | 3.27% | 3.25% | 3.22% | 3.18% | 3.15% | 3.14% | 3.13% | 3.13% | 3.12% | 3.08% | 3.06% | 3.04% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

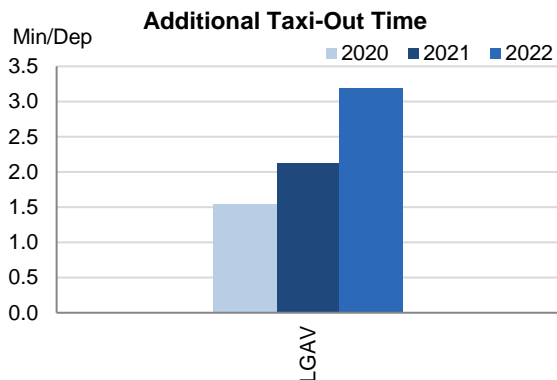
Operational ANS performance at airports is monitored for one airport in Greece (i.e. Athens (LGAV)), the only airport subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed.

Traffic at Athens in 2022 was only 6% lower than in 2019 and 36% higher than in 2021.

Additional times are higher than in 2019, even if the traffic has not fully recovered.

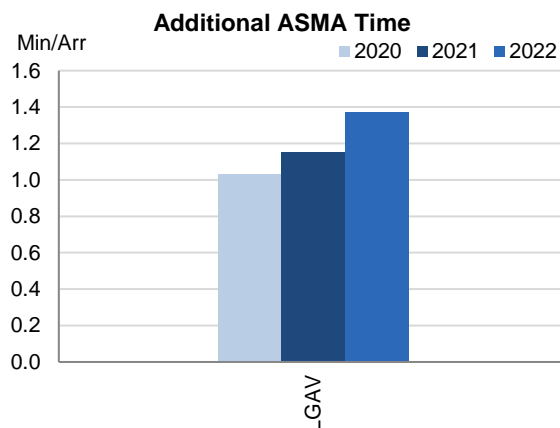
The share of CDO flights stayed relatively high compared to other airports monitored in RP3.

2. Additional Taxi-Out Time



Additional taxi-out times at Athens (LGAV; 2019: 2.61 min/dep.; 2020: 1.54 min/dep.; 2021: 2.12 min/dep.; 2022: 3.18 min/dep.) have considerably increased in the last 3 years and were in 2022 22% higher than in 2019.

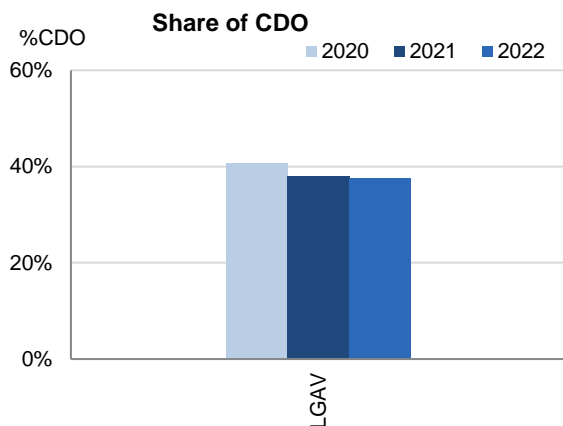
3. Additional ASMA Time



The additional times in the terminal airspace (LGAV; 2019: 1.30 min/arr.; 2020: 1.03 min/arr.; 2021: 1.15 min/arr.; 2022: 1.37 min/arr.) observed a gradual increase during RP3, and in 2022 was also higher than in 2019.

According to the Greek monitoring report: *At Athens, the PBN Procedures Design & Implementation Project is under development.*

4. Share of arrivals applying CDO



The share of CDO flights at Athens (LGAV) has stayed stable in 2022 at 38% which is above the overall RP3 value in 2022 (29.0%).

The monthly values ranged from 34.6% in June and July to 40.2% in April and December.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Athens-LGAV | 1.54 | 2.12 | 3.18 | | | 1.03 | 1.15 | 1.37 | | | 41% | 38% | 38% | | |

GREECE

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The activation of military areas obviously has impact on flight efficiency. Nevertheless, handling areas by AMC through EAUP/EUUP, could minimize the impact. Airspace designers could contribute decidedly on this effort.

Since the entry in NATO of neighbouring States, the increase of Greek State investments in military equipment and the beginning of war in Ukraine, military activity has augmented, MIL exercises, both national and multi, as well as NATO have become almost daily. This leads to ATS routes' frequent closures, to several RAD restrictions' amendments, suspensions, changes of several into dependently applicable, creations of temporarily new, in other words, changes of the routine mandatory and forbidden traffic flows. To this, the transfer of certain traffic load to other, often neighbouring sectors, due to the MIL activity, should be added. Taking into consideration that traffic complexity, the more familiar, increases the ATC throughput, each novelty reduces the capacity values, especially at the beginning of its implementation; and MIL activities are often planned and decided at short notice in the area. The activities' design, responsibility of a specific section, is described in the related NOTAM published, often resulting from lengthy preceding civil-MIL CDM; from then on, sometimes within short time limits, cooperation with parties affected from the necessary changes in the traffic flows/RAD TFRs is realized with the ACCs, neighbouring ANSPs, aerodromes' ATS units, depending on the case, and requests to the NM RAD Team addressed for the final uploads to CACD, targeting to the flight planning.

Military - related measures implemented or planned to improve capacity

HASP plans to extend time availability of HELLAS FRA H24 on 02 NOV 23. Within FRA all military areas 'll be transformed to AMA areas, activated by AMC through EAUP/EUUP process. The transformation 'll improve the airspace usage following FUA concept.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Greece | | | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Athinai | | | | | |
| Makedonia | | | | | |

Initiatives implemented or planned to improve PI#6

N/A(there is no TOOL with ARCHIVE DATA)

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Greece | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Athinai | | | | | |
| Makedonia | | | | | |

Initiatives implemented or planned to improve PI#7

N/A(there is no TOOL with ARCHIVE DATA)

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Greece | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Athinai | | | | | |
| Makedonia | | | | | |

Initiatives implemented or planned to improve PI#8

N/A(there is no TOOL with ARCHIVE DATA)

GREECE

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|--|------|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.34 | 0.32 | 0.14 | 0.15 | 0.15 | | |
| Actual performance | 0.02 | 0.43 | 0.15 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>At the operational level, traffic in Greece rose in 2022 compared to 2021 and the planned in 2022, as presented in the Performance Plan.</p> <p>The actual average en route ATFM delay per flight in 2022 was 0.15 minutes per flight, 0.01 minute per flight above the target (0.14).</p> <p>The performance was great and gained the plaudits of NM and the State that established a financial bonus from incoming unit rates, but relied solely on it and neglected the planned and promised recruitment of ATCOs, or the replacement /updating of ATM system, leading to the dive of the capacity potential.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>Continuous consultation with relevant division of HASP and exploitation of relevant Eurocontrol data through appropriate tools such as NMIR, NOP, MIRROR ect.</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Athens ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 190 | 230 | 275 | 285 | This includes figures for Makedonia ACC which uses the same sytem and personnel. |
| Actual | 214 | 194 | 190 | 188 | | | |
| <p>Planned recruitment targets have not been met so far, modernisation of infrastructure still pending.</p> | | | | | | | |
| Additional information related to Russia's war of aggression against Ukraine | | | | | | | |
| <p>As a result of the banning by NOTAM of the DEP flights from Greece to Russia and vice versa, plus the closure of the Ukranian airspace, the respective flows mainly to Greek touristic destinations have ceased, their load alleviated, their incoming service units, too.</p> <p>What was felt during summer period, when the traffic in Greece is heavier, was some shift of flows to/from Scandinavia and the Baltics to the west sectors, moreover when trying to avoid Polish airspace, heavily impacted by the crisis and producing heavy delays.</p> <p>Also, some overflights picked Hellas UIR to/from the far East, because of Ukranian closure, as they flew more southern trajectories.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Greece experienced a large increase in traffic from 569k flights in 2021 to 896k flights in 2022 which was actually above the 884k flights in 2019.</p> <p>In 2022 Greece had 138k minutes of en route ATFM delay for 896k flights. In comparison, for 884k flights in 2019, Greece had almost treble the delay: 375k minutes.</p> | | | | | | | |

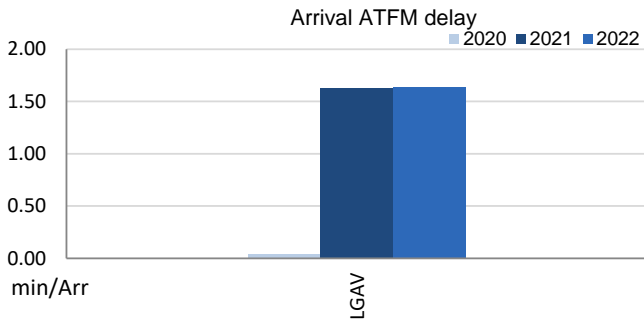
1. Overview

Operational ANS performance at airports is monitored for one airport in Greece (i.e. Athens (LGAV)), the only airport subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at Athens in 2022 was only 6% lower than in 2019 and 36% higher than in 2021.

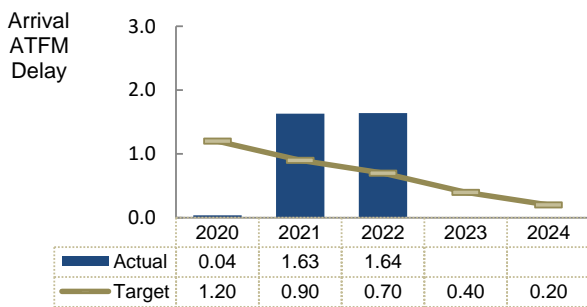
Average arrival ATFM delays in 2022 was 1.64 min/arr, compared to 1.63 min/arr in 2021. ATFM slot adherence has improved (2022: 94.7%; 2021: 93.9%).

2. Arrival ATFM Delay



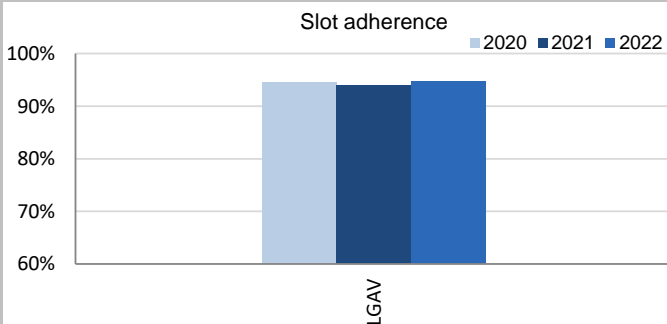
Average arrival ATFM delays at Athens (LGAV: 2019: 3.57 min/arr.; 2020: 0.04 min/arr.; 2021: 1.63 min/arr.; 2021: 1.67 min/arr.) were attributed to ATC Capacity (34%, during the Summer), Aerodrome Capacity (34%, concentrated in October) and ATC Equipment (26%)
The aerodrome is neither CDM, nor advanced tower.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Athens's ATFM slot compliance was 94.7%, slightly better than in 2021 (93.9%). With regard to the 5.3% of flights that did not adhere, 2.7% was early and 2.6% was late.

Greek NSA reports the use at a larger scale of the electronic facilities ref. the slot values' updating, offered by NM to Tower ATC & FMPs.

5. ATC Pre-departure Delay

The quality of the airport data reported by Athens airport is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Athens.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Athens has been above 40% since April 2020, preventing the calculation of this indicator. Even with the traffic recovery the reporting has not improved, although Athens had proper reporting before the pandemic.

The Greek NSA reported two years ago that this issue was under consultation with the Provider and that further information would be provided in due time, after the collection and evaluation of all relevant data. However the Greek monitoring report of this year does not provide any information nor comment about this.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Athens increased in 2021 (LGAV: 2020: 8 min/dep.; 2021: 12.90 min/dep.; 2022: 17.44 min/dep.). The highest delays per flight were observed from June to August.

The Greek NSA reports that *since LGAV is not CDM or advanced, the AOs file their EOBT without taking into consideration the capacity throughput, causing increased demand during certain time periods of the day. ATCOs in their turn, sequence DEPs so that the global aerodrome capacity is not violated. All the above in relation to the big increase of demand and the increase of the heavy acft arrivals.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Athens-LGAV | 0.04 | 1.63 | 1.64 | | | 94.5% | 93.9% | 94.7% | | | n/a | n/a | n/a | | | 8.00 | 12.90 | 17.44 | | |

GREECE: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|--|-----------------|--------------|--|--------------|---------------|--------------|
| <ul style="list-style-type: none"> Greece ECZ represents 2.5% of the SES en route ANS actual costs in 2022 National currency: EUR Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2421 of 5 December 2022 The final version of the plan was adopted and published by Greece in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Greece: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal €) | 122 534 049 | 154 588 521 | 277 122 571 | 172 346 612 | 189 163 549 | 204 267 726 |
| Inflation % | 0.0% | 0.2% | | 4.5% | 1.3% | 1.6% |
| Inflation index (100 in 2017) | 101.3 | 101.5 | | 106.5 | 107.9 | 109.7 |
| Real en route costs (€2017) | 121 238 035 | 152 694 948 | 273 932 983 | 163 297 590 | 177 513 878 | 189 760 728 |
| Total en route service units | 2 755 521 | 3 973 099 | 6 728 620 | 5 861 000 | 6 584 000 | 6 781 000 |
| Real en route DUC per service unit (€2017) | 44.00 | 38.43 | 40.71 | 27.86 | 26.96 | 27.98 |
| Greece: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | 122 534 049 | 134 557 887 | 257 091 936 | 164 437 438 | | |
| Inflation % | 0.0% | 0.6% | | 9.3% | | |
| Inflation index (100 in 2017) | 101.3 | 101.9 | | 111.4 | | |
| Real en route costs (€2017) | 121 238 035 | 132 409 771 | 253 647 806 | 150 000 760 | | |
| Total en route service units | 2 755 521 | 4 048 217 | 6 803 737 | 6 416 384 | | |
| Real en route AUC per service unit (€2017) | 44.00 | 32.71 | 37.28 | 23.38 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | in value | 0 | -20 030 634 | -20 030 634 | -7 909 174 | |
| | in % | - | -13.0% | -7.2% | -4.6% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.4 p.p. | 4.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.4 p.p. | 4.9 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -20 285 177 | -20 285 177 | -13 296 830 | |
| | in % | - | -13.3% | -7.4% | -8.1% | |
| Total en route service units | in value | 0 | 75 118 | 75 118 | 555 384 | |
| | in % | - | +1.9% | +1.1% | +9.5% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -5.72 | -3.43 | -4.48 | |
| | in % | - | -14.9% | -8.4% | -16.1% | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10% +9.5%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the en route AUC was -16.1% (or -4.48 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+9.5%) and significantly lower than planned en route costs in real terms (-8.1%, or -13.3 M€2017). It should be noted that actual inflation index in 2022 was +4.9 p.p. higher than planned.</p> | | | | | | |
| En route service units | | | <p>Costs by entity at ECZ level (M€2017):</p> <p>Main ANSP -9.2% Other ANSP(s) -9.2% METSP(s) -4.8% NSA/EUROCONTROL +0.7% Total CZ -8.1%</p> | | | |
| <p>The difference between actual and planned TSUs (+9.5%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the main ANSP (HASP) retaining an amount of +5.4 M€2017.</p> | | | | | | |
| En route costs by entity | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -8.7% Other operating costs -13.6% Depreciation - Cost of capital - Exceptional costs - VFR exempted flights -0.2% Total Main ANSP -9.2%</p> | | | |
| <p>Actual real en route costs are -8.1% (-13.3 M€2017) lower than planned. This is the result of lower costs for the main ANSP, HASP (-9.2%, or -12.3 M€2017) and the NSA/EUROCONTROL (-4.8%, or -1.1 M€2017) and higher costs for the MET service provider (+0.7%, or +0.1 M€2017).</p> | | | | | | |
| En route costs for the main ANSP (HASP) at charging zone level | | | | | | |
| <p>Significantly lower than planned en route costs in real terms for HASP in 2022 (-9.2%, or -12.3 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs in real terms (-8.7%), partially due to the inflation index impact (+4.9 p.p.). No explanation of drivers for the difference between actual and determined staff costs was provided by Greece. - Significantly lower other operating costs in real terms (-13.6%), partially due to the inflation index impact (+4.9 p.p.). No explanation of drivers for the difference between actual and determined other operating costs was provided by Greece. - Equal with the plan depreciation and cost of capital. - Slightly lower deduction for VFR exempted flights (-0.2%). | | | | | | |

GREECE: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

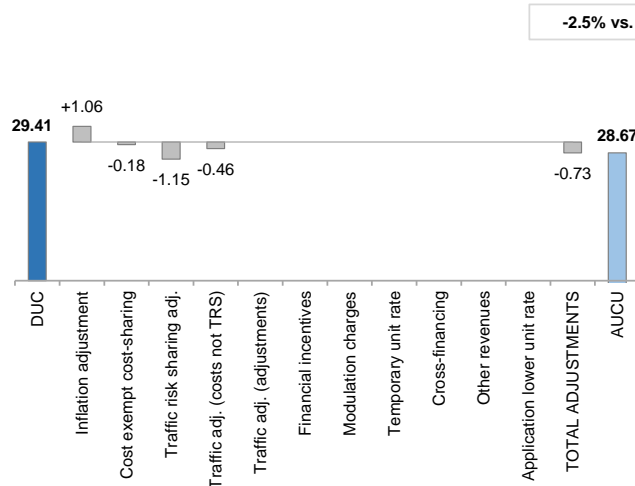
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Greece 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 33.23 |
| DUC to be charged retroactively | -3.82 |
| DUC | 29.41 |
| Inflation adjustment | 1.06 |
| Cost exempt from cost-sharing | -0.18 |
| Traffic risk sharing adjustment | -1.15 |
| Traffic adj. (costs not TRS) | -0.46 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -0.73 |
| AUCU | 28.67 |
| AUCU vs. DUC | -2.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

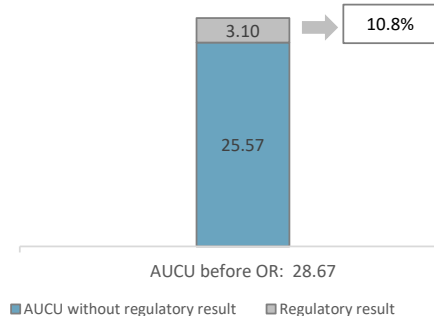
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|---------------|--------------|
| by item | New and existing investments | -53 | -0.01 |
| | Competent authorities and qualified entities costs | -565 | -0.09 |
| | Eurocontrol costs | -518 | -0.08 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -1 137 | -0.18 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| HASP | 19 845 | 3.09 |
| METSP(s) | € '000 | €/SU |
| Greece MET | 71 | 0.01 |
| Total charging zone | 19 915 | 3.10 |
| Actual cost for users*** | 183 985 | 28.67 |
| Regulatory result (% AUCU) | 10.8% | 10.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (28.67 €) is -2.5% lower than the nominal DUC (29.41 €). The difference between these two figures (-0.73 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+1.06 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.18 €/SU);
- the deduction of the traffic risk sharing adjustments (-1.15 €/SU); and,
- the deduction of the traffic adjustment (-0.46 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 10.8%.

GREECE: En route main ANSP (HASP)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-post RoE cannot be correctly calculated due to a very low total asset base, due to: 1) the exclusion of net current assets from the calculation of the total asset base starting from 2021, 2) a very low net book value of fixed assets (as these are nearly fully depreciated).

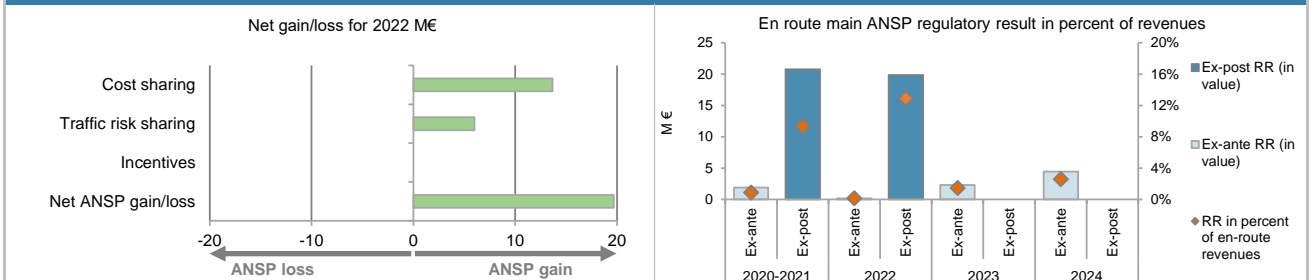
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 15 870 | 7 265 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 544 | 6 401 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | 0 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 16 414 | 13 666 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.1% | 9.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 219 549 | 141 481 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 2 451 | 6 003 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 18 865 | 19 669 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| HASP planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|---------------|---------------|---------------|--------------|--------------|
| Total asset base | 29 195 | 5 072 | 34 267 | 3 788 | 49 711 | 96 151 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.5% | 4.6% | 4.6% | 4.6% |
| RoE (in value) | 1 644 | 235 | 1 879 | 175 | 2 302 | 4 452 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 644 | 235 | 1 879 | 175 | 2 302 | 4 452 |
| Revenue for the en route charging zone | 95 244 | 124 304 | 219 549 | 141 481 | 159 357 | 174 398 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.7% | 0.2% | 0.9% | 0.1% | 1.4% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.5% | 4.6% | 4.6% | 4.6% |
| HASP actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 29 195 | 5 072 | 34 267 | 3 788 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.5% | 4.6% | | |
| RoE (in value) | 1 644 | 235 | 1 879 | 175 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 18 865 | 18 865 | 19 669 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 644 | 19 100 | 20 744 | 19 845 | | |
| Revenue for the en route charging zone | 95 244 | 127 300 | 222 544 | 153 885 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.7% | 15.0% | 9.3% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) (see Note 1) | 5.6% | N/A | N/A | N/A | | |

13. Focus on the main ANSP regulatory result on en route activity

**HASP net gain on activity in the Greece en route charging zone in the year 2022**

HASP reported a net gain of +19.7 M€, as a combination of a gain of +13.7 M€ arising from the cost sharing mechanism, with a gain of +6.0 M€ arising from the traffic risk sharing mechanism.

HASP overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+19.7 M€) and the actual RoE (+0.2 M€) amounts to +19.8 M€ (12.9% of the en route revenues).

GREECE: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Greece MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 192 | 195 | 387 | 195 | 196 | 192 |
| Revenue for the en route charging zone | 8 611 | 8 825 | 17 435 | 8 356 | 9 662 | 9 625 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.2% | 2.2% | 2.2% | 2.3% | 2.0% | 2.0% |
| Ex-ante RoE pre-tax rate (in %) | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |
| Greece MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 192 | 1 243 | 1 435 | 71 | | |
| Revenue for the en route charging zone | 8 611 | 8 841 | 17 451 | 8 674 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.2% | 14.1% | 8.2% | 0.8% | | |
| Ex-post RoE pre-tax rate (in %) | 2.0% | 14.4% | 7.9% | 0.7% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Greece (Greece MET) corresponds to 0.8% of the en route revenues. The ex-post RoE 0.7% is lower than planned 2.0%. | | | | | | |

GREECE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | | |
|---|-----------------|---------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Greece TCZ represents 1.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | | |
| Greece: Data from RP3 Performance Plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | | 15 654 397 | 19 092 162 | 34 746 559 | 20 693 722 | 25 207 051 | 28 639 822 |
| Inflation % | | 0.0% | 0.2% | | 4.5% | 1.3% | 1.6% |
| Inflation index (100 in 2017) | | 101.3 | 101.5 | | 106.5 | 107.9 | 109.7 |
| Real terminal costs (€2017) | | 15 457 426 | 18 818 671 | 34 276 097 | 19 462 644 | 23 501 099 | 26 460 501 |
| Total terminal service units | | 59 000 | 87 720 | 146 720 | 125 000 | 129 000 | 133 000 |
| Real terminal DUC per service unit (€2017) | | 261.99 | 214.53 | 233.62 | 155.70 | 182.18 | 198.95 |
| Greece: Actual data from Reporting Tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | | 15 654 397 | 14 605 437 | 30 259 834 | 20 557 648 | | |
| Inflation % | | 0.0% | 0.6% | | 9.3% | | |
| Inflation index (100 in 2017) | | 101.3 | 101.9 | | 111.4 | | |
| Real terminal costs (€2017) | | 15 457 426 | 14 333 997 | 29 791 423 | 18 534 509 | | |
| Total terminal service units | | 59 000 | 87 915 | 146 915 | 123 266 | | |
| Real terminal AUC per service unit (€2017) | | 261.99 | 163.04 | 202.78 | 150.36 | | |
| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -4 486 725 | -4 486 725 | -136 074 | | |
| | in % | - | -23.5% | -12.9% | -0.7% | | |
| Inflation % | in p.p. | 0.0 p.p. | 0.4 p.p. | | 4.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.4 p.p. | | 4.9 p.p. | | |
| Real terminal costs (€2017) | in value | 0 | -4 484 674 | -4 484 674 | -928 136 | | |
| | in % | - | -23.8% | -13.1% | -4.8% | | |
| Total terminal service units | in value | 0 | 195 | 195 | -1 734 | | |
| | in % | - | +0.2% | +0.1% | -1.4% | | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -51.49 | -30.84 | -5.34 | | |
| | in % | - | -24.0% | -13.2% | -3.4% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -3.4% (or -5.34 €2017) lower than the planned DUC. This results from the combination of lower than planned terminal costs in real terms (-4.8%, or -0.9 M€2017) and lower than planned TNSUs (-1.4%). It should be noted that actual inflation index in 2022 was +4.9 p.p. higher than planned.</p> <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (-1.4%) falls inside the ±2% dead band. Hence loss of terminal revenues is borne by the main ANSP (HASP) (see items 10 to 14).</p> <p>Terminal costs by entity</p> <p>Actual real terminal costs are -4.8% (-0.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, HASP (-6.6%, or -1.2 M€2017) and the MET service provider (-62.8%, or -0.3 M€2017) and higher costs for the NSA (+510.0%, or +0.6 M€2017).</p> <p>Terminal costs for the main ANSP (HASP) at charging zone level</p> <p>Lower than planned terminal costs in real terms for HASP in 2022 (-6.6%, or -1.2 M€2017) result from:</p> <ul style="list-style-type: none"> Slightly lower staff costs (-0.6%), mainly due to the inflation index impact (+4.9 p.p.) since in nominal terms costs are higher than planned, by +4.0%. Significantly lower other operating costs (-15.3%), partially due to the inflation index impact (+4.9 p.p.). No explanation of drivers for the difference between actual and determined other operating costs was provided by Greece. Significantly lower depreciation (-88.3%) and cost of capital (-94.2%), due to the delay in the projects implementation. Significantly higher deduction for VFR exempted flights (+19.7%). | | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Costs by entity at TCZ level (M€2017):</p> | | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

GREECE: Terminal charging zone

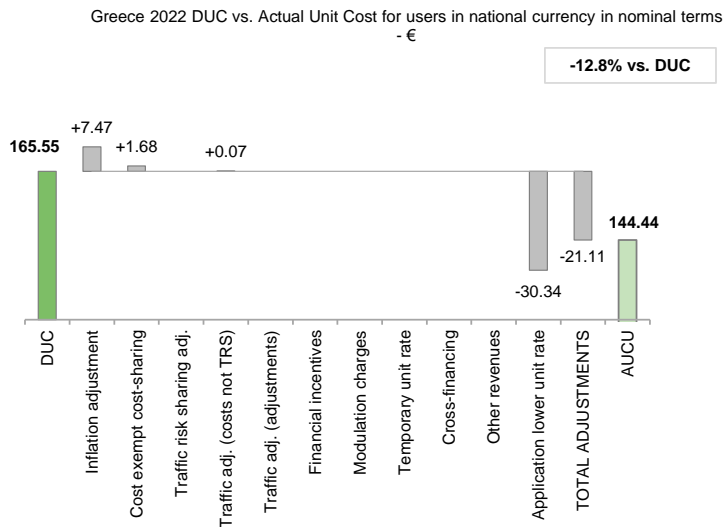
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 202.27 |
| DUC to be charged retroactively | -36.72 |
| DUC | 165.55 |
| Inflation adjustment | 7.47 |
| Cost exempt from cost-sharing | 1.68 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.07 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | -30.34 |
| Total adjustments | -21.11 |
| AUCU | 144.44 |
| AUCU vs. DUC | -12.8% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

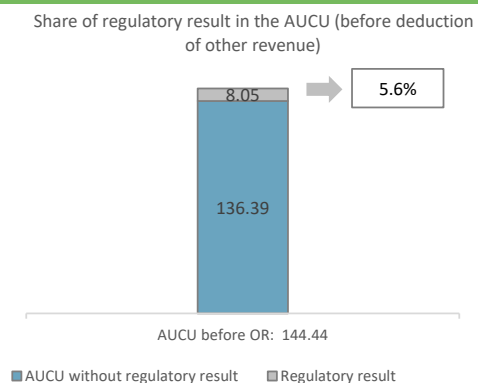
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|------------|-------------|
| by item | New and existing investments | -400 | -3.24 |
| | Competent authorities and qualified entities costs | 607 | 4.92 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | 207 | 1.68 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| HASP | 661 | 5.36 |
| METSP(s) | | |
| Greece-MET | 332 | 2.69 |
| Total charging zone | 993 | 8.05 |
| Actual cost for users*** | 17 805 | 144.44 |
| Regulatory result (% AUCU) | 5.6% | 5.6% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (144.44 €) is -12.8% lower than the nominal DUC (165.55 €). The difference between these two figures (-21.11 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+7.47 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+1.68 €/SU);
- the addition of the traffic adjustment (+0.07 €/SU) for the costs not subject to traffic risk sharing; and,
- application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-30.34 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 5.6%.

GREECE: Terminal main ANSP (HASP)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-post RR does not take into account the application of the lower unit rate as per Art. 29.6 (loss in revenues corresponds to -3.7 M€ for 2022).

Note 2: Ex-post RoE cannot be correctly calculated due to a very low total asset base, due to: 1) the exclusion of net current assets from the calculation of the total asset base starting from 2021, 2) a very low net book value of fixed assets (as these are nearly fully depreciated).

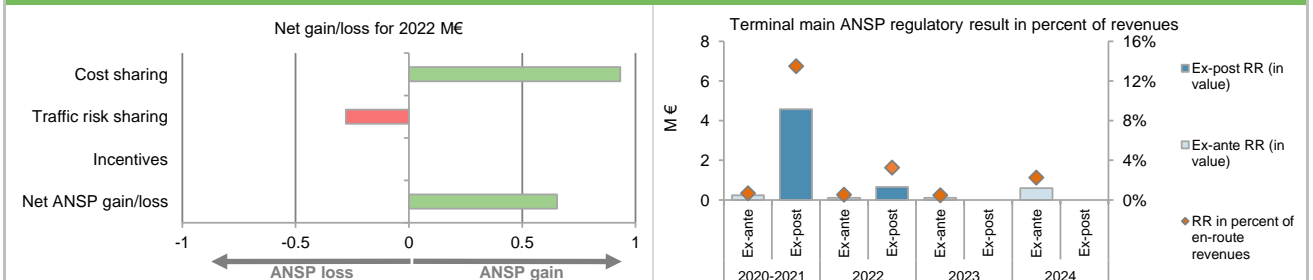
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|-------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 4 224 | 434 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 82 | 898 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -400 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 4 306 | 933 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.1% | -1.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 33 411 | 20 069 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 44 | -278 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 4 351 | 654 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| HASP planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 4 006 | 177 | 4 183 | 2 362 | 2 444 | 13 050 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.6% | 4.6% | 4.6% | 4.6% |
| RoE (in value) | 226 | 8 | 234 | 109 | 113 | 604 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 226 | 8 | 234 | 109 | 113 | 604 |
| Revenue for the terminal charging zone | 15 295 | 18 521 | 33 816 | 20 069 | 23 276 | 26 709 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.5% | 0.0% | 0.7% | 0.5% | 0.5% | 2.3% |
| Ex-ante RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.6% | 4.6% | 4.6% | 4.6% |
| HASP actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 4 006 | 177 | 4 183 | 137 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 5.6% | 4.6% | 5.6% | 4.6% | | |
| RoE (in value) | 226 | 8 | 234 | 6 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 4 351 | 4 351 | 654 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 1) | 226 | 4 359 | 4 584 | 661 | | |
| Revenue for the terminal charging zone | 15 295 | 18 648 | 33 942 | 20 289 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 1) | 1.5% | 23.4% | 13.5% | 3.3% | | |
| Ex-post RoE pre-tax rate (in %) (see Note 2) | 5.6% | N/A | N/A | N/A | | |

13. Focus on main ANSP regulatory result on terminal activity



HASP net gain on activity in the Greece terminal charging zone in the year 2022

HASP reported a net gain of +0.7 M€, as a combination of a gain of +0.93 M€ arising from the cost sharing mechanism, with a loss of -0.28 M€ arising from the traffic risk sharing mechanism.

HASP overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+0.7 M€) and the actual RoE (+0.006 M€) amounts to +0.7 M€ (3.3% of the terminal revenues).

GREECE: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|------|-------|------------|-------|------|------|
| Greece-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 272 | 506 | 778 | 506 | 506 | 506 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Greece-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 288 | 288 | 332 | | |
| Revenue for the terminal charging zone | 272 | 508 | 780 | 529 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 56.7% | 36.9% | 62.8% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Greece (Greece-MET) corresponds to 62.8% of the terminal revenues. It should be noted that Greece-MET does not charge cost of capital. See also Note 1 in item 10. | | | | | | |

GREECE: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|--------------|----------------|--|---------------|----------------|---------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Greece | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Greece | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greece: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 121 238 035 | 152 694 948 | 273 932 983 | 163 297 590 | 177 513 878 | 189 760 728 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 15 457 426 | 18 818 671 | 34 276 097 | 19 462 644 | 23 501 099 | 26 460 501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 136 695 461 | 171 513 619 | 308 209 080 | 182 760 234 | 201 014 977 | 216 221 229 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 88.7% | 89.0% | 88.9% | 89.4% | 88.3% | 87.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greece: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 121 238 035 | 132 409 771 | 253 647 806 | 150 000 760 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 15 457 426 | 14 333 997 | 29 791 423 | 18 534 509 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 136 695 461 | 146 743 768 | 283 439 229 | 168 535 268 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 88.7% | 90.2% | 89.5% | 89.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 0 | -24 769 851 | -24 769 851 | -14 224 965 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 0.0% | -14.4% | -8.0% | -7.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in p.p. | | 0.0 p.p. | 1.2 p.p. | 0.6 p.p. | -0.3 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>89%</td> <td>11%</td> </tr> <tr> <td>Actual</td> <td>89%</td> <td>11%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>89%</td> <td>11%</td> </tr> <tr> <td>Actual</td> <td>90%</td> <td>10%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>89%</td> <td>11%</td> </tr> <tr> <td>Actual</td> <td>89%</td> <td>11%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>89%</td> <td>11%</td> </tr> <tr> <td>Actual</td> <td>89%</td> <td>11%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>88%</td> <td>12%</td> </tr> <tr> <td>Actual</td> <td>88%</td> <td>12%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>88%</td> <td>12%</td> </tr> <tr> <td>Actual</td> <td>88%</td> <td>12%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 89% | 11% | Actual | 89% | 11% | 2021 | Determined | 89% | 11% | Actual | 90% | 10% | 2020-2021 | Determined | 89% | 11% | Actual | 89% | 11% | 2022 | Determined | 89% | 11% | Actual | 89% | 11% | 2023 | Determined | 88% | 12% | Actual | 88% | 12% | 2024 | Determined | 88% | 12% | Actual | 88% | 12% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 90% | 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 89% | 11% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 88% | 12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -7.8% (-14.2 M€2017) lower than planned, as en route costs are lower than planned by -13.3 M€2017 and terminal costs are lower than planned by -0.9 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (89.0%) is slightly lower than planned in the PP for 2022 (89.4%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HASP | 285 | 161 550 | 0.2% | 20 505 | 174 174 | 11.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Greece MET | | 195 | 8 862 | 2.2% | 403 | 9 204 | 4.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | 480 | 170 412 | 0.3% | 20 908 | 183 378 | 11.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Greece covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +20.9 M€ (+20.0 M€ for en route and +1.0 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 11.4% of gate-to-gate ANS revenues. This is higher than the return planned for the year (0.3% of gate-to-gate revenues).</p> | | | | <p>Greece gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Greece gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>0.3%</td> </tr> <tr> <td>Ex-post</td> <td>11.4%</td> </tr> </tbody> </table> | | | Result Type | Percentage | Ex-ante | 0.3% | Ex-post | 11.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Percentage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 0.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 11.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Hungary

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HUNGARY

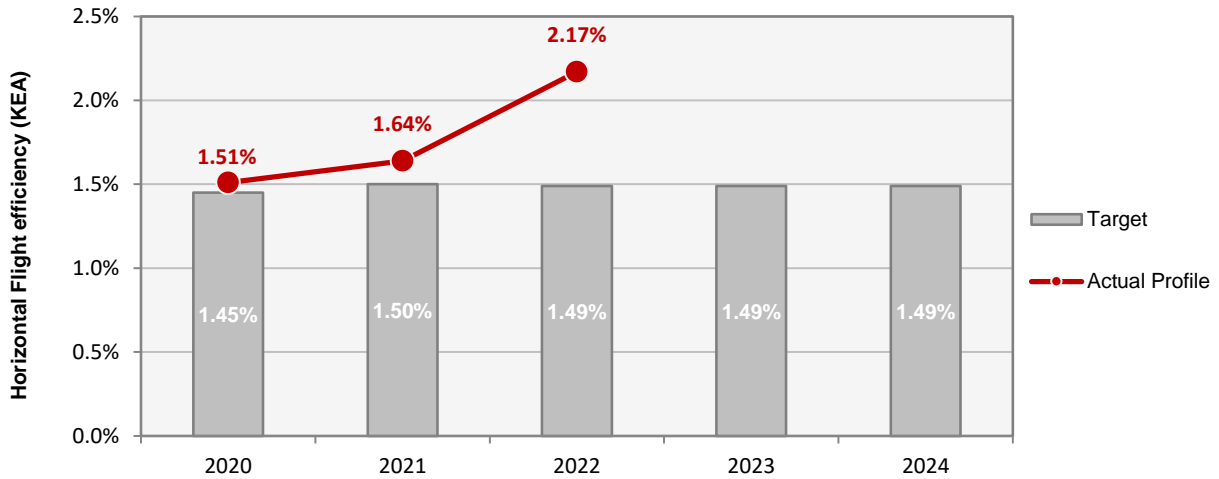
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Hungarocontrol | 100 | D | D | D | D | D |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet, or exceed, the RP3 target level. Maturity has further improved compared with 2021. The ANSP has achieved the maximum level for all components.</p> | | | | | | |

HUNGARY

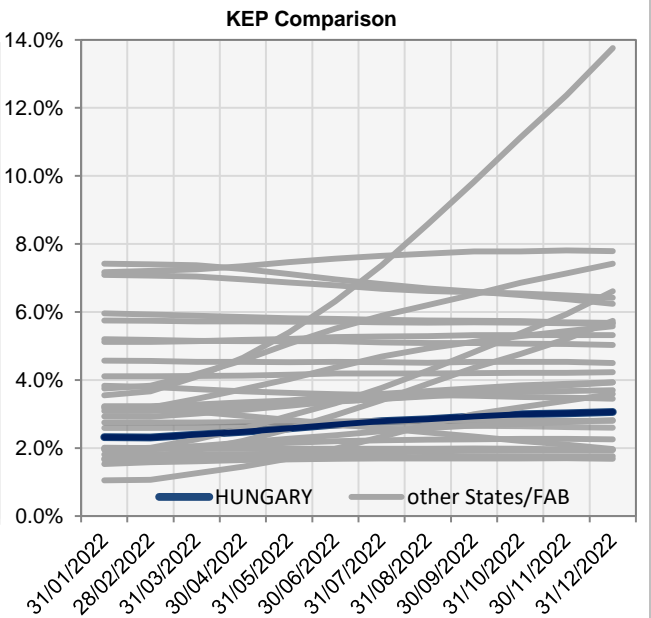
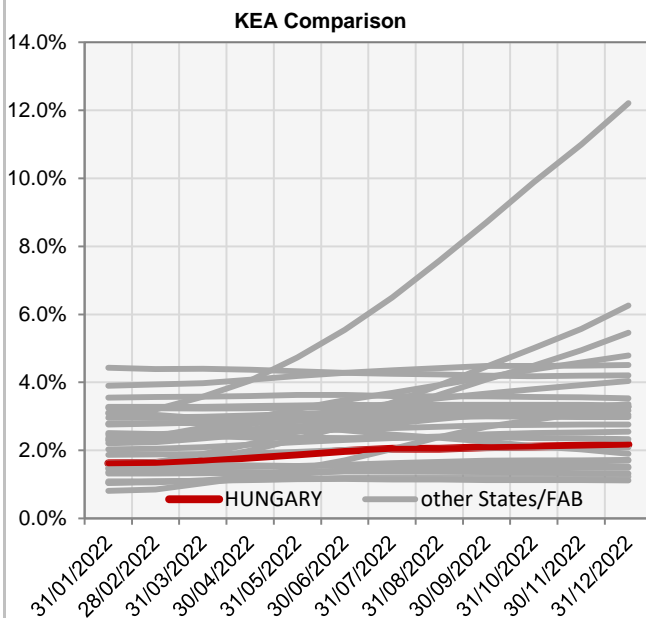
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.45% | 1.50% | 1.49% | 1.49% | 1.49% |
| Actual performance | 1.51% | 1.64% | 2.17% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.62% | 1.63% | 1.70% | 1.79% | 1.88% | 1.98% | 2.05% | 2.05% | 2.09% | 2.11% | 2.14% | 2.17% |
| KEP | 2.32% | 2.31% | 2.39% | 2.48% | 2.58% | 2.69% | 2.79% | 2.85% | 2.93% | 2.99% | 3.02% | 3.06% |
| KES | 2.13% | 2.13% | 2.22% | 2.32% | 2.44% | 2.57% | 2.69% | 2.78% | 2.87% | 2.94% | 2.99% | 3.04% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

HUNGARY

ENVIRONMENT - Airports

1. Overview

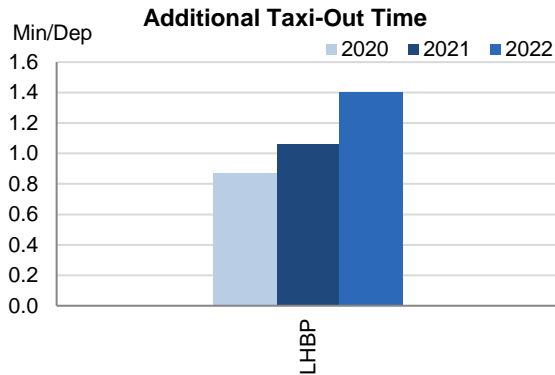
Hungary identified only its main airport Budapest as subject to RP3 monitoring. The Airport Operator Data Flow is correctly established and all environmental indicators can be monitored.

Traffic at Budapest airport in 2022 was still by 20% lower compared to 2019 regardless the increase of 80% with respect to 2021.

Both additional time indicators remained in 2022 lower than the 2019 values.

The share of CDO flights for Budapest has decreased to 25.8% which is below the overall RP3 value in 2022.

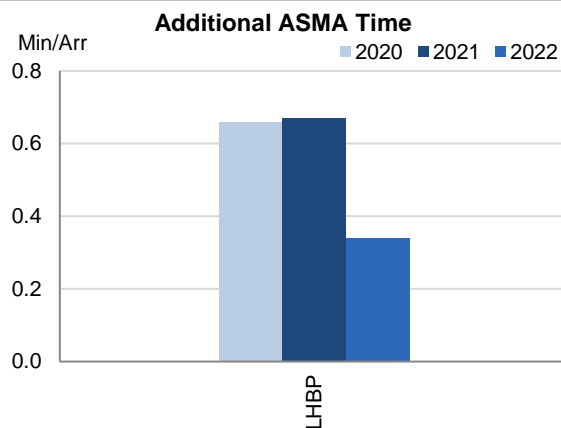
2. Additional Taxi-Out Time



Additional taxi-out times at Budapest (LHBP; 2019: 1.63 min/dep.; 2020: 0.87 min/dep.; 2021: 1.06 min/dep.; 2022: 1.4 min/dep.) have gradually increased during RP3.

According to the Hungarian monitoring report: *Since the actual value of this PI is still acceptable, no additional initiatives are needed.*

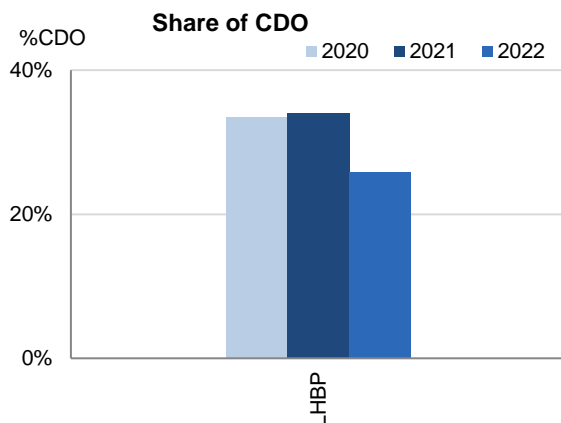
3. Additional ASMA Time



The additional times in the terminal airspace in 2022 have significantly decreased (LHBP; 2019: 0.85 min/arr.; 2020: 0.66 min/arr.; 2021: 0.67 min/arr.; 2022: 0.34 min/arr.) resulting in one of the lowest additional ASMA times amongst the SES monitored airports.

According to the Hungarian monitoring report: *As the actual value of this PI shows improvement compared to the previous year's value therefore no additional initiatives are needed.*

4. Share of arrivals applying CDO



The share of CDO flights for Budapest (LHBP) has decreased from 34.0% in 2021 to 25.8% in 2022. This value is below the overall RP3 value in 2022 (29.0%).

From April to October, the monthly values were below 25%.

According to the Hungarian monitoring report: *Since the actual value of this PI is still acceptable, no additional initiatives are needed.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Budapest/Ferihegy-LHBP | 0.87 | 1.06 | 1.4 | | | 0.66 | 0.67 | 0.34 | | | 33% | 34% | 26% | | |

HUNGARY

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The impact of military operations on civil traffic was very high in 2022. The war in Ukraine forced the Hungarian air defence and air force to create special training areas which were activated on an ad-hoc basis. Apart from those special air corridors were also established in order to allow the crossing of the allied forces UAVs.

The newly created military areas whose activation was on an ad-hoc basis had a negative effect on capacity, especially in the East sectors of Hungarian airspace.

The war against Ukraine forced the Hungarian air defence and air force to create special training areas which were activated on an ad-hoc basis. Apart from those special air corridors were also established in order to allow the crossing of the allied forces UAVs.

The new ad-hoc areas were not AMC manageable areas, therefore they were activated when it became necessary, so planning was much more difficult.

Military - related measures implemented or planned to improve capacity

During the implementation of the new ad-hoc activation areas, HungaroControl representatives tried to negotiate the vertical dimension of these areas in a way that makes fewer problems for overflight traffic.

Thanks to the good cooperation between the military and civil sides, these areas were active only when they were really needed and only for so long time which these special tasks in such a war environment required.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Hungary | 55% | 59% | 55% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Budapest | 55% | 59% | 55% | | |

Initiatives implemented or planned to improve PI#6

The war in Ukraine has had a negative impact on the efficiency of military airspace utilisation. Unfortunately, as long as there is a war going on in a neighbouring country, the effectiveness of military airspace utilization will remain uncertain.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Hungary | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Budapest | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

With the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated. Since that the entire CDR route concept is not applicable anymore in Hungary.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Hungary | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Budapest | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

With the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated. Since that the entire CDR route concept is not applicable anymore in Hungary.

HUNGARY

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--------------------------------|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.90 | 0.06 | 0.11 | 0.11 | 0.11 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. |
| Actual performance | 0.00 | 0.01 | 0.54 | | | |

NSA's assessment of capacity performance

The Ukrainian war has had a significant impact, in both operational and economic context of the service provision of ANS in Hungary.

Operational: due to the closure of the Ukrainian airspace and the war-related sanctions, there have been reroutings in the Hungarian airspace, having a net positive impact on the number of overflights.

Traffic to and from Russia and Ukraine is missing, on the other hand, reroutings to and from North Europe, and the Far East (and other parts of Asia), as well as new routes between Russia and non-EU states have brought a significant amount of additional traffic. The size of this impact has further increased towards the year-end, as the traffic between Europe and Asia started to gain momentum.

The Hungarian ANSP experienced a very strong recovery (with overflights already passing the 2019-level (by 20% on some days) in 2022), and this was only in part a consequence of the reroutings, there was also a very strong increase of the organic traffic on the South-East axis. Especially in the summer, when leisure traffic from Western Europe to Greece and Türkiye created an unexpected high demand on our flow.

In addition to the already high demand, ANS provision was impacted by the war in one more way: there were military airspaces to decrease capacity and to increase complexity in the Hungarian airspace.

Reaction time: there is very little the Hungarian ANSP could have done to react to the explosion of traffic demand in the short run (i.e. through the course of 2022). ATCO training was postponed under COVID (as an adaptation to the traffic decrease) and although already resumed, cannot be accelerated on short notice.

The originally planned number of ATCOs was not (and will not be) enough to manage the traffic without disruptions (regulations, delays and re-routings of the re-routings).

The war has caused a significant increase in traffic in Budapest ACC, resulting in traffic reaching pre-COVID 2019 levels already in 2022. Budapest ACC was able to manage the unexpected traffic growth with ca. 60% fewer delays than in 2019, which was though not enough to meet the target, but allowed air traffic on the Eastern border of the Network to operate without any particular problems.

Our view is that had the war not broken out, Budapest ACC would have been able to handle the 2022 traffic within its capacity target.

We believe that a very significant part of the excess delay was due to the war. We have flagged this issue to the PRB and EC and also to the Network Management Board already, and although we understand that in 317/2019 the definition of "exceptional event" does not by word apply to our situation, we still believe that by the legislative intent a regular war in the neighbouring country, causing significant disruptions does qualify as an "exceptional event".

Monitoring process for capacity performance

The war has caused a significant increase in traffic in Budapest ACC, resulting in traffic reaching pre-COVID 2019 levels already in 2022.

Budapest ACC was able to manage the unexpected traffic growth with ca 60% fewer delays than in 2019, which was though not enough to meet the target, but allowed air traffic on the Eastern border of the Network to operate without any particular problems.

Capacity Planning

Capacity planning with NM for the year 2022 was completed in January with the conclusion that there will be no capacity issue.

Unfortunately at the end of February Russians started a war against Ukraine, and due to the closure of the Ukrainian airspace, all flights which have used that airspace for overflight before were forced to reroute via our airspace.

Unfortunately, the capacity planning process did not follow this huge rerouting and we were able to introduce only a few measures for summer in order to manage the extremely increased demand.

ATCO in OPS (FTE)

| Budapest ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Planned (Perf Plan) | - | - | 111 | 119 | 116 | 119 | |
| Actual | 106 | 101 | 109 | 115 | | | |

Application of Corrective Measures for Capacity (if applicable)

The war has caused a significant increase in traffic in Budapest ACC, resulting in traffic reaching pre-COVID 2019 levels already in 2022. This was unexpected and the measures which were introduced during the first part of the year could only mitigate the capacity shortage.

Since there is no sign that the war in Ukraine will be over in 2023 and thus the traffic demand in Budapest ACC will remain very high, further adjustments are needed on terms of sector capacities and in the availability of ATCOs, through fine-tuning of the ATCO rostering.

Summary of capacity performance

Hungary experienced an increase in traffic from 491k flights in 2021, with practically zero ATFM delays, to 897k flights in 2022 with 481k minutes of en route AFTM delay.

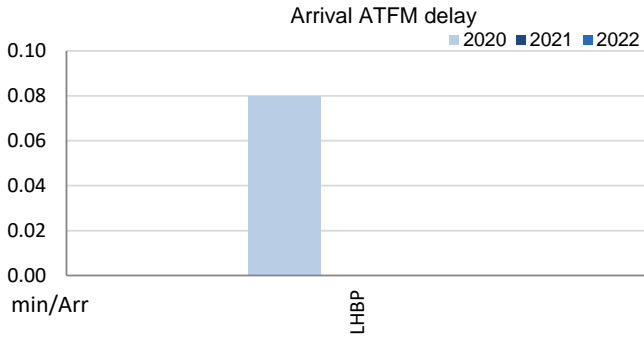
The traffic level in 2022 was higher than the 892k flights handled in 2019, which encountered treble the 2022 delays: 1.4 million minutes of ATFM delay.

There were an additional 318k minutes of en route ATFM delay originating in the Budapest ACC that were re-attributed to DFS (272k) and DSN (46k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.

1. Overview

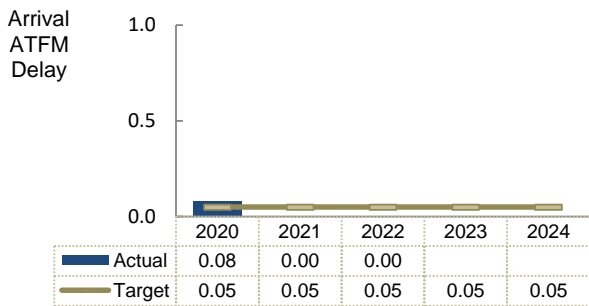
Hungary identified only its main airport Budapest as subject to RP3 monitoring. The Airport Operator Data Flow is correctly established and all capacity indicators can be monitored. Traffic at Budapest airport in 2022 was still by 20% lower compared to 2019 regardless the increase of 80% with respect to 2021. Like in 2021, no arrival ATFM delays were observed in the entire 2022 at Budapest while ATFM slot adherence has slightly deteriorated (2022: 95.4%; 2021: 96.0%).

2. Arrival ATFM Delay



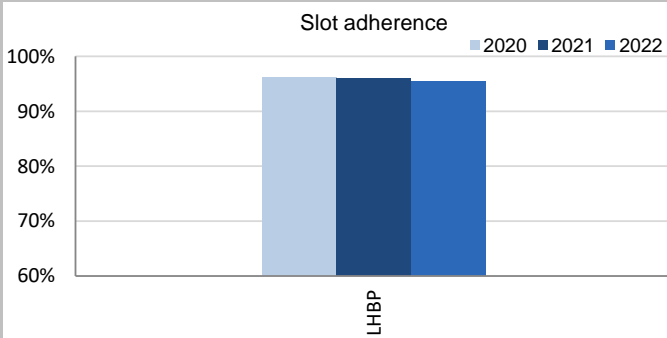
No arrival ATFM delays were recorded in the entire 2022 at Budapest (LHBP: 2019: 0.03 min/arr.; 2020: 0.08 min/arr.; 2021: 0 min/arr.; 2022: 0 min/arr.) Regarding the Russian war, the Hungarian monitoring report mentions that since all cancelled flights to/and from Russia and Ukraine represented less than 10% of LHBP traffic, and that there were no war related delays at LHBP in 2022.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Budapest's ATFM slot compliance was 95.4%, very similar to the performance in 2021 (96%). With regard to the 4.6% of flights that did not adhere, 1.5% was early and 3.1% was late.

5. ATC Pre-departure Delay

The performance in terms of ATC pre-departure delay at Budapest has further improved with respect to the previous years (LHBP; 2019: 0.30 min/dep.; 2020: 0.16 min/dep.; 2021: 0.14 min/dep.; 2022: 0.10 min/dep.)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Budapest significantly increased in 2022 (LHBP: 2020: 12.58 min/dep.; 2021: 15.61 min/dep.; 2022: 21.12 min/dep.). The highest delays per flight were observed in June and July averaging more than 30 min/dep.

According to the Hungarian monitoring report: *The actual performance in this respect was a bit worse than in the previous years, which could be explained with the overall staffing issues at the LHBP. After COVID-19 pandemic similar staffing problems were experienced at many airport in Europe.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Budapest/Ferihegy-LHBP | 0.08 | 0 | 0 | | | 96.2% | 96.0% | 95.4% | | | 0.16 | 0.14 | 0.10 | | | 12.58 | 15.61 | 21.12 | | |

HUNGARY: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Hungary ECZ represents 1.6% of the SES en route ANS actual costs in 2022
- National currency: HUF Exchange rates (1 EUR=) 2017: 308.993 HUF 2022: 390.405 HUF
- Performance Plan: RP3 draft performance plan dated 21 February 2022 and found consistent as per Commission Decision (EU) 2022/775 of 13 April 2022
The final version of the plan was adopted and published by Hungary in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Hungary: Data from RP3 Performance Plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| En route costs (nominal HUF) | | 29 197 333 644 | 31 014 608 143 | 60 211 941 787 | 38 458 992 221 | 39 239 032 047 | 40 877 334 912 |
| Inflation % | | 3.4% | 3.6% | | 3.5% | 3.3% | 3.0% |
| Inflation index (100 in 2017) | | 110.0 | 114.0 | | 118.0 | 121.9 | 125.5 |
| Real en route costs (HUF2017) | | 27 211 963 371 | 28 310 064 723 | 55 522 028 094 | 34 177 552 178 | 34 118 483 949 | 34 826 054 863 |
| Total en route service units | | 1 423 059 | 1 726 646 | 3 149 705 | 2 419 349 | 2 881 187 | 3 181 615 |
| Real en route DUC per service unit (HUF2017) | | 19 122.17 | 16 395.99 | 17 627.69 | 14 126.76 | 11 841.82 | 10 946.03 |
| Real en route DUC per service unit (€2017) | | 61.89 | 53.06 | 57.05 | 45.72 | 38.32 | 35.42 |
| Hungary: Actual data from Reporting Tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal HUF) | | 29 197 333 644 | 29 890 098 035 | 59 087 431 679 | 36 258 306 921 | | |
| Inflation % | | 3.4% | 5.2% | | 15.3% | | |
| Inflation index (100 in 2017) | | 110.0 | 115.7 | | 133.4 | | |
| Real en route costs (HUF2017) | | 27 211 963 371 | 27 022 897 051 | 54 234 860 422 | 29 759 968 223 | | |
| Total en route service units | | 1 423 059 | 1 726 646 | 3 149 705 | 3 184 085 | | |
| Real en route AUC per service unit (HUF2017) | | 19 122.17 | 15 650.51 | 17 219.03 | 9 346.47 | | |
| Real en route AUC per service unit (€2017) | | 61.89 | 50.65 | 55.73 | 30.25 | | |
| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal HUF) | in value | 0 | -1 124 510 108 | -1 124 510 108 | -2 200 685 300 | | |
| | in % | - | -3.6% | -1.9% | -5.7% | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.6 p.p. | | 11.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.7 p.p. | | 15.4 p.p. | | |
| Real en route costs (HUF2017) | in value | 0 | -1 287 167 672 | -1 287 167 672 | -4 417 583 955 | | |
| | in % | - | -4.5% | -2.3% | -12.9% | | |
| Total en route service units | in value | 0 | 0 | 0 | 764 736 | | |
| | in % | - | -0.0% | - | +31.6% | | |
| Real en route unit cost per service unit (HUF2017) | in value | 0.00 | -745.47 | -408.66 | -4 780.28 | | |
| | in % | - | -4.5% | -2.3% | -33.8% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -2.41 | -1.32 | -15.47 | | |
| | in % | - | -4.5% | -2.3% | -33.8% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -33.8% (or -4 780.28 HUF2017, -15.47 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+31.6%) and significantly lower than planned en route costs in real terms (-12.9%, or -4 417.6 MHUF2017, -14.3 M€2017). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+31.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (HungaroControl) retaining an amount of +3.6 M€2017.

En route costs by entity

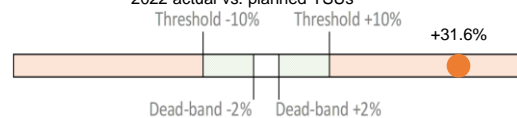
Actual real en route costs are -12.9% (-14.3 M€2017) lower than planned. This is the result of lower costs for the main ANSP, HungaroControl (-13.3%, or -12.7 M€2017), the NSA/EUROCONTROL (-10.9%, or -1.2 M€2017) and the MET service provider (-10.4%, or -0.3 M€2017).

En route costs for the main ANSP (HungaroControl) at charging zone level

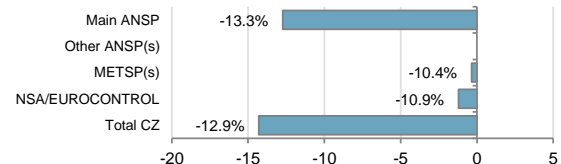
Significantly lower than planned en route costs in real terms for HungaroControl in 2022 (-13.3%, or -12.7 M€2017) result from:

- Significantly lower staff costs (-14.1%), due to the postponement of the pay rise for non-ATCO staff and lower than planned execution of the non-ATCO recruitment plan. This result is also impacted by the higher actual inflation index (+15.4 p.p.).
- Significantly lower other operating costs (-26.8%), mainly due to the slower execution of procurement processes and lower travel and training costs. This result is also impacted by the higher actual inflation index (+15.4 p.p.).
- Significantly lower depreciation (-9.8%), due to changes in the investment commissioning schedule.
- Significantly higher cost of capital (+37.4%), understood to be mainly due to a change (correction) in the methodology used to calculate the net current assets (inclusion of pension related obligations towards ATCOs).

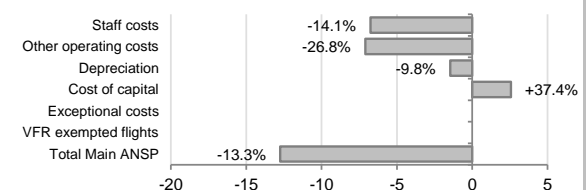
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



HUNGARY: En route charging zone

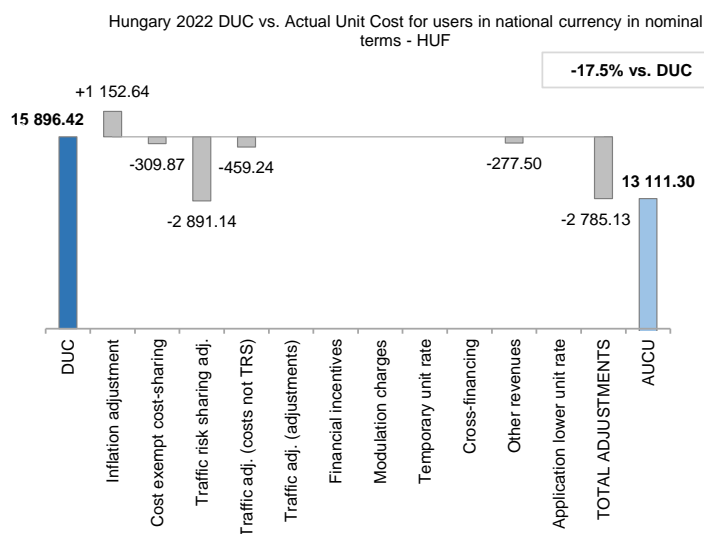
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | HUF/SU | €/SU |
|---------------------------------|------------------|---------------|
| Initial DUC charged | 15 896.42 | 40.72 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 15 896.42 | 40.72 |
| Inflation adjustment | 1 152.64 | 2.95 |
| Cost exempt from cost-sharing | -309.87 | -0.79 |
| Traffic risk sharing adjustment | -2 891.14 | -7.41 |
| Traffic adj. (costs not TRS) | -459.24 | -1.18 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -277.50 | -0.71 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | -2 785.13 | -7.13 |
| AUCU | 13 111.30 | 33.58 |
| AUCU vs. DUC | -17.5% | -17.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

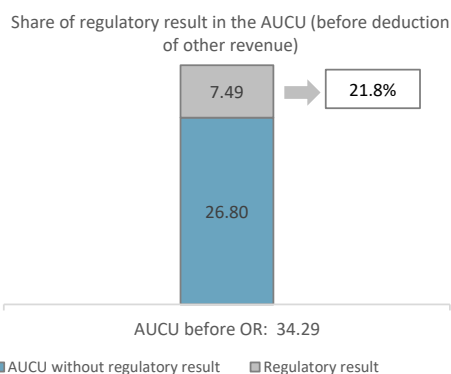
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | HUF '000 | € '000 | HUF/SU | €/SU |
|---|--|-----------------|---------------|----------------|--------------|
| by item | New and existing investments | -612 257 | -1 568 | -192.29 | -0.49 |
| | Competent authorities and qualified entities costs | -349 932 | -896 | -109.90 | -0.28 |
| | Eurocontrol costs | -24 468 | -63 | -7.68 | -0.02 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -986 656 | -2 527 | -309.87 | -0.79 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | HUF '000 | € '000 | HUF/SU | €/SU |
|-----------------------------------|-------------------|----------------|------------------|--------------|
| HungaroControl | 9 199 267 | 23 563 | 2 889.14 | 7.40 |
| METSP(s) | HUF '000 | € '000 | HUF/SU | €/SU |
| Hungary MET | 110 102 | 282 | 34.58 | 0.09 |
| Total charging zone | 9 309 369 | 23 845 | 2 923.72 | 7.49 |
| Actual cost for users*** | 42 631 078 | 109 197 | 13 388.80 | 34.29 |
| Regulatory result (% AUCU) | 21.8% | 21.8% | 21.8% | 21.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (13 111.30 HUF or 33.58 €) is -17.5% lower than the nominal DUC (15 896.42 HUF or 40.72 €). The difference between these two figures (-2 785.13 HUF/SU or -7.13 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+1 152.64 HUF/SU or +2.95 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-309.87 HUF/SU or -0.79 €/SU);
- the deduction of the traffic risk sharing adjustment (-2 891.14 HUF/SU or -7.41 €/SU);
- the deduction of the traffic adjustment (-459.24 HUF/SU or -1.18 €/SU) for the costs not subject to traffic risk sharing, and,
- the deduction of the other revenues (-277.50 HUF/SU or -0.71 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 21.8%.

HUNGARY: En route main ANSP (HungaroControl)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

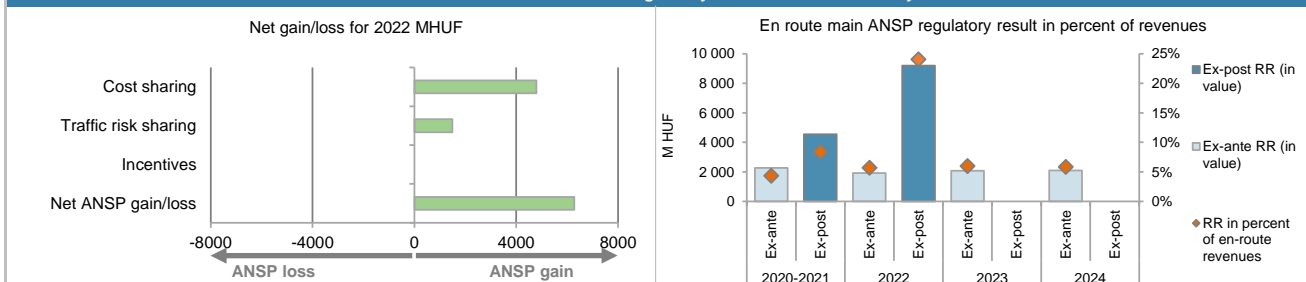
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|------------------|------------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 944 288 | 1 821 274 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 324 966 | 3 544 770 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 938 160 | -570 946 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 207 414 | 4 795 098 | | |
| Traffic risk sharing (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.0% | 31.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 52 066 684 | 33 832 901 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 0 | 1 488 648 | | |
| Incentives (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (HUF '000) | 2 207 414 | 6 283 745 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 6 164 | 16 095 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| HungaroControl planned regulatory result (HUF '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|------------------|------------------|------------------|------------------|------------------|
| Total asset base | 20 202 859 | 25 568 696 | 45 771 555 | 29 670 934 | 31 664 881 | 31 338 280 |
| Proportion of financing through equity (in %) | 100% | 95% | 97% | 81% | 82% | 87% |
| RoE pre-tax rate (in %) | 4.4% | 5.8% | 5.1% | 8.0% | 8.0% | 7.7% |
| RoE (in value) | 878 824 | 1 395 676 | 2 274 500 | 1 922 484 | 2 070 034 | 2 099 551 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 878 824 | 1 395 676 | 2 274 500 | 1 922 484 | 2 070 034 | 2 099 551 |
| Revenue for the en route charging zone | 25 754 350 | 27 127 082 | 52 881 433 | 33 832 901 | 34 621 310 | 36 094 907 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.4% | 5.1% | 4.3% | 5.7% | 6.0% | 5.8% |
| Ex-ante RoE pre-tax rate (in %) | 4.4% | 5.8% | 5.1% | 8.0% | 8.0% | 7.7% |
| HungaroControl actual regulatory result (HUF '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 20 202 859 | 25 851 125 | 46 053 985 | 40 776 526 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 4.4% | 5.6% | 5.1% | 7.2% | | |
| RoE (in value) | 878 824 | 1 458 003 | 2 336 828 | 2 915 522 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 2 207 414 | 2 207 414 | 6 283 745 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 878 824 | 3 665 418 | 4 544 242 | 9 199 267 | | |
| Revenue for the en route charging zone | 25 754 350 | 28 390 208 | 54 144 559 | 38 295 373 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.4% | 12.9% | 8.4% | 24.0% | | |
| Ex-post RoE pre-tax rate (in %) | 4.4% | 14.2% | 9.9% | 22.6% | | |

13. Focus on the main ANSP regulatory result on en route activity



HungaroControl net gain on activity in the Hungary en route charging zone in the year 2022

HungaroControl reported a net gain of +6 283.7 MHUF, as a combination of a gain of +4 795.1 MHUF arising from the cost sharing mechanism, with a gain of +1 488.6 MHUF arising from the traffic risk sharing mechanism.

HungaroControl overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+6 283.7 MHUF) and the actual RoE (+2 915.5 MHUF) amounts to +9 199.3 MHUF (24.0% of the en route revenues). The resulting ex-post rate of return on equity is 22.6%, which is higher than the 8.0% planned in the PP.

HUNGARY: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|---------|---------|------------|-----------|-----------|-----------|
| Hungary MET planned regulatory result (HUF '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 20 007 | 21 730 | 41 737 | 32 878 | 33 804 | 34 758 |
| Revenue for the en route charging zone | 654 689 | 739 348 | 1 394 037 | 1 182 849 | 1 096 686 | 1 163 815 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.1% | 2.9% | 3.0% | 2.8% | 3.1% | 3.0% |
| Ex-ante RoE pre-tax rate (in %) | 3.5% | 3.3% | 3.4% | 3.5% | 3.5% | 3.5% |
| Hungary MET actual regulatory result (HUF '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 20 007 | 42 859 | 62 865 | 110 102 | | |
| Revenue for the en route charging zone | 654 689 | 730 297 | 1 384 986 | 1 266 862 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.1% | 5.9% | 4.5% | 8.7% | | |
| Ex-post RoE pre-tax rate (in %) | 3.5% | 7.3% | 5.4% | 18.3% | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Hungary (Hungary MET) corresponds to 8.7% of the en route revenues. The ex-post RoE 18.3% is higher than planned 3.5%. | | | | | | |

HUNGARY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|-------------------|--|-------------------|-------------------|-------------------|
| <ul style="list-style-type: none"> Hungary TCZ represents 1.6% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: HUF Exchange rates (1 EUR=) 2017: 308.993 HUF 2022: 390.405 HUF Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Hungary: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal HUF) | 5 238 902 555 | 5 740 183 012 | 10 979 085 566 | 7 574 897 694 | 8 784 670 551 | 9 722 701 447 |
| Inflation % | 3.4% | 3.6% | | 3.5% | 3.3% | 3.0% |
| Inflation index (100 in 2017) | 110.0 | 114.0 | | 118.0 | 121.9 | 125.5 |
| Real terminal costs (HUF2017) | 4 859 542 224 | 5 199 436 229 | 10 058 978 452 | 6 691 445 503 | 7 741 099 280 | 8 469 413 653 |
| Total terminal service units | 31 092 | 34 804 | 65 896 | 57 181 | 69 033 | 81 748 |
| Real terminal DUC per service unit (HUF2017) | 156 297.88 | 149 391.66 | 152 650.22 | 117 022.91 | 112 135.67 | 103 603.43 |
| Real terminal DUC per service unit (€2017) | 505.83 | 483.48 | 494.02 | 378.72 | 362.91 | 335.29 |
| Hungary: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal HUF) | 5 238 902 555 | 5 455 319 252 | 10 694 221 806 | 7 483 324 405 | | |
| Inflation % | 3.4% | 5.2% | | 15.3% | | |
| Inflation index (100 in 2017) | 110.0 | 115.7 | | 133.4 | | |
| Real terminal costs (HUF2017) | 4 859 542 224 | 4 897 850 677 | 9 757 392 901 | 6 106 733 860 | | |
| Total terminal service units | 31 092 | 34 804 | 65 896 | 64 463 | | |
| Real terminal AUC per service unit (HUF2017) | 156 297.88 | 140 726.42 | 148 073.51 | 94 732.61 | | |
| Real terminal AUC per service unit (€2017) | 505.83 | 455.44 | 479.21 | 306.58 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal HUF) | in value 0 | -284 863 760 | -284 863 760 | -91 573 289 | | |
| | in % - | -5.0% | -2.6% | -1.2% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.6 p.p. | | 11.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.7 p.p. | | 15.4 p.p. | | |
| Real terminal costs (HUF2017) | in value 0 | -301 585 552 | -301 585 552 | -584 711 643 | | |
| | in % - | -5.8% | -3.0% | -8.7% | | |
| Total terminal service units | in value 0 | 0 | 0 | 7 282 | | |
| | in % - | -0.0% | - | +12.7% | | |
| Real terminal unit cost per service unit (HUF2017) | in value 0.00 | -8 665.24 | -4 576.72 | -22 290.30 | | |
| | in % - | -5.8% | -3.0% | -19.0% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -28.04 | -14.81 | -72.14 | | |
| | in % - | -5.8% | -3.0% | -19.0% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>+12.7%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was -19.0% (or -22 290.3 HUF2017, -72.14 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TNSUs (+12.7%) and significantly lower than planned terminal costs in real terms (-8.7%, or -584.7 MHUF2017, -1.9 M€2017). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.</p> <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+12.7%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (HungaroControl) retaining an amount of +0.8 M€2017.</p> <p>Terminal costs by entity</p> <p>Actual real terminal costs are -8.7% (-1.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, HungaroControl (-8.9%, or -1.9 M€2017) and the MET service provider (-6.9%, or -0.02 M€2017) and higher costs for the NSA (+0.3%, or +0.001 M€2017).</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal costs for the main ANSP (HungaroControl) at charging zone level</p> <p>Lower than planned terminal costs in real terms for HungaroControl in 2022 (-8.9%, or -1.9 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-16.5%), due to the postponement of the pay rise for non-ATCO staff and lower than planned execution of the non-ATCO recruitment plan. This result is also impacted by the higher actual inflation index (+15.4 p.p.). - Significantly lower other operating costs (-15.5%). This result is also impacted by the higher actual inflation index (+15.4 p.p.). - Significantly lower depreciation (-7.5%), due to changes in the investment commissioning schedule. - Significantly higher cost of capital (+48.3%), understood to be mainly due to a change (correction) in the methodology used to calculate the net current assets (inclusion of pension related obligations towards ATCOs). | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

HUNGARY: Terminal charging zone

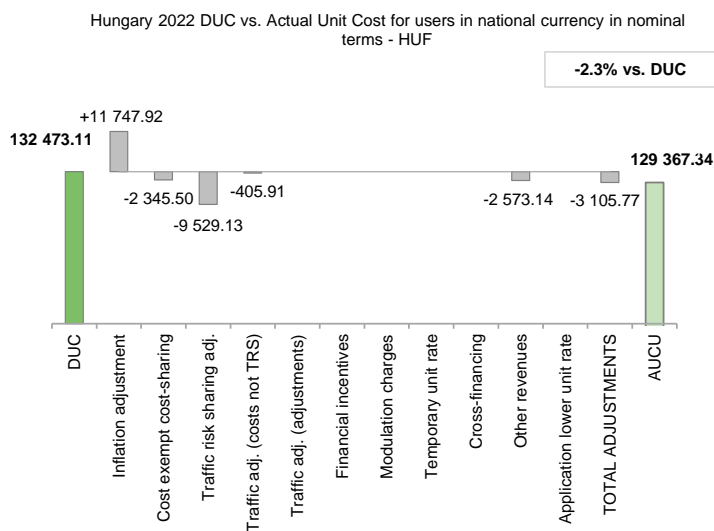
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | HUF/SU | €/SU |
|---------------------------------|-------------------|---------------|
| Initial DUC charged | 132 473.11 | 339.32 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 132 473.11 | 339.32 |
| Inflation adjustment | 11 747.92 | 30.09 |
| Cost exempt from cost-sharing | -2 345.50 | -6.01 |
| Traffic risk sharing adjustment | -9 529.13 | -24.41 |
| Traffic adj. (costs not TRS) | -405.91 | -1.04 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -2 573.14 | -6.59 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | -3 105.77 | -7.96 |
| AUCU | 129 367.34 | 331.37 |
| AUCU vs. DUC | -2.3% | -2.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

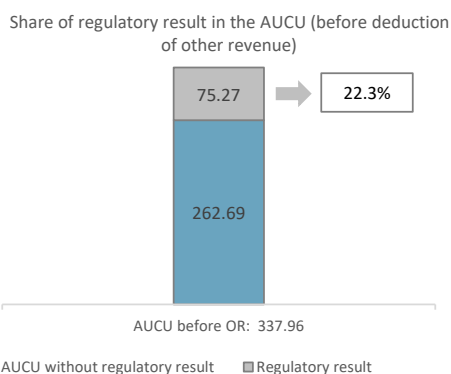
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | HUF '000 | € '000 | HUF/SU | €/SU |
|---|--|-----------------|-------------|------------------|--------------|
| by item | New and existing investments | -151 537 | -388 | -2 350.77 | -6.02 |
| | Competent authorities and qualified entities costs | 339 | 1 | 5.27 | 0.01 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -151 198 | -387 | -2 345.50 | -6.01 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | HUF '000 | € '000 | HUF/SU | €/SU | |
|-----------------------------------|------------------|---------------|-------------------|---------------|------|
| HungaroControl | 1 880 536 | 4 817 | 29 172.41 | 74.72 | |
| METSP(s) | | HUF '000 | € '000 | HUF/SU | €/SU |
| Hungary-MET | 13 839 | 35 | 214.68 | 0.55 | |
| Total charging zone | 1 894 375 | 4 852 | 29 387.09 | 75.27 | |
| Actual cost for users*** | 8 505 259 | 21 786 | 131 940.48 | 337.96 | |
| Regulatory result (% AUCU) | 22.3% | 22.3% | 22.3% | 22.3% | |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (129 367.34 HUF or 331.37 €) is -2.3% lower than the nominal DUC (132 473.11 HUF or 339.32 €). The difference between these two figures (-3 105.77 HUF/SU or -7.96 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+11 747.92 HUF/SU or +30.09 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-2 345.50 HUF/SU or -6.01 €/SU);
- the deduction of the traffic risk sharing adjustment (-9 529.13 HUF/SU or -24.41 €/SU);
- the deduction of the traffic adjustment (-405.91 HUF/SU or -1.04 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-2 573.14 HUF/SU or -6.59 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 22.3%.

HUNGARY: Terminal main ANSP (HungaroControl)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

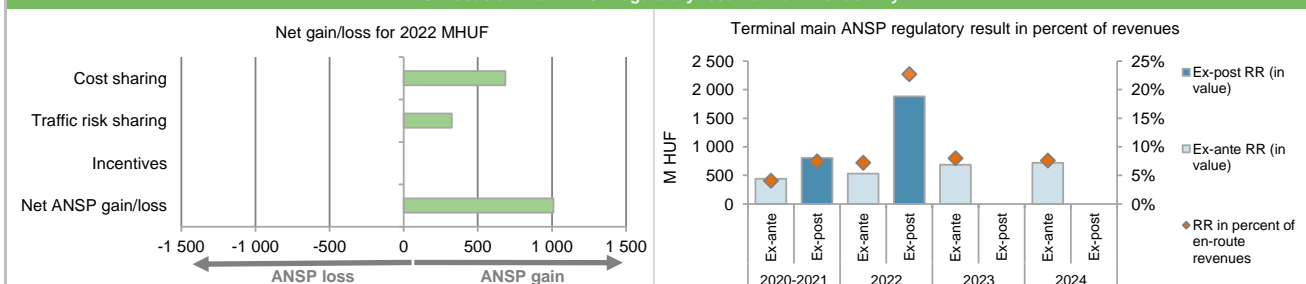
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|----------------|------------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 284 849 | 95 070 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 66 668 | 747 735 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -45 464 | -157 690 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 306 054 | 685 115 | | |
| Traffic risk sharing (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.0% | 12.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 10 682 167 | 7 369 440 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 0 | 324 255 | | |
| Incentives (HUF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (HUF '000) | 306 054 | 1 009 370 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 855 | 2 585 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| HungaroControl planned regulatory result (HUF '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|------------------|------------------|-------------------|------------------|------------------|------------------|
| Total asset base | 3 944 962 | 4 958 200 | 8 903 163 | 8 214 232 | 10 493 694 | 10 778 204 |
| Proportion of financing through equity (in %) | 100% | 95% | 97% | 81% | 82% | 87% |
| RoE pre-tax rate (in %) | 4.4% | 5.8% | 5.1% | 8.0% | 8.0% | 7.7% |
| RoE (in value) | 171 606 | 270 645 | 442 251 | 532 229 | 686 006 | 722 101 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 171 606 | 270 645 | 442 251 | 532 229 | 686 006 | 722 101 |
| Revenue for the terminal charging zone | 5 168 516 | 5 635 745 | 10 804 261 | 7 369 440 | 8 584 481 | 9 507 231 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.3% | 4.8% | 4.1% | 7.2% | 8.0% | 7.6% |
| Ex-ante RoE pre-tax rate (in %) | 4.4% | 5.8% | 5.1% | 8.0% | 8.0% | 7.7% |
| HungaroControl actual regulatory result (HUF '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 3 944 962 | 5 819 143 | 9 764 105 | 12 184 142 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 4.4% | 5.6% | 5.1% | 7.2% | | |
| RoE (in value) | 171 606 | 328 200 | 499 806 | 871 166 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 306 054 | 306 054 | 1 009 370 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 171 606 | 634 254 | 805 860 | 1 880 536 | | |
| Revenue for the terminal charging zone | 5 168 516 | 5 656 950 | 10 825 466 | 8 283 741 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.3% | 11.2% | 7.4% | 22.7% | | |
| Ex-post RoE pre-tax rate (in %) | 4.4% | 10.9% | 8.3% | 15.4% | | |

13. Focus on main ANSP regulatory result on terminal activity



HungaroControl net gain on activity in the Hungarian terminal charging zone in the year 2022

HungaroControl reported a net gain of +1 009.4 MHUF, as a combination of a gain of +685.1 MHUF arising from the cost sharing mechanism, with a gain of +324.3 MHUF arising from the traffic risk sharing mechanism.

HungaroControl overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1 009.4 MHUF) and the actual RoE (+871.2 MHUF) amounts to +1 880.5 MHUF (22.7% of the terminal revenues). The resulting ex-post rate of return on equity is 15.4%, which is higher than the 8.0% planned in the PP.

HUNGARY: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|------|------|------------|--------|--------|--------|
| Hungary-MET planned regulatory result (HUF '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 0 | 0 | 0 | 78 917 | 63 104 | 67 841 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Hungary-MET actual regulatory result (HUF '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 13 839 | | |
| Revenue for the terminal charging zone | 0 | 0 | 0 | 94 639 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 14.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | 38.0% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Hungary (Hungary MET) corresponds to 14.6% of the terminal revenues. The ex-post RoE is 38.0%. It should be noted that no cost of capital (and associated assumptions) was included in the PP. | | | | | | |

HUNGARY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|-------------------|---------------|---|-------------------|---------------|--------------|-----------------------|------------|------|---------|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|--|--|------|------------|-----|-----|--------|--|--|--|--|--|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Hungary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Hungary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hungary: data from RP3 performance plan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | 88 066 601 | 91 620 408 | 179 687 009 | 110 609 471 | 110 418 307 | 112 708 232 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | 15 727 030 | 16 827 036 | 32 554 066 | 21 655 654 | 25 052 669 | 27 409 727 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | 103 793 632 | 108 447 444 | 212 241 075 | 132 265 125 | 135 470 976 | 140 117 959 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | 84.8% | 84.5% | 84.7% | 83.6% | 81.5% | 80.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hungary: actual data from reporting tables | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | 88 066 601 | 87 454 722 | 175 521 324 | 96 312 759 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | 15 727 030 | 15 851 009 | 31 578 039 | 19 763 340 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | 103 793 632 | 103 305 731 | 207 099 363 | 116 076 099 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | 84.8% | 84.7% | 84.8% | 83.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -5 141 713 | -5 141 713 | -16 189 026 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -4.7% | -2.4% | -12.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | in p.p. | 0.0 p.p. | 0.2 p.p. | 0.1 p.p. | -0.7 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>83%</td> <td>17%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td></td> <td></td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td></td> <td></td> </tr> </tbody> </table> | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 85% | 15% | Actual | 85% | 15% | 2021 | Determined | 84% | 16% | Actual | 85% | 15% | 2020-2021 | Determined | 85% | 15% | Actual | 85% | 15% | 2022 | Determined | 84% | 16% | Actual | 83% | 17% | 2023 | Determined | 82% | 18% | Actual | | | 2024 | Determined | 80% | 20% | Actual | | | <p>In the year 2022, actual gate-to-gate ANS costs are -12.2% (-16.2 M€2017) lower than planned, as en route costs are lower than planned by -14.3 M€2017 and terminal costs are lower than planned by -1.9 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (83.0%) is slightly lower than planned in the PP for 2022 (83.6%).</p> | | |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In HUF '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HungaroControl | 2 454 713 | 41 202 342 | 6.0% | 11 079 803 | 46 579 114 | 23.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | | | RR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hungary MET | 32 878 | 1 261 766 | 2.6% | 123 941 | 1 361 501 | 9.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 2 487 591 | 42 464 108 | 5.9% | 11 203 744 | 47 940 615 | 23.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Hungary covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +11 203.7 MHUF (+9 309.4 MHUF for en route and +1 894.4 MHUF for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 23.4% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (5.9% of gate-to-gate revenues).</p> | | | | <p>Hungary gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Hungary gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>5.9%</td> </tr> <tr> <td>Ex-post</td> <td>23.4%</td> </tr> </tbody> </table> | | | Result Type | Regulatory Result (%) | Ex-ante | 5.9% | Ex-post | 23.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 5.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 23.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Ireland

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IRELAND

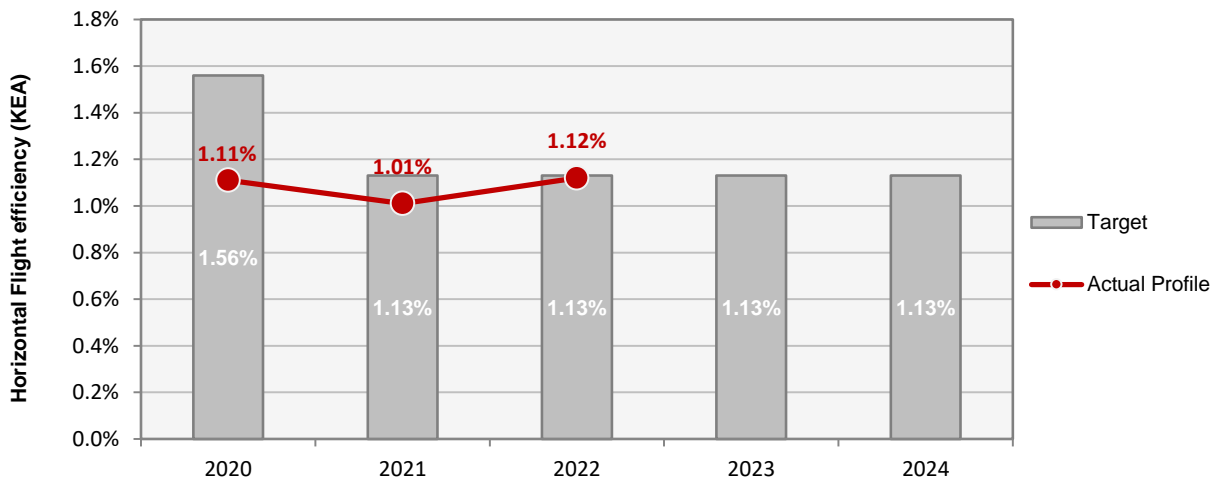
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| IAA | 91 | C | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Four out of five EoSM components of the ANSP meet the RP3 target level. Only "Safety Risk Management" is below RP3 target level, but the ANSP only need to improve in a single question to achieve RP3 targets. Over 2022, maturity has decreased for one question, which degraded the "Safety Culture" component from level D to C. | | | | | | |

IRELAND

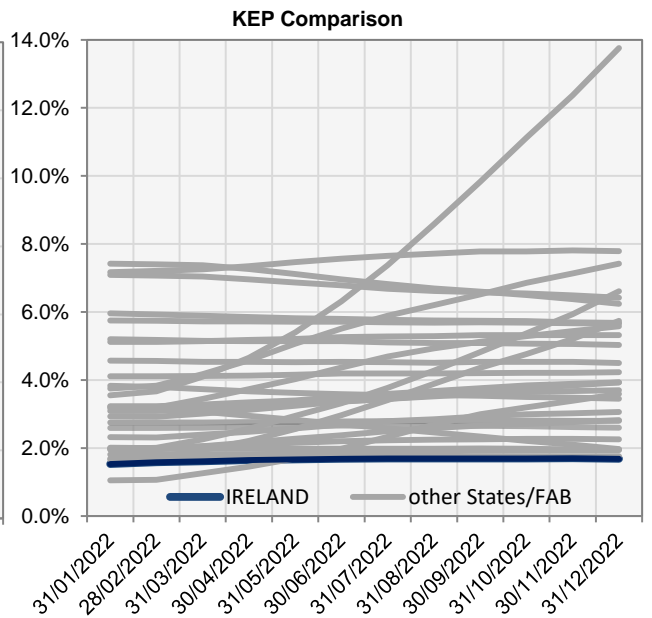
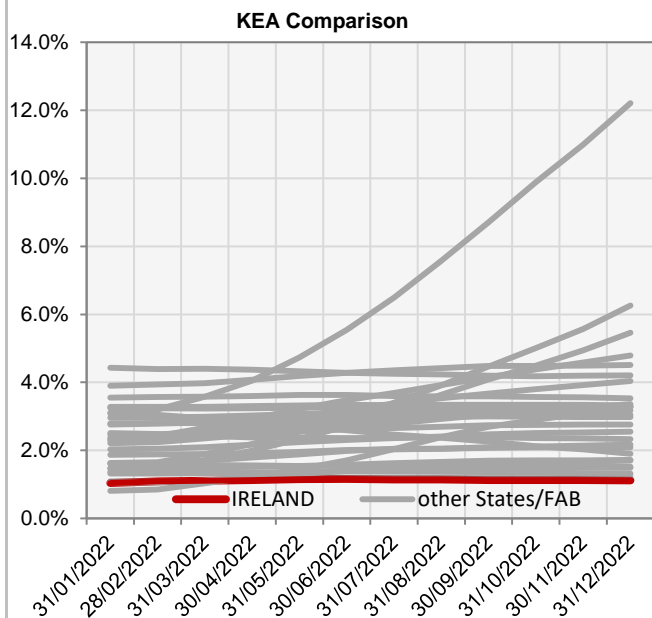
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.56% | 1.13% | 1.13% | 1.13% | 1.13% |
| Actual performance | 1.11% | 1.01% | 1.12% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.04% | 1.09% | 1.11% | 1.13% | 1.15% | 1.16% | 1.14% | 1.14% | 1.13% | 1.13% | 1.13% | 1.12% |
| KEP | 1.53% | 1.58% | 1.61% | 1.65% | 1.67% | 1.68% | 1.69% | 1.69% | 1.69% | 1.69% | 1.70% | 1.68% |
| KES | 1.49% | 1.55% | 1.59% | 1.63% | 1.67% | 1.69% | 1.71% | 1.73% | 1.74% | 1.74% | 1.77% | 1.75% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

IRELAND

ENVIRONMENT - Airports

1. Overview

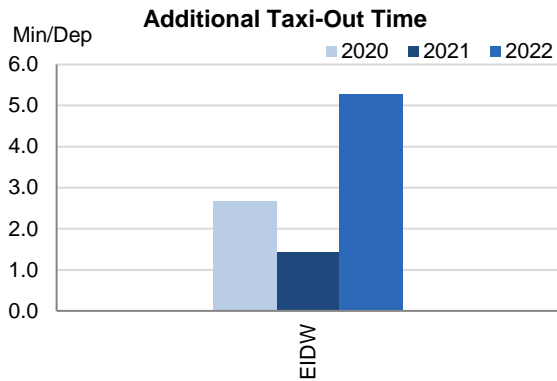
Ireland includes 3 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Dublin must be monitored for additional taxi-out and ASMA times.

Traffic at these Irish airports in 2022 was still 12% lower with respect to 2019, however traffic levels were 1.3 times the levels of 2021.

After a reduction in 2021, in 2022 both additional times at Dublin observed an important increase.

Despite the changing values in Dublin and Cork, the shares of CDO flights are still in the higher range of all observed values in 2022.

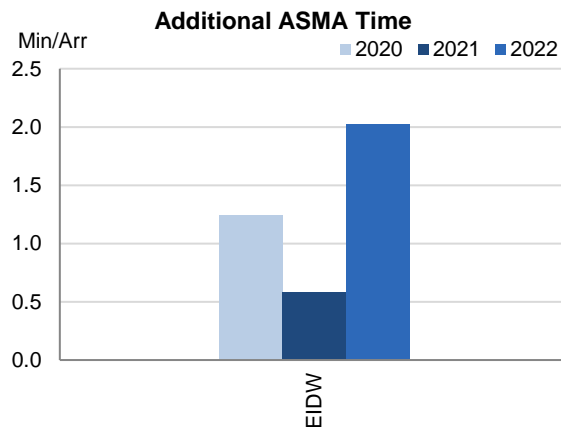
2. Additional Taxi-Out Time



Additional taxi-out times at Dublin increased by 269% in 2022 (EIDW; 2019: 7.1 min/dep.; 2020: 2.67 min/dep.; 2021: 1.43 min/dep.; 2022: 5.27 min/dep.) resulting in the highest additional taxi-out value observed in 2022 in the SES monitored airports.

According to the Irish monitoring report: *The ground infrastructure at Dublin airport is currently under redevelopment. Dublin's new runway 28R/10L with associated taxiway structure became operational in August 2022.*

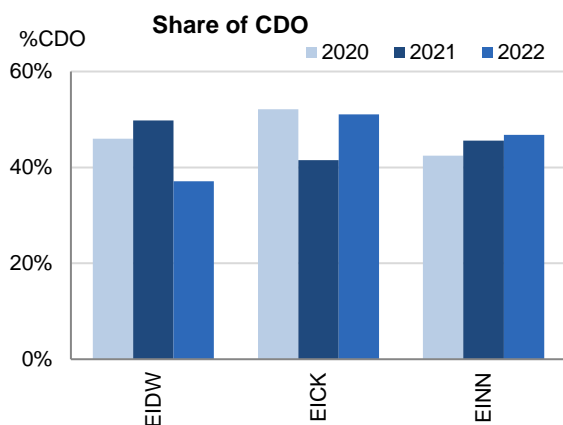
3. Additional ASMA Time



Additional ASMA times at Dublin, in the same lines as the additional taxi-out times, increased by 248% in 2022 (EIDW; 2019: 3.29 min/arr.; 2020: 1.24 min/arr. 2021: 0.58 min/arr.; 2022: 2.02 min/arr.) resulting in the highest additional ASMA value observed in 2022 in the SES monitored airports.

According to the Irish monitoring report: *Dublin Airspace review is due to be completed in 2023. The ANSP and NSA meet regularly to discuss performance. The ANSP was actively involved in the PRC, ASMA and Additional Taxi Time Working Group, the ANSP is currently reviewing the revised results.*

4. Share of arrivals applying CDO



The share of CDO flights increased at Cork (EICK) by 9.6 percentage points to 51.0% and at Shannon by 1.2 percentage points to 46.8%. Dublin had a decrease of 12.7 percentage points to 37.1%. Nevertheless, the share of CDO flights at all airports is well above the overall RP3 value in 2022 (29.0%).

Dublin had a significant decrease of the monthly values as from April while the monthly values for Cork and Shannon stayed more stable throughout the year.

According to the Irish monitoring report: *Low level airspace review to incorporate EICK (Cork) and EINN (Shannon) due 2023. Dublin Airspace review is due to be completed in the latter part of 2023 (CDO for Dublin operations restricted by neighbouring airspace structures).*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Dublin-EIDW | 2.67 | 1.43 | 5.27 | | | 1.24 | 0.58 | 2.02 | | | 46% | 50% | 37% | | |
| Cork-EICK | - | - | - | | | - | - | - | | | 52% | 41% | 51% | | |
| Shannon-EINN | - | - | - | | | - | - | - | | | 42% | 46% | 47% | | |

IRELAND

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

All military airspace is flight plannable and direct routes are given through activated military airspace as routine. The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on capacity at Dublin resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity

In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.

Military - related measures implemented or planned to improve capacity

The NSA meets regularly with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN) to discuss FUA implementation and any associated issues.

Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ireland | n/a | n/a | n/a | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Dublin | n/a | n/a | n/a | | |
| Shannon | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#6

All military airspace is flight plannable and direct routes are given through activated military airspace as routine. The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on Environment at Dublin airport resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity.

In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.

Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ireland | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Dublin | n/a | n/a | n/a | | |
| Shannon | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

All military airspace is flight plannable and direct routes are given through activated military airspace as routine. The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on Environment at Dublin airport resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity.

In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.

Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ireland | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Dublin | n/a | n/a | n/a | | |
| Shannon | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

All military airspace is flight plannable and direct routes are given through activated military airspace as routine.

The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on Environment at Dublin airport resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity.

In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.

Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

IRELAND

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.07 | 0.01 | 0.03 | 0.03 | 0.03 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>In 2022, there was a sharp recovery in traffic relative to the previous two years, slightly exceeding the Performance Plan Forecasts. Notwithstanding this increase in traffic, capacity performance remained strong relative to the annual targets'</p> <p>For En-Route Operations, Ireland had 27 minutes delay due ATC Capacity and 576 minutes due ATC staffing.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>The ANSP monitors on a daily basis any ATFM delay ensuring causes are identified, the results of which are reported weekly to Senior Management. The ANSP and NSA meet regularly to discuss the performance indicators.</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>The ANSP provides input to the Network Operations Report. The ANSP sends the capacity plan to NM for the outlook period on a weekly basis. The Network Manager in conjunction with the ANSP provides a traffic expectation at network and ACC level for the outlook period. The Network manager assesses the capacity plans which are then published on the Weekly NOP.</p> <p>Capacity Planning starts in Q2 for the following period (2024/2028). The opening schemes are examined in July, and capacity baselines checked and confirmed. In Q4, Capacity requirements discussed with Eurocontrol resulting in the Capacity Plans published for 2024-2028.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Dublin ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 57 | 57 | 58 | 59 | |
| Actual | 59 | 58 | 55 | 51 | | | |
| Shannon ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 191 | 191 | 197 | 199 | |
| Actual | 199 | 195 | 187 | 191 | | | |
| <p>It should be noted that the NSA's En Route ATCO forecast used for the Performance Plan did not forecast ATCO requirements by ACC, ie we forecast an overall En Route ATCO requirement.</p> <p>The ACC split provided was thus informed by a historic breakdown, which will be reviewed in 2024 as part of the RP4 process. We noted that the actual staffing by ACC remains at the discretion of the ANSP. ATCOs in 2022 were overall slightly below planned levels due to higher than expected attrition.</p> | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Not applicable. | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Ireland experienced an increase in traffic from 300k flights in 2021, to 582k flights in 2022, again with practically zero ATFM delay. Traffic levels were still lower than the 647k flights in 2019.</p> | | | | | | | |

1. Overview

Ireland includes 3 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Dublin must be monitored for pre-departure delays.

The Airport Operator Data Flow is fully established at Dublin and the monitoring of pre-departure delays can be performed.

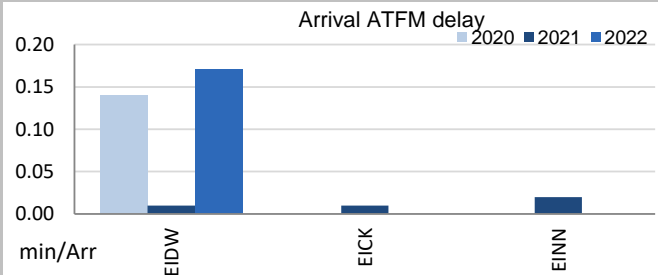
Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at these Irish airports in 2022 was still 12% lower with respect to 2019, however traffic levels were 1.3 times the levels of 2021.

Average arrival ATFM delays in 2022 was 0.15 min/arr, compared to 0.01 min/arr in 2021.

ATFM slot adherence has deteriorated (2022: 96.2%; 2021: 97.6%).

2. Arrival ATFM Delay



The national average arrival ATFM delay at Irish airports in 2021 was 0.15 min/arr.

No delays were observed in 2022 at Shannon (EINN) and Cork (EICK)

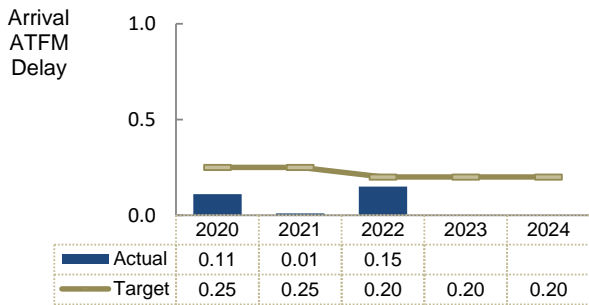
Dublin (EIDW: 2019: 0.17 min/arr.; 2020: 0.14 min/arr.; 2021: 0.01 min/arr.; 2022: 0.17 min/arr.) registered the highest delays in November and December, which were attributed to weather (91% of the total annual delays)

According to the Irish monitoring report: *For Terminal Operations, there were 132,489 departures with ATFM delay of 18,441 mins.*

Average ATFM arrival delay of 0.14.

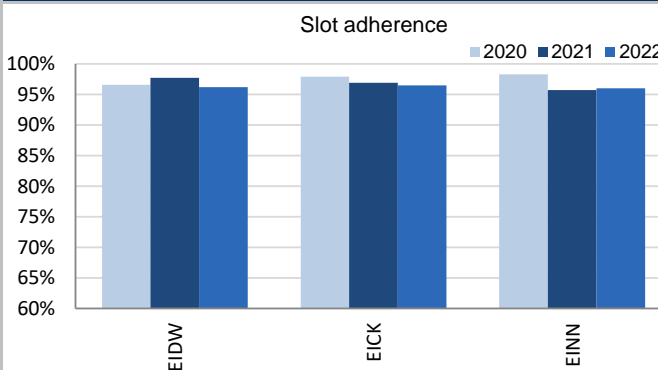
This can be categorised as ATC Capacity (81 mins), Aerodrome Capacity (195 mins), ATC Staffing, (1349) and the largest delay due to weather (16,816 minutes).

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



All three airports showed adherence above 96% and the national average was 96.2%. With regard to the 3.8% of flights that did not adhere, 2.3% was early and 1.5% was late.

According to the Irish monitoring report: *ATFM SLOT adherence is continuously monitored and the ANSP reports to unit management on a weekly basis. ATFM Compliance is discussed regularly with the NSA, all units above 90%.*

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Dublin (the only Irish airport subject to monitoring of this indicator).

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Dublin was above 40% for most months since April 2020, preventing the calculation of this indicator since then. Dublin had proper reporting before April 2020 and in 2022 the reporting has slightly improved, but still reaching above 40% of unidentified delay most months.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Dublin slightly increased drastically in 2022 (EIDW: 2020: 7.08 min/dep.; 2021: 6.88 min/dep.; 2022: 23.07 min/dep.) . The highest delays per flight were observed in June, July and December, when they averaged more than 30 min/dep.

According to the Irish monitoring report: *There appears to be inconsistencies in the measurement of this metric.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Dublin-EIDW | 0.14 | 0.01 | 0.17 | | | 96.6% | 97.7% | 96.2% | | | n/a | n/a | n/a | | | 7.08 | 6.88 | 23.07 | | |
| Cork-EICK | 0 | 0.01 | 0 | | | 97.9% | 96.9% | 96.5% | | | - | - | - | | | - | - | - | | |
| Shannon-EINN | 0 | 0.02 | 0 | | | 98.3% | 95.7% | 96.0% | | | - | - | - | | | - | - | - | | |

IRELAND: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Ireland ECZ represents 1.8% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/766 of 13 April 2022
The final version of the plan was adopted and published by Ireland in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Ireland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 102 132 685 | 104 907 809 | 207 040 494 | 123 929 012 | 129 002 488 | 129 584 192 |
| Inflation % | 0.0% | 1.6% | | 1.9% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 101.6 | 103.2 | | 105.2 | 107.3 | 109.4 |
| Real en route costs (€2017) | 100 825 323 | 102 364 058 | 203 189 381 | 119 095 882 | 122 100 394 | 120 687 045 |
| Total en route service units | 1 988 290 | 2 312 329 | 4 300 619 | 3 990 958 | 4 882 829 | 4 893 147 |
| Real en route DUC per service unit (€2017) | 50.71 | 44.27 | 47.25 | 29.84 | 25.01 | 24.66 |

| Ireland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 104 062 483 | 100 758 077 | 204 820 559 | 118 867 005 | | |
| Inflation % | 0.0% | 2.4% | | 8.1% | | |
| Inflation index (100 in 2017) | 101.6 | 104.0 | | 112.5 | | |
| Real en route costs (€2017) | 102 739 905 | 97 722 984 | 200 462 890 | 108 307 774 | | |
| Total en route service units | 1 988 290 | 2 419 194 | 4 407 484 | 4 233 452 | | |
| Real en route AUC per service unit (€2017) | 51.67 | 40.39 | 45.48 | 25.58 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|----------------------|--------------|--------------|---------------|------|------|
| En route costs (nominal €) | in value 1 929 797 | -4 149 732 | -2 219 935 | -5 062 007 | | |
| | in % +1.9% | -4.0% | -1.1% | -4.1% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.8 p.p. | | 6.2 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.8 p.p. | | 7.3 p.p. | | |
| Real en route costs (€2017) | in value 1 914 583 | -4 641 074 | -2 726 491 | -10 788 109 | | |
| | in % +1.9% | -4.5% | -1.3% | -9.1% | | |
| Total en route service units | in value 0 | 106 865 | 106 865 | 242 494 | | |
| | in % - | +4.6% | +2.5% | +6.1% | | |
| Real en route unit cost per service unit (€2017) | in value 0.96 | -3.87 | -1.76 | -4.26 | | |
| | in % +1.9% | -8.8% | -3.7% | -14.3% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -14.3% (or -4.26 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-9.1%, or -10.8 M€2017) and significantly higher than planned TSUs (+6.1%). It should be noted that actual inflation index in 2022 was +7.3 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+6.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (IAA) retaining an amount of +3.0 M€2017.

En route costs by entity

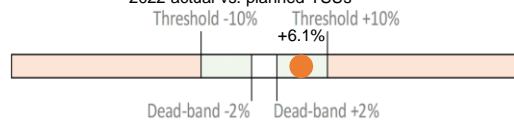
Actual real en route costs are -9.1% (-10.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, IAA (-11.7%, or -11.6 M€2017) and the NSA/EUROCONTROL (-0.7%, or -0.1 M€2017) and higher costs for the MET service provider (+13.1%, or +0.9 M€2017).

En route costs for the main ANSP (IAA) at charging zone level

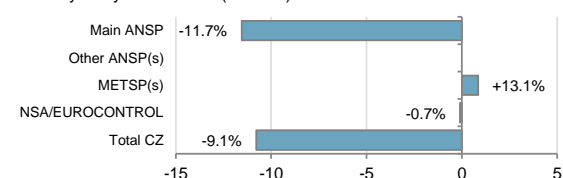
Significantly lower than planned en route costs in real terms for IAA in 2022 (-11.7%, or -11.6 M€2017) result from:

- Lower staff costs (-5.3%), mainly due to inflation index impact (+7.3 p.p.) since in nominal terms staff costs are higher than planned by +1.2% reflecting higher costs of overtime.
- Significantly lower other operating costs (-21.1%), partially reflecting cost deferrals in favour of service delivery. This result is also impacted by higher actual inflation index (+7.3 p.p.).
- Significantly lower depreciation (-20.2%), reflecting delays in the implementation of the investment programme due in part to staff shortages and pandemic related supply issues.
- Significantly lower cost of capital (-21.0%) resulting from the delays in investments as outlined above.
- Lower deduction for VFR exempted flights (-6.5%) in real terms, while these costs were in line with the plan when expressed in nominal terms.

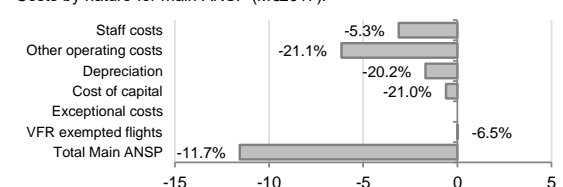
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



IRELAND: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

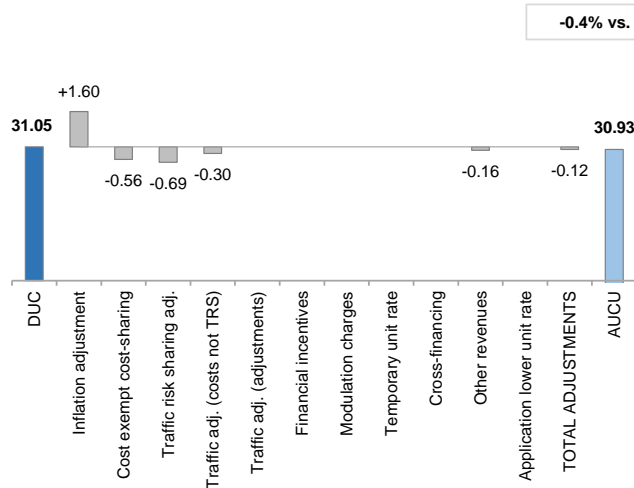
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Ireland 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 31.05 |
| DUC to be charged retroactively | 0.00 |
| DUC | 31.05 |
| Inflation adjustment | 1.60 |
| Cost exempt from cost-sharing | -0.56 |
| Traffic risk sharing adjustment | -0.69 |
| Traffic adj. (costs not TRS) | -0.30 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -0.16 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -0.12 |
| AUCU | 30.93 |
| AUCU vs. DUC | -0.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

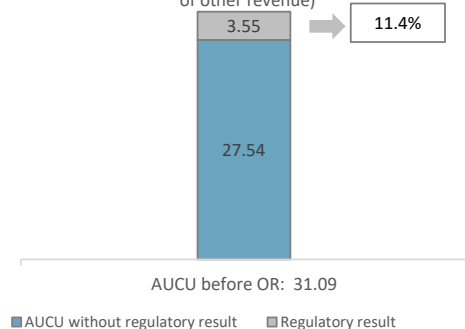
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|---------------|--------------|
| by item | New and existing investments | -2 293 | -0.54 |
| | Competent authorities and qualified entities costs | -83 | -0.02 |
| | Eurocontrol costs | -9 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -2 386 | -0.56 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| IAA | 16 000 | 3.78 |
| METSP(s) | € '000 | €/SU |
| Ireland MET | -958 | -0.23 |
| Total charging zone | 15 042 | 3.55 |
| Actual cost for users*** | 131 636 | 31.09 |
| Regulatory result (% AUCU) | 11.4% | 11.4% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (30.93 €) is -0.4% lower than the nominal DUC (31.05 €). The difference between these two figures (-0.12 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+1.60 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.56 €/SU);
- the deduction of the traffic risk sharing adjustments (-0.69 €/SU);
- the deduction of the traffic adjustment (-0.30 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.16 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 11.4%.

IRELAND: En route main ANSP (IAA)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

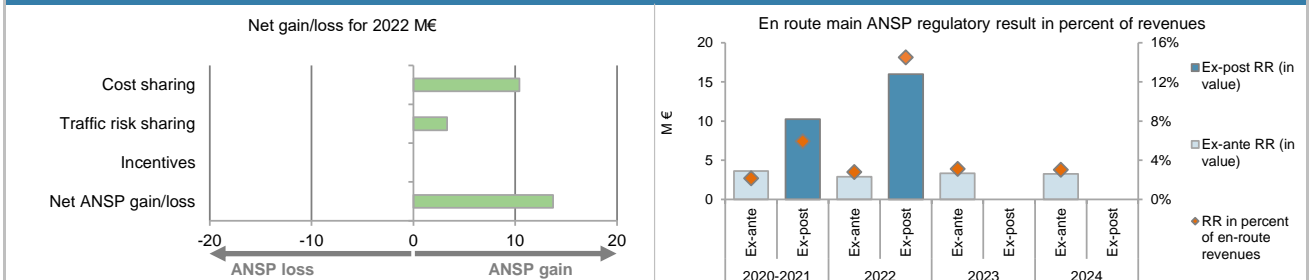
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 2 258 | 6 353 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 592 | 6 349 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -443 | -2 293 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 407 | 10 408 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.5% | 6.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 169 192 | 102 981 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 630 | 3 319 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 6 037 | 13 727 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| IAA planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|----------------|----------------|----------------|----------------|
| Total asset base | 38 426 | 47 273 | 85 699 | 52 039 | 59 175 | 57 777 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 3.0% | 5.2% | 4.2% | 5.5% | 5.6% | 5.6% |
| RoE (in value) | 1 143 | 2 464 | 3 607 | 2 878 | 3 336 | 3 257 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 143 | 2 464 | 3 607 | 2 878 | 3 336 | 3 257 |
| Revenue for the en route charging zone | 83 983 | 85 208 | 169 192 | 102 981 | 107 187 | 107 919 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 2.9% | 2.1% | 2.8% | 3.1% | 3.0% |
| Ex-ante RoE pre-tax rate (in %) | 3.0% | 5.2% | 4.2% | 5.5% | 5.6% | 5.6% |
| IAA actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 36 925 | 45 111 | 82 036 | 41 087 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 5.0% | 5.2% | 5.1% | 5.5% | | |
| RoE (in value) | 1 846 | 2 350 | 4 197 | 2 273 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 6 037 | 6 037 | 13 727 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 846 | 8 387 | 10 233 | 16 000 | | |
| Revenue for the en route charging zone | 85 913 | 87 057 | 172 970 | 110 355 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.1% | 9.6% | 5.9% | 14.5% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 18.6% | 12.5% | 38.9% | | |

13. Focus on the main ANSP regulatory result on en route activity



IAA net gain on activity in the Ireland en route charging zone in the year 2022

IAA reported a net gain of +13.7 M€, as a combination of a gain of +10.4 M€ arising from the cost sharing mechanism, with a gain of +3.3 M€ arising from the traffic risk sharing mechanism.

IAA overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+13.7 M€) and the actual RoE (+2.3 M€) amounts to +16.0 M€ (14.5% of the en route revenues). The resulting ex-post rate of return on equity is 38.9%, which is significantly higher than the 5.5% planned in the PP.

IRELAND: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|--------|-------|-------|
| Ireland MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 6 627 | 6 534 | 13 161 | 6 826 | 7 278 | 6 937 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Ireland MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -519 | -519 | -958 | | |
| Revenue for the en route charging zone | 6 627 | 6 582 | 13 209 | 7 251 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -7.9% | -3.9% | -13.2% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Ireland (Ireland MET) is negative and corresponds to -13.2% of the en route revenues. It should be noted that Ireland-MET does not charge cost of capital. | | | | | | |

IRELAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|----------------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Ireland TCZ represents 2.4% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 3 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 2 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Ireland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 19 367 029 | 21 303 170 | 40 670 199 | 28 118 820 | 30 828 178 | 31 736 044 |
| Inflation % | 0.0% | 1.6% | | 1.9% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 101.6 | 103.2 | | 105.2 | 107.3 | 109.4 |
| Real terminal costs (€2017) | 19 120 035 | 20 837 647 | 39 957 683 | 27 217 382 | 29 483 198 | 29 962 049 |
| Total terminal service units | 70 511 | 69 963 | 140 475 | 166 175 | 175 383 | 183 265 |
| Real terminal DUC per service unit (€2017) | 271.16 | 297.84 | 284.45 | 163.79 | 168.11 | 163.49 |
| Ireland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 19 797 207 | 19 856 281 | 39 653 488 | 31 294 352 | | |
| Inflation % | 0.0% | 2.4% | | 8.1% | | |
| Inflation index (100 in 2017) | 101.6 | 104.0 | | 112.5 | | |
| Real terminal costs (€2017) | 19 548 758 | 19 274 571 | 38 823 329 | 28 779 375 | | |
| Total terminal service units | 70 511 | 74 696 | 145 208 | 169 966 | | |
| Real terminal AUC per service unit (€2017) | 277.24 | 258.04 | 267.36 | 169.32 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value 430 178 | -1 446 889 | -1 016 711 | 3 175 532 | | |
| | in % +2.2% | -6.8% | -2.5% | +11.3% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.8 p.p. | | 6.2 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.8 p.p. | | 7.3 p.p. | | |
| Real terminal costs (€2017) | in value 428 723 | -1 563 077 | -1 134 354 | 1 561 993 | | |
| | in % +2.2% | -7.5% | -2.8% | +5.7% | | |
| Total terminal service units | in value 0 | 4 733 | 4 733 | 3 791 | | |
| | in % - | +6.8% | +3.4% | +2.3% | | |
| Real terminal unit cost per service unit (€2017) | in value 6.08 | -39.80 | -17.08 | 5.54 | | |
| | in % +2.2% | -13.4% | -6.0% | +3.4% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +3.4% (or +5.54 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned terminal costs in real terms (+5.7%, or +1.6 M€2017) and higher than planned TNSUs (+2.3%). It should be noted that actual inflation index in 2022 was +7.3 p.p. higher than planned.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+2.3%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (IAA) retaining an amount of +0.5 M€2017.</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are +5.7% (+1.6 M€2017) higher than planned. This is the result of higher costs for the main ANSP, IAA (+5.5%, or +1.3 M€2017), the MET service provider (+13.0%, or +0.2 M€2017) and the NSA (+0.5%).</p> | | | | | | |
| <p>Terminal charging zone costs for the main ANSP (IAA) at charging zone level</p> <p>Higher than planned terminal cost in real terms for IAA in 2022 (+5.5%, or +1.3 M€2017) results from:</p> <ul style="list-style-type: none"> - Higher staff costs (+2.4%) primarily due to higher costs of overtime. - Significantly higher other operating costs (+35.7%) reflecting a recognition of impairment loss (some 4.7 M€) for assets and installations in progress. - Significantly lower depreciation (-21.0%), reflecting delays in the implementation of the investment programme due to staff shortages as well as knock on impacts from COVID-19 and challenges with sourcing contractors. - Significantly lower cost of capital (-6.2%). | | | | | | |

IRELAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

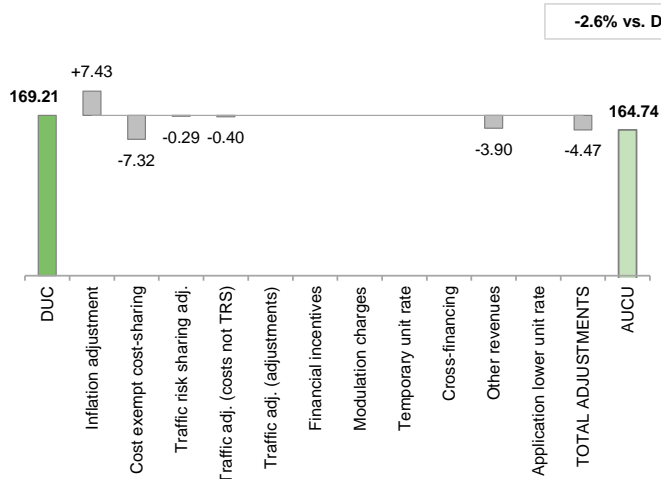
5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level

Ireland 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - €



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 169.21 |
| DUC to be charged retroactively | 0.00 |
| DUC | 169.21 |
| Inflation adjustment | 7.43 |
| Cost exempt from cost-sharing | -7.32 |
| Traffic risk sharing adjustment | -0.29 |
| Traffic adj. (costs not TRS) | -0.40 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -3.90 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -4.47 |
| AUCU | 164.74 |
| AUCU vs. DUC | -2.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

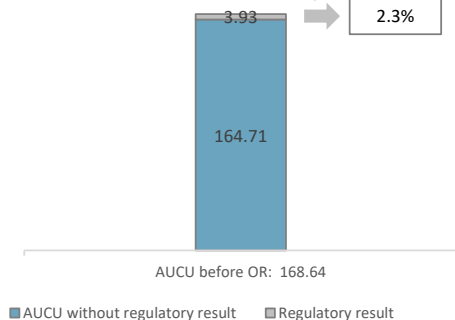
7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|---------------|--------------|
| by item | New and existing investments | -1 251 | -7.36 |
| | Competent authorities and qualified entities costs | 6 | 0.04 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -1 244 | -7.32 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| IAA | 907 | 5.34 |
| METSP(s) | | |
| Ireland-MET | -239 | -1.41 |
| Total charging zone | 668 | 3.93 |
| Actual cost for users*** | 28 662 | 168.64 |
| Regulatory result (% AUCU) | 2.3% | 2.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (164.74 €) is -2.6% lower than the nominal DUC (169.21 €). The difference between these two figures (-4.47 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+7.43 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-7.32 €/SU);
- the deduction of the traffic risk sharing adjustments (-0.29 €/SU);
- the deduction of the traffic adjustment (-0.40 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-3.90 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 2.3%.

IRELAND: Terminal main ANSP (IAA)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

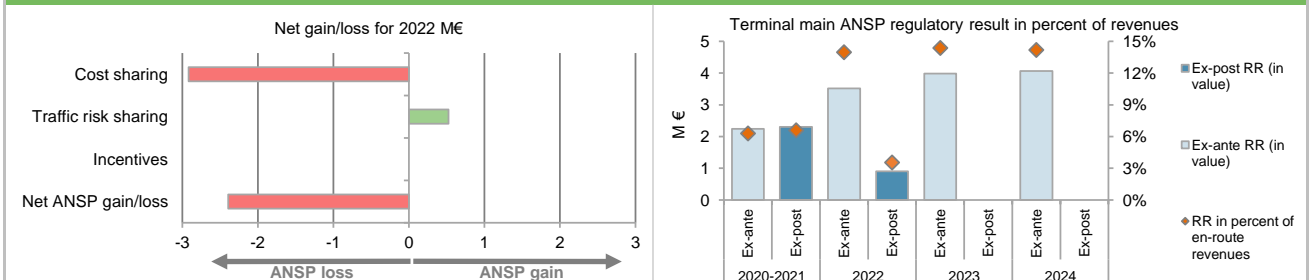
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|-------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 200 | -2 824 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 105 | 1 157 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -1 582 | -1 251 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -277 | -2 917 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 3.4% | 2.3% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 35 548 | 25 169 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 857 | 525 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 580 | -2 393 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| IAA planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 14 490 | 34 692 | 49 182 | 63 580 | 70 627 | 72 083 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 3.0% | 5.2% | 4.6% | 5.5% | 5.6% | 5.6% |
| RoE (in value) | 431 | 1 808 | 2 239 | 3 517 | 3 982 | 4 064 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 431 | 1 808 | 2 239 | 3 517 | 3 982 | 4 064 |
| Revenue for the terminal charging zone | 16 945 | 18 603 | 35 548 | 25 169 | 27 690 | 28 649 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.5% | 9.7% | 6.3% | 14.0% | 14.4% | 14.2% |
| Ex-ante RoE pre-tax rate (in %) | 3.0% | 5.2% | 4.6% | 5.5% | 5.6% | 5.6% |
| IAA actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 14 640 | 19 033 | 33 673 | 59 656 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 5.0% | 5.2% | 5.1% | 5.5% | | |
| RoE (in value) | 732 | 992 | 1 724 | 3 300 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 580 | 580 | -2 393 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 732 | 1 572 | 2 304 | 907 | | |
| Revenue for the terminal charging zone | 17 375 | 17 553 | 34 928 | 25 601 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.2% | 9.0% | 6.6% | 3.5% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 8.3% | 6.8% | 1.5% | | |

13. Focus on main ANSP regulatory result on terminal activity



IAA net gain on activity in the Ireland terminal charging zone in the year 2022

IAA reported a net loss of -2.4 M€, as a combination of a loss of -2.9 M€ arising from the cost sharing mechanism and a gain of +0.5 M€ arising from the traffic risk sharing mechanism.

IAA overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-2.4 M€) and the actual RoE (+3.3 M€) amounts to +0.9 M€ (3.5% of the terminal revenues). The resulting ex-post rate of return on equity is 1.5%, which is lower than the 5.5% planned in the PP.

IRELAND: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|--------|-------|-------|
| Ireland-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 1 657 | 1 633 | 3 290 | 1 707 | 1 820 | 1 734 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Ireland-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | -130 | -130 | -239 | | |
| Revenue for the terminal charging zone | 1 657 | 1 645 | 3 302 | 1 813 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -7.9% | -3.9% | -13.2% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Ireland (Ireland-MET) is negative and corresponds to -13.2% of the terminal revenues. It should be noted that Ireland-MET does not charge cost of capital. | | | | | | |

IRELAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|--------------|----------------|---------------|---------------|----------------|---------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Ireland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Ireland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ireland: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 100 825 323 | 102 364 058 | 203 189 381 | 119 095 882 | 122 100 394 | 120 687 045 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 19 120 035 | 20 837 647 | 39 957 683 | 27 217 382 | 29 483 198 | 29 962 049 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 119 945 358 | 123 201 705 | 243 147 064 | 146 313 264 | 151 583 592 | 150 649 095 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.1% | 83.1% | 83.6% | 81.4% | 80.5% | 80.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ireland: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 102 739 905 | 97 722 984 | 200 462 890 | 108 307 774 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 19 548 758 | 19 274 571 | 38 823 329 | 28 779 375 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 122 288 664 | 116 997 555 | 239 286 219 | 137 087 148 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.0% | 83.5% | 83.8% | 79.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 2 343 305 | -6 204 150 | -3 860 845 | -9 226 116 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 2.0% | -5.0% | -1.6% | -6.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | -0.0 p.p. | 0.4 p.p. | 0.2 p.p. | -2.4 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>84%</td> <td>16%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>81%</td> <td>19%</td> </tr> <tr> <td>Actual</td> <td>79%</td> <td>21%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>81%</td> <td>19%</td> </tr> <tr> <td>Actual</td> <td>81%</td> <td>19%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td>80%</td> <td>20%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 84% | 16% | Actual | 84% | 16% | 2021 | Determined | 83% | 17% | Actual | 84% | 16% | 2020-2021 | Determined | 84% | 16% | Actual | 84% | 16% | 2022 | Determined | 81% | 19% | Actual | 79% | 21% | 2023 | Determined | 81% | 19% | Actual | 81% | 19% | 2024 | Determined | 80% | 20% | Actual | 80% | 20% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 79% | 21% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In 2022, actual gate-to-gate ANS costs are -6.3% (-9.2 M€2017) lower than planned in real terms reflecting a combination of lower than planned en route costs (-10.8 M€2017) and higher than planned terminal costs (+1.6 M€2017).</p> <p>The actual share of en route in gate-to-gate ANS costs (79.0%) is lower than planned in the PP for 2022 (81.4%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IAA | 6 395 | 128 150 | 5.0% | 16 907 | 135 956 | 12.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ireland MET | | 0 | 8 533 | 0.0% | -1 197 | 9 064 | -13.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | 6 395 | 136 683 | 4.7% | 15 710 | 145 020 | 10.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Ireland covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +15.7 M€ (+15.0 M€ for en route and +0.7 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 10.8% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (4.7% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Ireland gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Ireland gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>4.7%</td> </tr> <tr> <td>Ex-post</td> <td>10.8%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 4.7% | Ex-post | 10.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 4.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 10.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Italy

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ITALY

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|------------------------------------|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| ENAV | 97 | C | C | D | D | C |

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

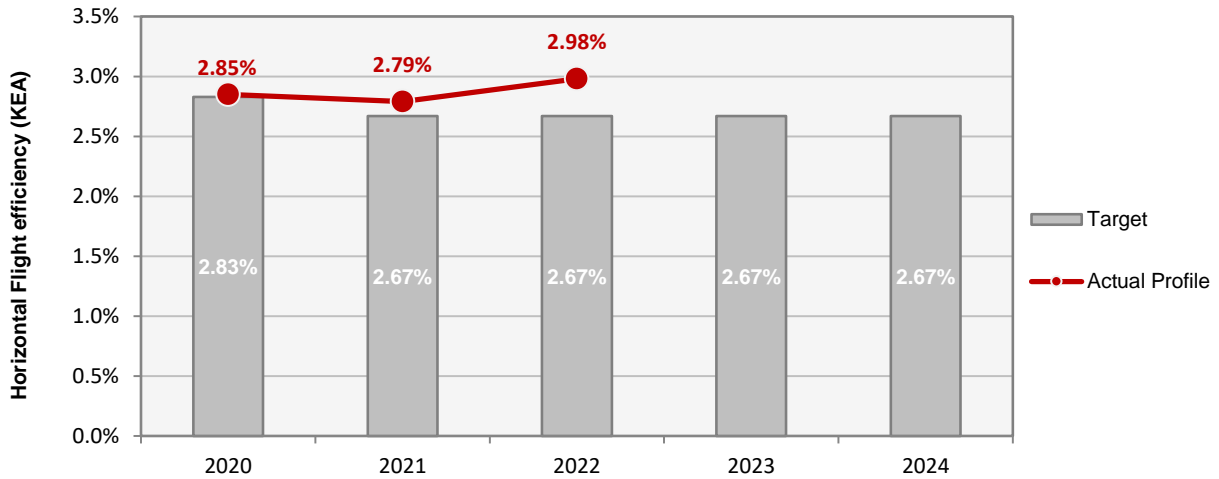
Observations

All five EoSM components of the ANSP meet, or exceed, the RP3 target level. The level was maintained compared with 2021.

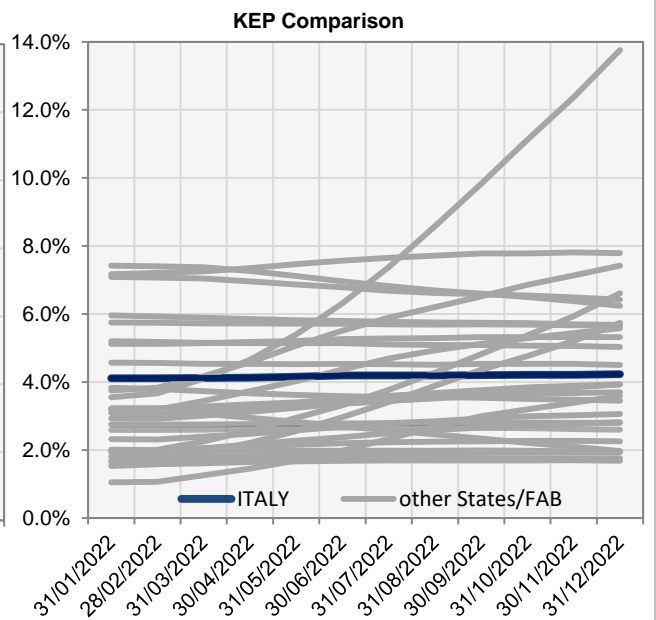
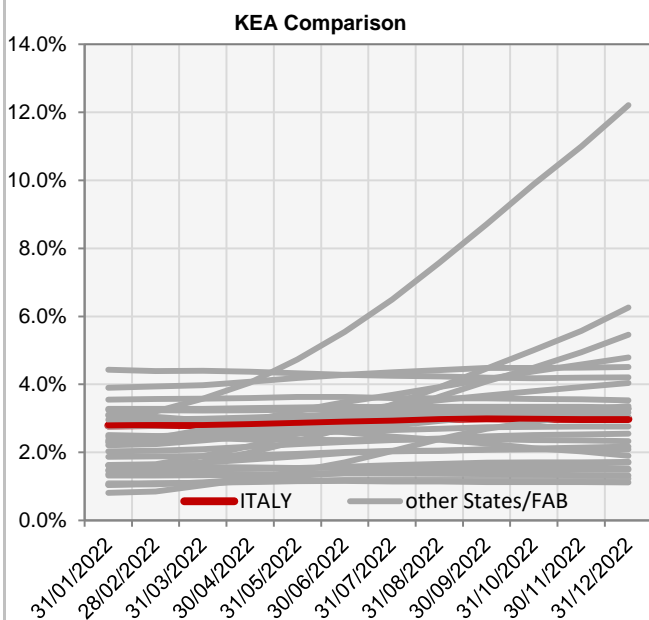
ITALY

ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.83% | 2.67% | 2.67% | 2.67% | 2.67% |
| Actual performance | 2.85% | 2.79% | 2.98% | | |



| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 2.79% | 2.80% | 2.80% | 2.83% | 2.87% | 2.91% | 2.93% | 2.98% | 3.00% | 2.99% | 2.98% | 2.98% |
| KEP | 4.11% | 4.11% | 4.12% | 4.13% | 4.16% | 4.19% | 4.19% | 4.19% | 4.20% | 4.21% | 4.21% | 4.23% |
| KES | 3.67% | 3.68% | 3.69% | 3.71% | 3.75% | 3.78% | 3.79% | 3.80% | 3.82% | 3.83% | 3.83% | 3.86% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

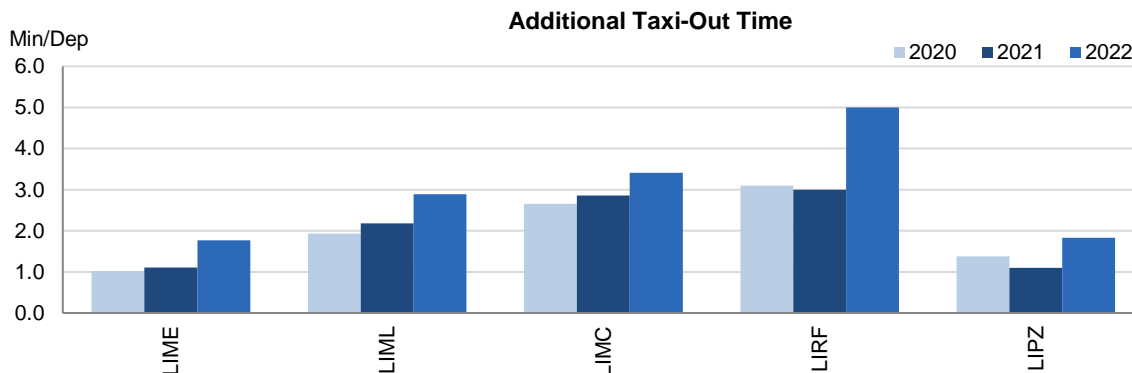
Italy identified five airports as subject to RP3 monitoring. All of them have a fully implemented data flow that allows the proper monitoring of environmental indicators.

Traffic at the ensemble of these Italian airports in 2022 is still 18% lower than in 2019, but increased 71% with respect to 2021.

Both additional times in 2022 increased with respect to 2021 at all these airports in different degrees.

The overall share of CDO flights for Italy (28.6%) is slightly below the overall RP3 value in 2022.

2. Additional Taxi-Out Time



Additional taxi-out times at Rome Fiumicino (LIRF; 2019: 7.87 min/dep.; 2020: 3.1 min/dep.; 2021: 3 min/dep.; 2022: 5 min/dep.) increased significantly in 2022 resulting in the second highest additional taxi-out times in the SES monitored airports.

The rest of Italian airports also observed an increase of their taxi-out times in 2022.

According to the Italian monitoring report: *As in previous years of this RP3 and also for the entire RP2, similar as for the PI of the Terminal/ASMA, ENAV SpA and the other ANSPs in ECAC do not have access to part of the data used by PRU to process the output, and therefore they are not able to replicate the data processing and consequently to verify the correct assessment of the information.*

As already reported last year within the comments of the 2022 Report, the ad-hoc WG PRU/EUROCONTROL/ANSPs created for the scope of reviewing the TAXI-OUT Methodology completed the assigned task and released the new Methodology at the end of the 2022.

Then, since March 2023 both the outputs (new output and previous one) are available within the ANS Performance website, accessible at monthly level for the scope of monitoring and comparing any gaps or any inconsistencies between the National yearly counted outputs vs the assigned Performance Targets.

Considering that the details of the trajectory data (flight trajectory on the airport manoeuvring area/TAXI-OUT) are only available (except the case subsequent a specific request addressed directly to the PRU) as consolidated value at monthly level, by an ah-hoc analysis conducted for this scope it can be noted that the new Methodology ensures greater stability of the "Reference" (the so-called "Baseline", used to compare the actual data with the same "starting-ending" previous operational situations, obtained considering the previous 12 months rolling and not the previous month only as for the previous Methodology) when compared with the Actual data used to determine the proposed output.

And so, leaving out the last two years characterized by the pandemic crisis, the consolidated figure for 2022 presents itself, for all 5 airports under monitoring, as an optimized/improved value when compare it vs the consolidated figure of 2019.

The positive results counted in 2022, that evidence the reduction of the Additional TAXI-OUT time, encourage the Italian NSA to continue incentive ENAV SpA with their flight efficiency policy implemented at the scope to reduce/optimize the TAXI-OUT performances for the Italian airports monitored and consequently to reduce fuel consumptions and CO2 emissions.

The single value that evidences (also for the PI ASMA) an increment in the Additional Time is Milano Linate (2019 vs 2022), for which an internal investigation is in progress to analyse the causes and to implement some mitigation actions to reduce the inefficiency.

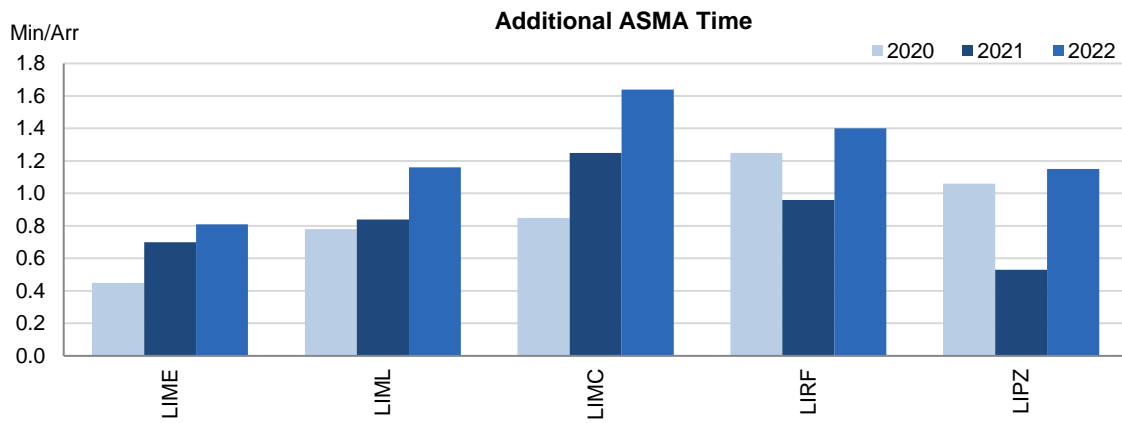
Here following the output data of 2022 (using the new methodology) compared with similar amounts of traffic of 2019, although with characteristics that are not always the same both for the type of aircraft and/or for the details of the trajectory, for the PI additional taxi-out:

| | | |
|-----------------------------|-----------------|-----------------|
| LIMC (Milan/Malpensa) | 2019: 5.11 mins | 2022: 4.16 mins |
| LIME (Bergamo/Orio Alserio) | 2019: 3.41 mins | 2022: 3.22 mins |
| LIML (Milan/Linate) | 2019: 3.75 mins | 2022: 4.79 mins |
| LIPZ (Venice/Tessera) | 2019: 3.98 mins | 2022: 3.09 mins |
| LIRF (Rome/Fiumicino) | 2019: 7.12 mins | 2022: 5.88 mins |

Here following the output data (using the current methodology), between 2019 and 2022 for the PI additional taxi-out:

| | | |
|-----------------------------|-----------------|-----------------|
| LIMC (Milan/Malpensa) | 2019: 4.76 mins | 2022: 3.41 mins |
| LIME (Bergamo/Orio Alserio) | 2019: 1.81 mins | 2022: 1.77 mins |
| LIML (Milan/Linate) | 2019: 2.43 mins | 2022: 2.89 mins |
| LIPZ (Venice/Tessera) | 2019: 2.52 mins | 2022: 1.83 mins |
| LIRF (Rome/Fiumicino) | 2019: 7.87 mins | 2022: 5.00 mins |

3. Additional ASMA Time



Similar as for additional taxi-out time, additional ASMA times at the Italian airports increased in 2022. Milan Malpensa (LIMC: 2019: 2.59 min/arr.; 2020: 0.85 min/arr.; 2021: 1.25 min/arr.; 2022: 1.64 min/arr.) showed the longest additional ASMA time in Italy and one of the highest in the SES monitored airports (SES average additional ASMA time= 1.06 min/arr.)

According to the Italian monitoring report: As in previous years of this RP3 and also for the RP2, similar as for the PI of the Taxi Time, ENAV SpA and the other ANSPs in ECAC do not have access to part of the data used by PRU to process the output, and therefore they are not able to replicate the data processing and consequently to verify the correct assessment of the information.

As already reported last year within the comments of the 2022 Report, the ad-hoc WG created for the scope of reviewing the ASMA Methodology completed the assigned task and released the new Methodology at the end of the 2022.

Then, since March 2023 both the outputs (new output and previous one) are available within the ANS Performance website, accessible at monthly level for the scope of monitoring and comparing any gaps or any inconsistencies between the counted National yearly outputs and the assigned Performance Targets.

Considering that the details of the trajectory data (flight trajectory on the Terminal Area/ASMA) are only available (except the case subsequent a specific request addressed directly to the PRU) as consolidated value at monthly level, by an ad-hoc analysis conducted for this scope it can be noted that the new Methodology ensures greater stability of the "Reference" (the so-called "Baseline", used to compare the actual data with the same "starting-ending" previous operational situations, obtained considering the previous 12 months rolling and not the previous month only as for the previous Methodology) when compared with the Actual data used to determine the proposed output.

And so, leaving out the last two years characterized by the pandemic crisis, the consolidated figure for 2022 presents itself, for all 5 airports under monitoring, as an optimized/improved value when compare it vs the consolidated figure of 2019.

The positive results counted in 2022, that evidence the reduction of the Additional ASMA time, encourage the Italian NSA to continue incentive ENAV SpA with their flight efficiency policy implemented at the scope to reduce/optimize the ASMA performances for the Italian airports monitored and consequently to reduce fuel consumptions and CO2 emissions.

The single value that evidences (also for the PI TAXI-OUT) an increment in the Additional Time is Milano Linate, for which an internal investigation is in progress to analyse the causes and to implement some mitigation actions to reduce the inefficiency.

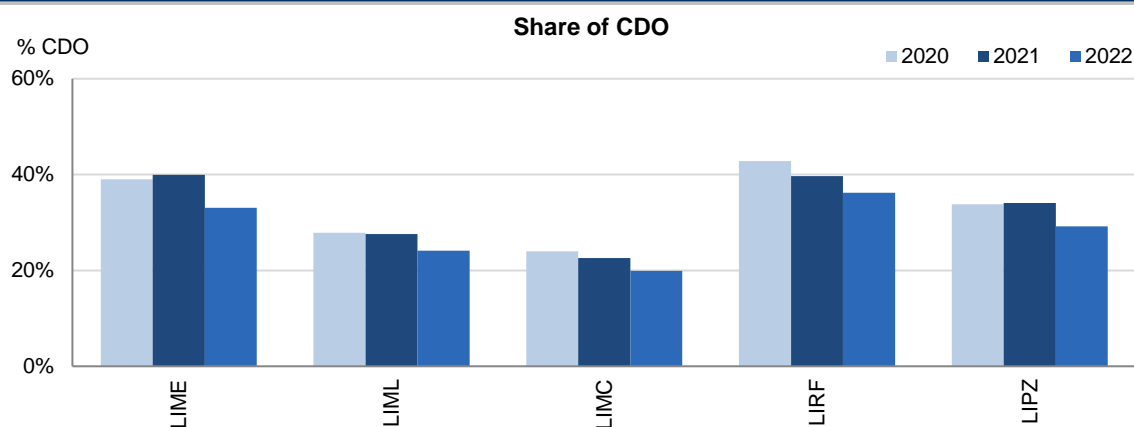
Here following the output data of 2022 (using the new methodology) compared with similar amounts of traffic of 2019, although with characteristics that are not always the same both for the type of aircraft and/or for the details of the trajectory, for the PI ASMA:

| | | |
|-----------------------------|-----------------|-----------------|
| LIMC (Milan/Malpensa) | 2019: 4.48 mins | 2022: 3.33 mins |
| LIME (Bergamo/Orio Alserio) | 2019: 3.05 mins | 2022: 2.30 mins |
| LIML (Milan/Linate) | 2019: 2.46 mins | 2022: 2.49 mins |
| LIPZ (Venice/Tessera) | 2019: 3.49 mins | 2022: 2.70 mins |
| LIRF (Rome/Fiumicino) | 2019: 3.81 mins | 2022: 2.88 mins |

Here following the output data (using the current methodology), between 2019 and 2022 for the PI ASMA:

| | | |
|-----------------------------|-----------------|-----------------|
| LIMC (Milan/Malpensa) | 2019: 2.59 mins | 2022: 1.64 mins |
| LIME (Bergamo/Orio Alserio) | 2019: 0.94 mins | 2022: 0.81 mins |
| LIML (Milan/Linate) | 2019: 0.96 mins | 2022: 1.16 mins |
| LIPZ (Venice/Tessera) | 2019: 1.95 mins | 2022: 1.15 mins |
| LIRF (Rome/Fiumicino) | 2019: 2.08 mins | 2022: 1.40 mins |

4. Share of arrivals applying CDO



The share of CDO flights decreased at all airports with the biggest decrease at Bergamo (-6.8 percentage points). Bergamo and Rome had shares of CDO flights above the overall RP3 value in 2022 - 29.0% - (LIME: 33.1%; LIRF: 33.8%). All airports had the lowest monthly values during the summer months.

According to the Italian monitoring report: *The methodology of the VFE during Climb and Descent segments to/from the Departure/Arrival airports was defined and released by the PRU at the end of multiple coordination meetings, in the recent past years, between PRU members and representatives of EUROCONTROL and multiple ECAC ANSPs.*

Even if further cooperation was requested mainly by the ANSPs since the time of the release of the Methodology, with the aim to refine the first release in relation to the output carried out from the actual performances of the AUs and so to fill-in any gaps or inconsistencies, this action isn't still carried out and the output of the processed file was never shared.

For this reason, since the first year of this RP3 (2020) when the VFE PI is reported within the annual Report and thus till the last year 2022, it was not possible to analyse the details of the files with the complete information (the consolidated data on monthly basis, sum and average values, are published and available on the ANS Performance website but in terms of final values only and without the VFE performance data of the individual flights) and therefore it is not possible once again to validate or comment/assess the presented final PI's value.

However, as it has been repeatedly highlighted during the previous years, ENAV SpA still disagrees with the value presented in the Performance Report for the year 2022.

It therefore intends to represent that only 36% of the flights landed at LIRF in 2022, or only 20% landed in LIMC in 2022, were compliant with a continuous descent from TOD to touch down!

This assessment due to both the CDO measures applied by the ATCOs during the live operations and based also on an efficient EnRoute and Terminal NTW that has been realized, together with the other implementations introduced in the Airspace, in order to increase the Flight efficiency of operations even in the Arrival phases at National airports.

The value presented in the above Table, according to the interpretation of the PRU Methodology, want to represent the % of flights that were compliant with a continuous descent from the TOD upon landing (inside a cylinder with a radius of D200 NIM centered from the airport of landing).

The value doesn't consider those flights that were been affected by an interruption, a leveling due to any reason, which caused of their exclusion from the list of efficient flights from the point of view of the VFE.

However, as it has been done for other KPIs and PIs in the KPA ENV area, there is currently a coordination between ENAV SpA and PRU in order to have, following the ad-hoc analysis of a monthly extract received from PRU upon request, an upgrade/review of the actual VFE Methodology.

The scope is to highlight the real inefficiency in the VFE due to external factors from the ATC scopes/Safety issues, those inconsistencies in the management of the "Level Segments" that will have to better define the parameters for which any interruption of the continuous descent can and it must be considered an inefficiency, and so to support the revision of the methodology and the setting of the algorithm.

Considered the above, the ENAV SpA proposal is to remove for the 2022 (initially as first action but to recalculate also the other 2 previous years of the RP3 and to review the Methodology as well) all those flight that have been considered as not compliant for CDO when crossing FL 75 and till the touch down. The numbers are available within the ANS Performance website and easily manageable by PRU.

Giving simply that, that it is almost clear particularly during the rush hours when it is impossible for an aircraft in sequence for landing to maintain the continuous descent glide path due to preceding aircraft, the recalculated numbers will reflect what it really happens in the Italian airspace relatively to the VFE PI.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|---------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Bergamo/Orio Alserio-LIME | 1.02 | 1.11 | 1.77 | | | 0.45 | 0.7 | 0.81 | | | 39% | 40% | 33% | | |
| Milan/Linate-LIML | 1.93 | 2.18 | 2.89 | | | 0.78 | 0.84 | 1.16 | | | 28% | 28% | 24% | | |
| Milan/Malpensa-LIMC | 2.66 | 2.86 | 3.41 | | | 0.85 | 1.25 | 1.64 | | | 24% | 23% | 20% | | |
| Rome/Fiumicino-LIRF | 3.1 | 3 | 5 | | | 1.25 | 0.96 | 1.4 | | | 43% | 40% | 36% | | |
| Venice/Tessera-LIPZ | 1.38 | 1.1 | 1.83 | | | 1.06 | 0.53 | 1.15 | | | 34% | 34% | 29% | | |

ITALY

ENVIRONMENT - Military dimension

| Update on Military dimension of the plan | | | | | |
|--|------|------|------|------|------|
| | | | | | |
| Military - related measures implemented or planned to improve capacity | | | | | |
| | | | | | |
| PI#6 Effective use of reserved or segregated airspace - national level | | | | | |
| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Italy | | | | | |
| PI#6 Effective use of reserved or segregated airspace (per ACC) | | | | | |
| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Brindisi | | | | | |
| Milano | | | | | |
| Padova | | | | | |
| Rome | | | | | |
| Initiatives implemented or planned to improve PI#6 | | | | | |
| | | | | | |

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Italy | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Brindisi | | | | | |
| Milano | | | | | |
| Padova | | | | | |
| Rome | | | | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Italy | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Brindisi | | | | | |
| Milano | | | | | |
| Padova | | | | | |
| Rome | | | | | |

Initiatives implemented or planned to improve PI#8

ITALY

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|---|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.25 | 0.07 | 0.11 | 0.11 | 0.11 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. |
| Actual performance | 0.01 | 0.05 | 0.15 | | | |
| NSA's assessment of capacity performance | | | | | | |
| <p>The year 2022 was a period of intense and constant recovery in air traffic volumes, with air traffic levels recorded in August and October that were higher than the corresponding periods of 2019, the pre-pandemic year.</p> <p>Contributing factors included the gradual easing of restrictions associated with the health emergency and the renewed propensity to travel, as well as the change in European routes, due to the Russian-Ukrainian conflict, which led to large, long-haul aircraft, mainly flying from the eastern quadrants, to fly over Italian airspace, with a consequent greater development of flights.</p> | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>Monthly monitoring and analysis of the operational performance at Country and single ACC level is carried out by ENAV. Checks are made against the value of ATFM generated delay per month and its expected trend across the year.</p> <p>At the beginning of summer 2022 a disputation process was initiated by ENAC in respect of NM to acknowledge the erroneous attribution to Italy of some enroute ATFM delays. The outcomes of the reconciliation process showed improvements in the initial figure of Capacity KPI #1 as presented by PRB in the current table (0.22 m/f) as follows:</p> <p>Capacity ENR KPI #1, which includes ATFM all-reasons of delay: 0,15 min/flight Capacity ENR PI#1, which solely includes the ATM reasons of ATFM delay: 0,04 min/flight.</p> <p>In 2022 there were four reasons of Enroute ATFM delay: Weather (56.6%), ATC Capacity (29.3%), Industrial Action (13.8%), Other (0.3%). As such, the "ATM" reasons only counted for 29.3% of the overall delay assignment.</p> | | | | | | |
| Capacity Planning | | | | | | |
| Nothing reported.. | | | | | | |

| ATCO in OPS (FTE) | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| Brindisi ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 87 | 95 | 94 | 96 | |
| Actual | 91 | 90 | 87 | 92 | | | |
| Milano ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 264 | 282 | 282 | 278 | |
| Actual | 253 | 260 | 264 | 282 | | | |
| Padova ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 208 | 213 | 213 | 211 | |
| Actual | 194 | 201 | 208 | 204 | | | |
| Rome ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 322 | 332 | 327 | 320 | |
| Actual | 327 | 319 | 322 | 331 | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Nothing reported | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Italy ACCs experienced an increase in traffic from 1 020k flights in 2021, with 54k minutes of en route ATFM delays to 1 664k flights with 254k minutes of delay after the NM post operations delay attribution process. (An additional 109k minutes of en route ATFM delay was attributed to other ANSPs as part of the eNM/S22 measures agreed at the NMB (68k from ENAV to DFS; 41k from ENAV to DSNA).)</p> <p>However, traffic levels were still substantially below the 1,962k flights in 2019, for which there were 32k minutes of en route ATFM delay.</p> <p>En route ATFM delays in 2022 were attributed to ATC Capacity (29%); ATC industrial action (14%) and adverse weather (57%).</p> <p>The amount of delays attributed to adverse weather in 2022 were 144k minutes. In 2018, with 1 753k flights, there were 16k minutes of attributed weather delay; in 2019 with 1 831k flights, there were 15k minutes of ATFM delay attributed to adverse weather.</p> | | | | | | | |

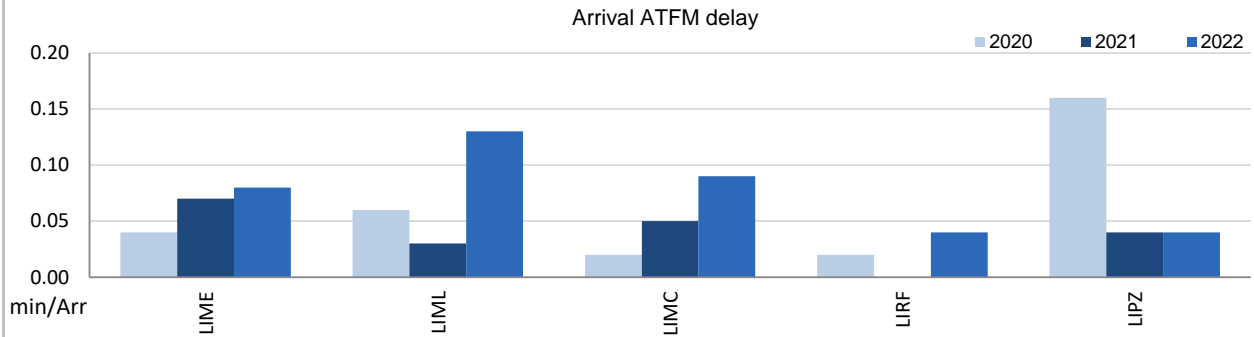
1. Overview

Italy identified five airports as subject to RP3 monitoring. All of them have a fully implemented data flow that allows the proper monitoring of pre-departure delays. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at Milan Linate, with more than 60% of the reported delay not allocated to any cause. Traffic at the ensemble of these Italian airports in 2022 is still 18% lower than in 2019, but increased 71% with respect to 2021.

Average arrival ATFM delays in 2022 was 0.07 min/arr, compared to 0.03 min/arr in 2021.

ATFM slot adherence has slightly deteriorated (2022: 96.1%; 2021: 96.8%).

2. Arrival ATFM Delay



The national average arrival ATFM delay at Italian airports in 2022 was 0.07 min/arr.

80% of all delays at Italian airports were attributed to weather and 12% associated with industrial action mostly at Milan Malpensa.

According to the Italian monitoring report: *it is important to show the figures that really contributed to the achievement of the ATM performance. Below there are the figures for the Terminal and airport ANS ATFM arrival delay per flight indicator which limited to ATM-only reasons of ATFM delay:*

National level:

LIMC: 0.00 m/f

LIME: 0.00 m/f

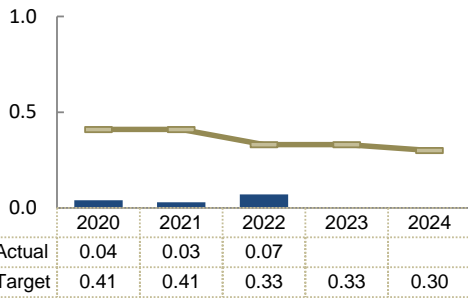
LIML: 0,02 m/f

LIPZ: 0,00 m/f

LIRF: 0.00 m/f

3. Arrival ATFM Delay – National Target

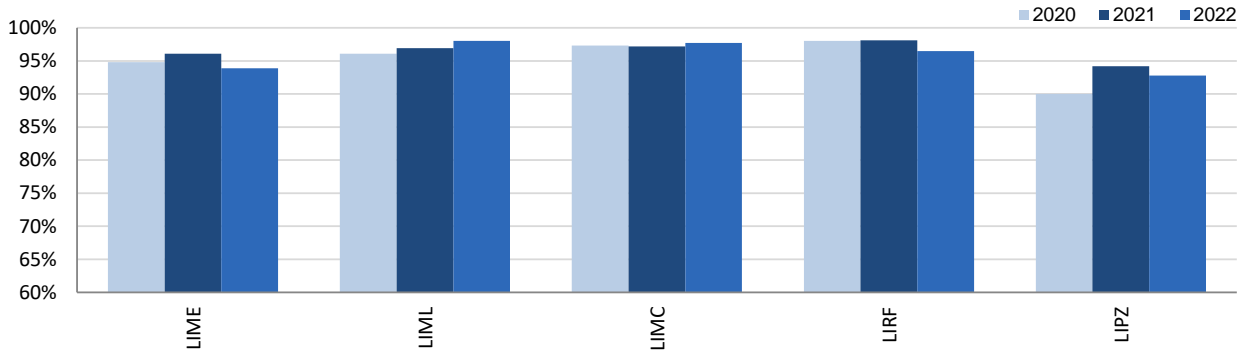
Arrival
ATFM
Delay



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence

Slot adherence



All Italian airports showed adherence above 94% and the national average was 96.1%. With regard to the 3.9% of flights that did not adhere, 2% was early and 1.9% was late.

5. ATC Pre-departure Delay

The performance at all four Italian airports where this indicator can be calculated has deteriorated in 2022 and are all among the highest values for this indicator in the SES monitored airports.

The quality of the airport data reported by Milan Linate was too low, preventing the calculation of this indicator for these two airports. The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at the Italian airports subject to monitoring.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Italian airports has increased in 2022. The highest pre-departure delays were observed at Milan Malpensa (LIMC: 2022: 23.51 min/dep) followed by Bergamo (LIME: 2022: 21.37 min/dep) and Venice (LIPZ: 2022: 20.06 min/dep). The worse delays were registered in June and July at all these airports.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|---------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Bergamo/Orio Alserio-LIME | 0.04 | 0.07 | 0.08 | | | 94.8% | 96.1% | 93.9% | | | 0.53 | 0.77 | 1.14 | | | 8.00 | 12.53 | 21.37 | | |
| Milan/Linate-LIML | 0.06 | 0.03 | 0.13 | | | 96.1% | 96.9% | 98.0% | | | n/a | n/a | n/a | | | 5.14 | 7.79 | 11.17 | | |
| Milan/Malpensa-LIMC | 0.02 | 0.05 | 0.09 | | | 97.3% | 97.2% | 97.7% | | | n/a | n/a | 1.18 | | | 17.81 | 20.14 | 23.51 | | |
| Rome/Fiumicino-LIRF | 0.02 | 0 | 0.04 | | | 98.0% | 98.1% | 96.5% | | | 0.64 | 0.89 | 1.56 | | | 6.44 | 9.22 | 14.93 | | |
| Venice/Tessera-LIPZ | 0.16 | 0.04 | 0.04 | | | 90.0% | 94.2% | 92.8% | | | 0.86 | 0.75 | 1.15 | | | 9.78 | 11.97 | 20.06 | | |

ITALY: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Italy ECZ represents 9.9% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 19 November 2021 and found consistent as per Commission Decision (EU) 2022/773 of 13 April 2022
The final version of the plan was adopted and published by Italy in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Italy: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|--------------|--------------|--------------|
| En route costs (nominal €) | 582 128 865 | 615 248 136 | 1 197 377 001 | 650 766 141 | 673 861 874 | 689 087 960 |
| Inflation % | 0.0% | 1.7% | | 1.8% | 1.2% | 1.2% |
| Inflation index (100 in 2017) | 101.8 | 103.5 | | 105.3 | 106.6 | 107.9 |
| Real en route costs (€2017) | 575 114 508 | 600 665 737 | 1 175 780 245 | 626 745 304 | 643 329 121 | 651 865 224 |
| Total en route service units | 3 989 844 | 5 514 000 | 9 503 844 | 8 507 000 | 10 457 000 | 11 278 000 |
| Real en route DUC per service unit (€2017) | 144.14 | 108.93 | 123.72 | 73.67 | 61.52 | 57.80 |

| Italy: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|---------------|---------------|---------------|--------------|-------|-------|
| En route costs (nominal €) | 582 128 865 | 605 975 491 | 1 188 104 356 | 647 326 051 | | |
| Inflation % | 0.0% | 1.9% | | 8.7% | | |
| Inflation index (100 in 2017) | 101.8 | 103.7 | | 112.8 | | |
| Real en route costs (€2017) | 575 114 508 | 590 576 041 | 1 165 690 549 | 593 954 426 | | |
| Total en route service units | 3 989 844 | 5 782 897 | 9 772 742 | 9 561 778 | | |
| Real en route AUC per service unit (€2017) | 144.14 | 102.12 | 119.28 | 62.12 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------------------------|-------------|--------------|--------------|---------------|------|------|
| En route costs (nominal €) | in value | 0 | -9 272 645 | -9 272 645 | -3 440 090 | | |
| | in % | - | -1.5% | -0.8% | -0.5% | | |
| Inflation % | in p.p. | 0.0 p.p. | 0.2 p.p. | | 6.9 p.p. | | |
| | Inflation index (100 in 2017) | in p.p. | 0.2 p.p. | | 7.4 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -10 089 696 | -10 089 696 | -32 790 878 | | |
| | in % | - | -1.7% | -0.9% | -5.2% | | |
| Total en route service units | in value | 0 | 268 897 | 268 897 | 1 054 778 | | |
| | in % | - | +4.9% | +2.8% | +12.4% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -6.81 | -4.44 | -11.56 | | |
| | in % | - | -6.3% | -3.6% | -15.7% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -15.7% (or -11.56 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+12.4%) and significantly lower than planned en route costs in real terms (-5.2%, or -32.8 M€2017). It should be noted that the actual inflation index in 2022 was +7.4 p.p. higher than planned.

En route service units

The difference between the 2022 actual and planned TSUs (+12.4%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ENAV) retaining an amount of +21.0 M€2017.

En route costs by entity

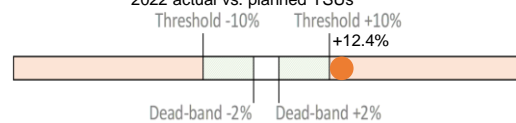
The 2022 actual real en route costs are -5.2% (-32.8 M€2017) lower than planned mainly due to the inflation impact. This translates in lower than planned costs in real terms for ENAV (-5.4%, or -28.4 M€2017), the other ANSP (ITAF, -6.0%, or -3.0 M€2017) and the NSA/EUROCONTROL (-2.8%, or -1.3 M€2017).

En route costs for the main ANSP (ENAV) at charging zone level

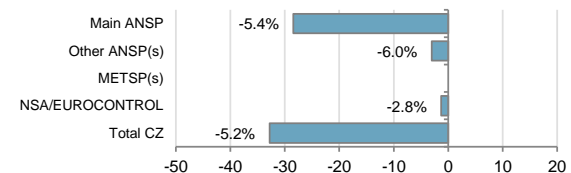
The 2022 actual real en route costs for ENAV are significantly lower than planned (-5.4%, or -28.4 M€2017) mainly due to the inflation impact:

- Significantly lower than planned staff costs (-5.5% or -17.8 M€2017) in real terms but higher than planned in nominal terms (+1.1%), also reported to be due to higher staff presence on site to manage the Summer traffic;
- Significantly lower than planned other operating costs (-12.5%, or -10.4 M€2017), reported to result "from savings in consultancy support which more than offset the increase in energy prices, lower maintenance costs, as well as lower external costs following the slowdown in ENAV investments";
- Significantly lower than planned depreciation costs (-9.7%, or -8.6 M€2017);
- Significantly higher than planned cost of capital (+22.2%, or +8.3 M€2017) due to higher than planned interest rate (from 1.86% to 3.86%) and a higher than planned asset base (+7.8%).

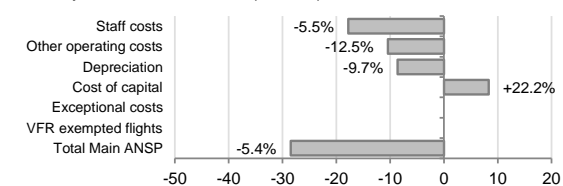
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



ITALY: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

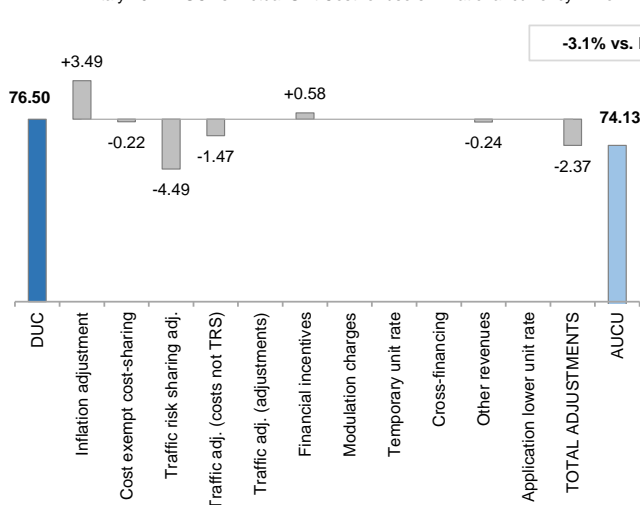
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Italy 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 76.50 |
| DUC to be charged retroactively | 0.00 |
| DUC | 76.50 |
| Inflation adjustment | 3.49 |
| Cost exempt from cost-sharing | -0.22 |
| Traffic risk sharing adjustment | -4.49 |
| Traffic adj. (costs not TRS) | -1.47 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.58 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -0.24 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -2.37 |
| AUCU | 74.13 |
| AUCU vs. DUC | -3.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

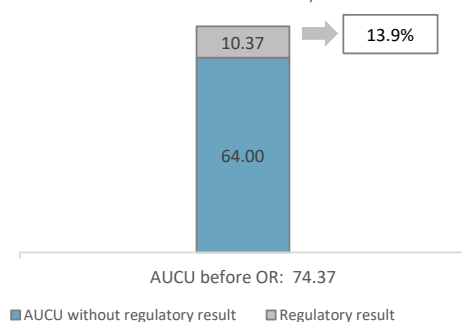
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|---------------|--------------|
| by item | New and existing investments | -2 574 | -0.27 |
| | Competent authorities and qualified entities costs | 40 | 0.00 |
| | Eurocontrol costs | -1 343 | -0.14 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 1 762 | 0.18 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -2 115 | -0.22 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| ENAV | 95 658 | 10.00 |
| ITAF | 3 459 | 0.36 |
| METSP(s) | € '000 | €/SU |
| | | |
| Total charging zone | 99 117 | 10.37 |
| Actual cost for users*** | 711 136 | 74.37 |
| Regulatory result (% AUCU) | 13.9% | 13.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (74.13 €) is -3.1% lower than the nominal DUC (76.50 €). The difference between these two figures (-2.37 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.49 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.22 €/SU);
- the deduction of the traffic risk sharing adjustments (-4.49 €/SU);
- the deduction of the traffic adjustment (-1.47 €/SU) for the costs not subject to traffic risk sharing;
- the financial incentives (+0.58 €/SU) which remain under review by the European Commission; and
- the deduction of the other revenues (-0.24 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 13.9%.

ITALY: En route main ANSP (ENAV)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

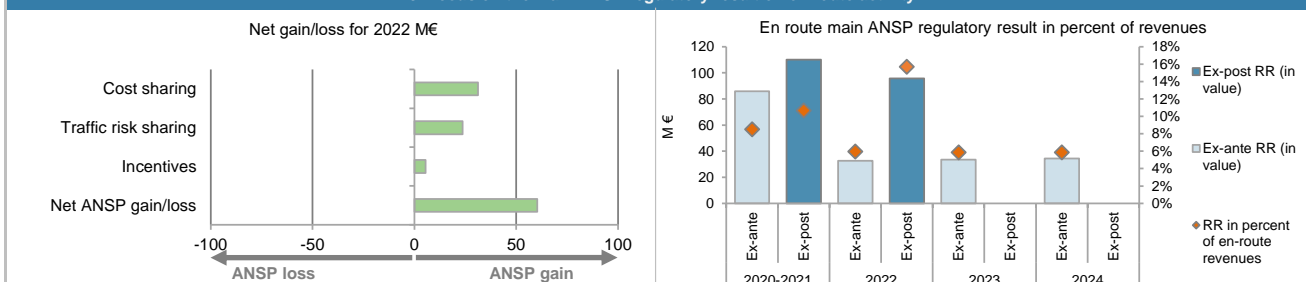
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 4 751 | 2 082 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 920 | 29 953 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -2 602 | -831 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 3 069 | 31 204 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.8% | 12.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 986 793 | 537 111 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 22 191 | 23 633 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 5 514 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 25 260 | 60 351 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAV planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|----------------|----------------|----------------|
| Total asset base | 884 478 | 1 124 267 | 2 008 745 | 1 003 431 | 909 701 | 907 796 |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | 75% | 75% |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | 4.9% | 5.0% |
| RoE (in value) | 43 562 | 42 447 | 86 009 | 32 754 | 33 458 | 34 352 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 43 562 | 42 447 | 86 009 | 32 754 | 33 458 | 34 352 |
| Revenue for the en route charging zone | 492 482 | 520 610 | 1 013 093 | 551 426 | 573 690 | 588 781 |
| Ex-ante regulatory result (+/-) in percent of revenues | 8.8% | 8.2% | 8.5% | 5.9% | 5.8% | 5.8% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | 4.9% | 5.0% |
| ENAV actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 884 478 | 1 096 750 | 1 981 229 | 1 081 642 | | |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | | |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | | |
| RoE (in value) | 43 562 | 41 408 | 84 970 | 35 307 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 25 260 | 25 260 | 60 351 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 43 562 | 66 668 | 110 230 | 95 658 | | |
| Revenue for the en route charging zone | 492 482 | 541 119 | 1 033 601 | 609 695 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 8.8% | 12.3% | 10.7% | 15.7% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 8.1% | 7.4% | 11.8% | | |

13. Focus on the main ANSP regulatory result on en route activity



ENAV net gain on activity in the Italy en route charging zone in the year 2022

ENAV reported a net gain of +60.4 M€, as a combination of a gain of +31.2 M€ arising from the cost sharing mechanism, with a gain of +23.6 M€ arising from the traffic risk sharing mechanism and a gain of +5.5 M€ relating to financial incentives. It should be noted that the application of financial incentives for year 2022 is under review by the European Commission, in accordance with Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020.

ENAV overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity above mentioned (+60.4 M€) and the actual RoE (+35.3 M€) amounts to +95.7 M€ (or 15.7% of the en route revenues). The resulting ex-post rate of return on equity is +11.8%, which is higher than the +4.4% planned in the PP.

ITALY: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| ITAF planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 46 725 | 49 060 | 95 785 | 53 316 | 53 927 | 53 949 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| ITAF actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 529 | 529 | 3 459 | | |
| Revenue for the en route charging zone | 46 725 | 48 861 | 95 586 | 56 719 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.1% | 0.6% | 6.1% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Italy (ITAF) corresponds to 6.1% of the en route revenues. It should be noted that ITAF does not charge any cost of capital. | | | | | | |

ITALY ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|----------------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Italy zone 1 TCZ represents 2.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Italy zone 1: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 30 724 712 | 30 961 063 | 61 685 776 | 32 694 898 | 34 117 550 | 34 270 939 |
| Inflation % | 0.0% | 1.7% | | 1.8% | 1.2% | 1.2% |
| Inflation index (100 in 2017) | 101.8 | 103.5 | | 105.3 | 106.6 | 107.9 |
| Real terminal costs (€2017) | 30 396 073 | 30 262 880 | 60 658 953 | 31 554 941 | 32 660 406 | 32 549 596 |
| Total terminal service units | 73 384 | 76 000 | 149 384 | 176 000 | 220 000 | 230 000 |
| Real terminal DUC per service unit (€2017) | 414.21 | 398.20 | 406.06 | 179.29 | 148.46 | 141.52 |
| Italy zone 1: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 30 724 712 | 29 912 032 | 60 636 744 | 33 106 202 | | |
| Inflation % | 0.0% | 1.9% | | 8.7% | | |
| Inflation index (100 in 2017) | 101.8 | 103.7 | | 112.8 | | |
| Real terminal costs (€2017) | 30 396 073 | 29 175 188 | 59 571 260 | 30 551 424 | | |
| Total terminal service units | 73 384 | 79 337 | 152 720 | 158 726 | | |
| Real terminal AUC per service unit (€2017) | 414.21 | 367.74 | 390.07 | 192.48 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value 0 | -1 049 031 | -1 049 031 | 411 304 | | |
| | in % - | -3.4% | -1.7% | +1.3% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.2 p.p. | | 6.9 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.2 p.p. | | 7.4 p.p. | | |
| Real terminal costs (€2017) | in value 0 | -1 087 692 | -1 087 692 | -1 003 517 | | |
| | in % - | -3.6% | -1.8% | -3.2% | | |
| Total terminal service units | in value 0 | 3 337 | 3 337 | -17 274 | | |
| | in % - | +4.4% | +2.2% | -9.8% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -30.46 | -15.99 | 13.19 | | |
| | in % - | -7.6% | -3.9% | +7.4% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was +7.4% (or +13.19 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-9.8%) and lower than planned terminal costs in real terms (-3.2%, or -1.0 M€2017). It should be noted that actual inflation index in 2022 was +7.4 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal charging zone 1 service units</p> <p>The difference between actual and planned TNSUs (-9.8%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ENAV) bearing a loss of -1.2 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal charging zone 1 costs by entity</p> <p>The 2022 actual real terminal costs for the TCZ1 are -3.2% (-1.0 M€2017) lower than planned, mainly due to the inflation impact since in nominal terms the costs are +1.3% higher than planned. This translates in lower than planned costs for the main ANSP, ENAV (-3.3%, or -1.0 M€2017) and higher costs for the NSA (+6.9%, or +0.02 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal charging zone 1 costs for the main ANSP (ENAV) at charging zone level</p> <p>The terminal zone 1 costs in real terms for ENAV are lower than planned in 2022 (-3.3%, or -1.0 M€2017) mainly due to the inflation impact:</p> <ul style="list-style-type: none"> - Lower than planned staff costs in real terms (-3.8%, or -0.6 M€2017), mainly due to the inflation impact since in nominal terms staff costs are higher than planned (+2.9%), and reported to be mainly due to higher staff presence on site to manage the Summer traffic; - Significantly lower other operating costs (-12.9%, or -0.7 M€2017), reported to result "from savings in consultancy support which more than offset the increase in energy prices, lower maintenance costs, as well as lower external costs following the slowdown in ENAV investments"; - Significantly lower depreciation costs (-9.7%, or -0.6 M€2017); - Significantly higher cost of capital (+22.2%, or +0.9 M€2017) due to higher than planned average interest rate (from 1.86% to 3.86%) and a higher asset base (+7.8%). | | | | | | |

ITALY ZONE 1: Terminal charging zone

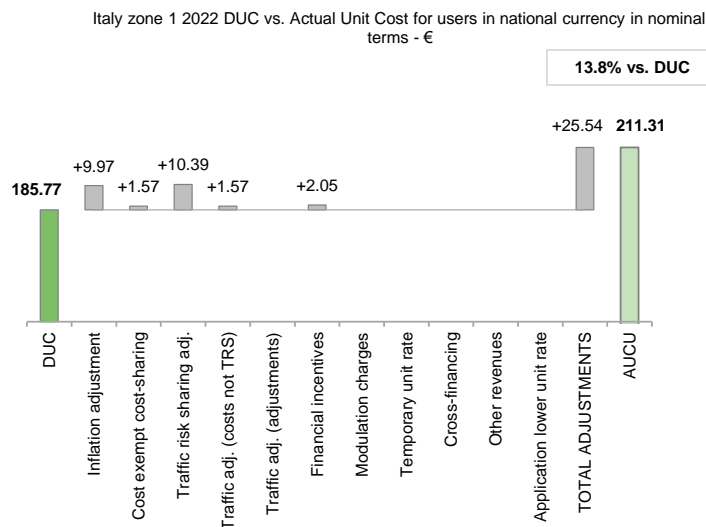
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 185.77 |
| DUC to be charged retroactively | 0.00 |
| DUC | 185.77 |
| Inflation adjustment | 9.97 |
| Cost exempt from cost-sharing | 1.57 |
| Traffic risk sharing adjustment | 10.39 |
| Traffic adj. (costs not TRS) | 1.57 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 2.05 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 25.54 |
| AUCU | 211.31 |
| AUCU vs. DUC | 13.8% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

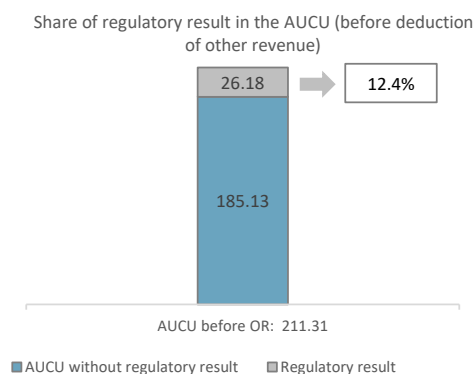
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|------------|-------------|
| by item | New and existing investments | 48 | 0.30 |
| | Competent authorities and qualified entities costs | 15 | 0.10 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 186 | 1.17 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | 249 | 1.57 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| ENAV | 4 155 | 26.18 |
| METSP(s) | | |
| | | |
| Total charging zone | 4 155 | 26.18 |
| Actual cost for users*** | 33 541 | 211.31 |
| Regulatory result (% AUCU) | 12.4% | 12.4% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (211.31 €) is +13.8% higher than the nominal DUC (185.77 €). The difference between these two figures (+25.54 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+9.97 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+1.57 €/SU);
- the addition of the traffic risk sharing adjustments (+10.39 €/SU);
- the addition of the traffic adjustment (+1.57 €/SU) for the costs not subject to traffic risk sharing; and
- the financial incentives (+2.05 €/SU) which remain under review by the European Commission.

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 12.4%.

ITALY ZONE 1: Terminal main ANSP (ENAV)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

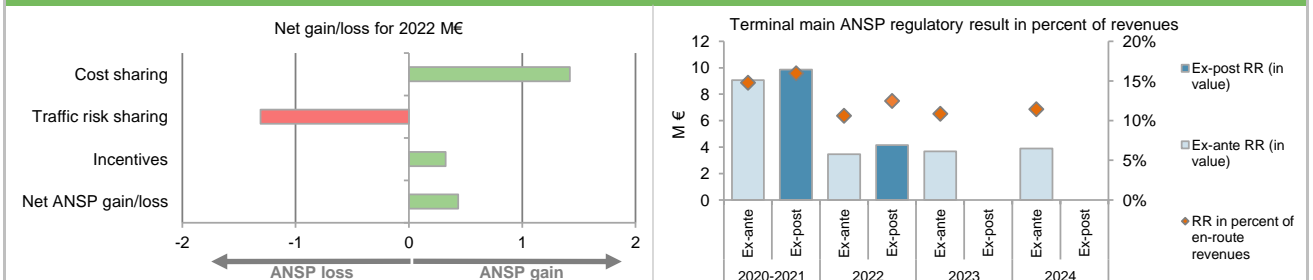
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 017 | -396 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 49 | 1 582 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -700 | 233 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 366 | 1 420 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.2% | -9.8% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 56 880 | 30 152 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 177 | -1 310 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 325 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 1 543 | 434 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAV planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 106 968 | 100 559 | 207 527 | 105 750 | 100 114 | 102 955 |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | 75% | 75% |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.8% | 4.4% | 4.9% | 5.0% |
| RoE (in value) | 5 268 | 3 797 | 9 065 | 3 452 | 3 682 | 3 896 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 5 268 | 3 797 | 9 065 | 3 452 | 3 682 | 3 896 |
| Revenue for the terminal charging zone | 30 516 | 30 737 | 61 254 | 32 471 | 33 894 | 34 047 |
| Ex-ante regulatory result (+/-) in percent of revenues | 17.3% | 12.4% | 14.8% | 10.6% | 10.9% | 11.4% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.8% | 4.4% | 4.9% | 5.0% |
| ENAV actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 106 968 | 80 634 | 187 602 | 113 993 | | |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | | |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.9% | 4.4% | | |
| RoE (in value) | 5 268 | 3 044 | 8 313 | 3 721 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 1 543 | 1 543 | 434 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 5 268 | 4 588 | 9 856 | 4 155 | | |
| Revenue for the terminal charging zone | 30 516 | 31 264 | 61 780 | 33 301 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 17.3% | 14.7% | 16.0% | 12.5% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 7.6% | 7.0% | 4.9% | | |

13. Focus on main ANSP regulatory result on terminal activity



ENAV net gain on activity in the Italy terminal charging zone 1 in the year 2022

ENAV reported a net gain of +0.4 M€, as a combination of a gain of +1.4 M€ arising from the cost sharing mechanism, with a loss of -1.3 M€ arising from the traffic risk sharing mechanism and a gain of +0.3 M€ relating to financial incentives. It should be noted that the application of financial incentives for year 2022 is under review by the European Commission, in accordance with Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020.

ENAV overall regulatory results (RR) for the terminal charging zone 1 activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+0.4 M€) and the actual RoE (+3.7 M€) amounts to +4.2 M€ (12.5% of the terminal revenues of the TCZ1). The resulting ex-post rate of return on equity is +4.9%, which is higher than the +4.4% planned in the PP.

ITALY ZONE 2: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Italy zone 2 TCZ represents 4.6% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 4 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 4 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Italy zone 2: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 53 719 717 | 57 125 883 | 110 845 600 | 61 486 950 | 64 129 608 | 65 855 281 |
| Inflation % | 0.0% | 1.7% | | 1.8% | 1.2% | 1.2% |
| Inflation index (100 in 2017) | 101.8 | 103.5 | | 105.3 | 106.6 | 107.9 |
| Real terminal costs (€2017) | 53 066 438 | 55 741 234 | 108 807 672 | 59 192 224 | 61 196 632 | 62 266 240 |
| Total terminal service units | 143 170 | 179 000 | 322 170 | 270 000 | 323 000 | 340 000 |
| Real terminal DUC per service unit (€2017) | 370.65 | 311.40 | 337.73 | 219.23 | 189.46 | 183.14 |
| Italy zone 2: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 53 719 717 | 56 959 523 | 110 679 240 | 61 043 741 | | |
| Inflation % | 0.0% | 1.9% | | 8.7% | | |
| Inflation index (100 in 2017) | 101.8 | 103.7 | | 112.8 | | |
| Real terminal costs (€2017) | 53 066 438 | 55 498 437 | 108 564 875 | 55 971 604 | | |
| Total terminal service units | 143 170 | 191 446 | 334 616 | 309 238 | | |
| Real terminal AUC per service unit (€2017) | 370.65 | 289.89 | 324.45 | 181.00 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -166 360 | -166 360 | -443 208 | |
| | in % | - | -0.3% | -0.2% | -0.7% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.2 p.p. | | 6.9 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.2 p.p. | | 7.4 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -242 797 | -242 797 | -3 220 621 | |
| | in % | - | -0.4% | -0.2% | -5.4% | |
| Total terminal service units | in value | 0 | 12 446 | 12 446 | 39 238 | |
| | in % | - | +7.0% | +3.9% | +14.5% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -21.51 | -13.29 | -38.23 | |
| | in % | - | -6.9% | -3.9% | -17.4% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -17.4% (or -38.23 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TNSUs (+14.5%) and significantly lower than planned terminal costs in real terms (-5.4%, or -3.2 M€2017). It should be noted that actual inflation index in 2022 was +7.4 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+14.5%</p> | | | |
| <p>Terminal charging zone 2 service units</p> <p>The difference between actual and planned TNSUs (+14.5%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ENAV) retaining an amount of +2.2 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal charging zone 2 costs by entity</p> <p>Actual real terminal costs are -5.4% (-3.2 M€2017) lower than planned. This is the result of lower costs for the main ANSP, ENAV (-5.5%, or -3.2 M€2017) and higher costs for the NSA (+6.9%, or +0.02 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal charging zone 2 costs for the main ANSP (ENAV) at charging zone level</p> <p>The terminal zone 2 costs in real terms for ENAV are lower than planned in 2022 (-5.5%, or -3.2 M€2017) mainly due to the inflation impact:</p> <ul style="list-style-type: none"> - Lower than planned staff costs in real terms (-5.5%, or -1.7 M€2017) mainly due to the inflation impact since in nominal terms staff costs are higher than planned (+1.2%), and reported to be mainly due to higher staff presence on site to manage the Summer traffic; - Significantly lower than planned other operating costs (-12.9%, or -1.4 M€2017); reported to result "from savings in consultancy support which more than offset the increase in energy prices, lower maintenance costs, as well as lower external costs following the slowdown in ENAV investments"; - Significantly lower depreciation (-9.7%, or -1.1 M€2017); - Significantly higher cost of capital (+22.2%, or +1.0 M€2017) due to higher than planned average interest rate (from 1.86% to 3.86%) and a higher asset base (+7.8%). | | | | | | |

ITALY ZONE 2: Terminal charging zone

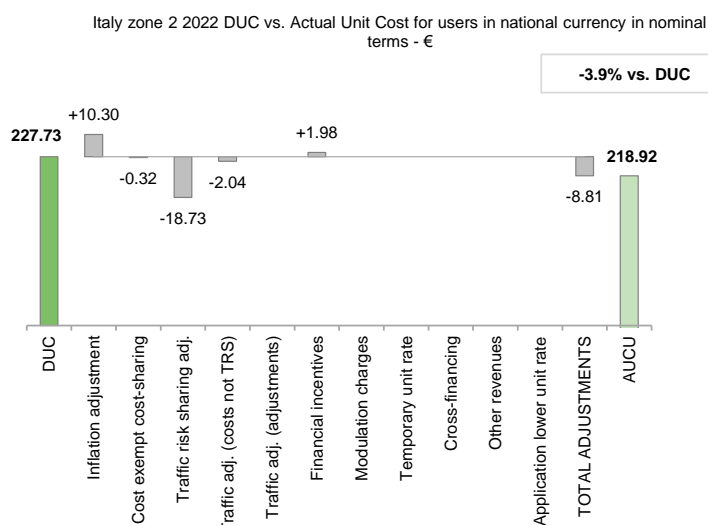
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 198.96 |
| DUC to be charged retroactively | 28.77 |
| DUC | 227.73 |
| Inflation adjustment | 10.30 |
| Cost exempt from cost-sharing | -0.32 |
| Traffic risk sharing adjustment | -18.73 |
| Traffic adj. (costs not TRS) | -2.04 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 1.98 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -8.81 |
| AUCU | 218.92 |
| AUCU vs. DUC | -3.9% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

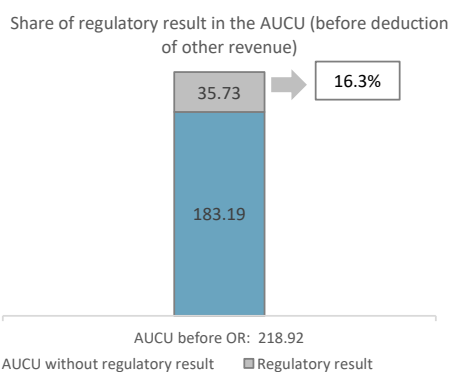
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|------------|--------------|
| by item | New and existing investments | -342 | -1.10 |
| | Competent authorities and qualified entities costs | 24 | 0.08 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 219 | 0.71 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -98 | -0.32 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| ENAV | 11 049 | 35.73 |
| METSP(s) | € '000 | €/SU |
| | | |
| Total charging zone | 11 049 | 35.73 |
| Actual cost for users*** | 67 699 | 218.92 |
| Regulatory result (% AUCU) | 16.3% | 16.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (218.92 €) is -3.9% lower than the nominal DUC (227.73 €). The difference between these two figures (-8.81 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+10.30 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.32 €/SU);
- the deduction of the traffic risk sharing adjustments (-18.73 €/SU);
- the deduction of the traffic adjustment (-2.04 €/SU) for the costs not subject to traffic risk sharing; and
- the financial incentives (+1.98 €/SU) which remain under review by the European Commission.

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 16.3%.

ITALY ZONE 2: Terminal main ANSP (ENAV)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

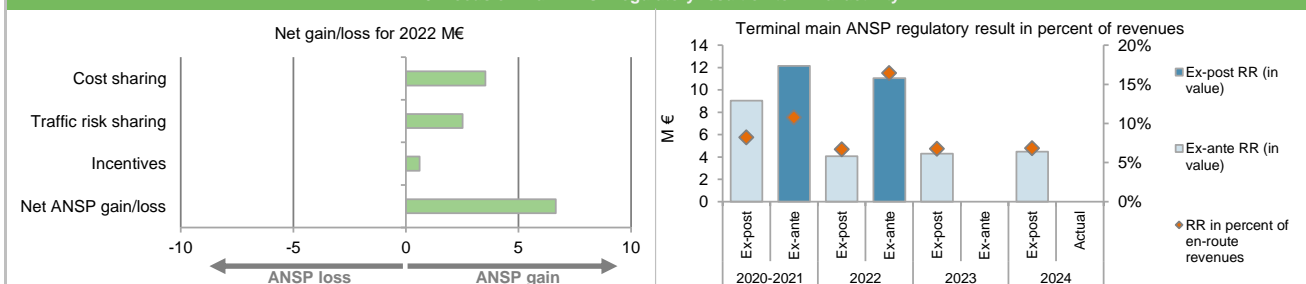
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 116 | 467 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 97 | 3 185 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -19 | -122 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 194 | 3 529 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 3.9% | 14.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 102 984 | 57 149 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 2 635 | 2 515 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 611 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 2 829 | 6 655 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAV planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|----------------|---------------|---------------|---------------|
| Total asset base | 92 922 | 118 048 | 210 970 | 124 871 | 117 125 | 118 266 |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | 75% | 75% |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | 4.9% | 5.0% |
| RoE (in value) | 4 577 | 4 457 | 9 033 | 4 076 | 4 308 | 4 475 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 4 577 | 4 457 | 9 033 | 4 076 | 4 308 | 4 475 |
| Revenue for the terminal charging zone | 53 395 | 56 777 | 110 173 | 61 139 | 63 781 | 65 507 |
| Ex-ante regulatory result (+/-) in percent of revenues | 8.6% | 7.8% | 8.2% | 6.7% | 6.8% | 6.8% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | 4.9% | 5.0% |
| ENAV actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 92 922 | 125 431 | 218 353 | 134 604 | | |
| Proportion of financing through equity (in %) | 75% | 75% | 75% | 75% | | |
| RoE pre-tax rate (in %) | 6.6% | 5.0% | 5.7% | 4.4% | | |
| RoE (in value) | 4 577 | 4 736 | 9 312 | 4 394 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 2 829 | 2 829 | 6 655 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 4 577 | 7 565 | 12 141 | 11 049 | | |
| Revenue for the terminal charging zone | 53 395 | 59 491 | 112 886 | 67 327 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 8.6% | 12.7% | 10.8% | 16.4% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 8.0% | 7.4% | 10.9% | | |

13. Focus on main ANSP regulatory result on terminal activity



ENAV net gain on activity in the Italy terminal charging zone 2 in the year 2022

ENAV reported a net gain of +6.7 M€, as a combination of a gain of +3.5 M€ arising from the cost sharing mechanism, a gain of +2.5 M€ arising from the traffic risk sharing mechanism and a gain of +0.6 M€ relating to financial incentives. It should be noted that the application of financial incentives for year 2022 is under review by the European Commission, in accordance with Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020.

ENAV overall regulatory results (RR) for the terminal charging zone 2 activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+6.7 M€) and the actual RoE (+4.4 M€) amounts to +11.0 M€ (16.4% of the terminal revenues of the TCZ2). The resulting ex-post rate of return on equity is +10.9%, which is higher than the +4.4% planned in the PP.

ITALY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|---|---------------|----------------|---------------|----------------|----------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Italy | | | | | | | |
| Terminal charging zone 1: Italy zone 1 Terminal charging zone 2: Italy zone 2 | | | | | | | |
| Italy: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 575 114 508 | 600 665 737 | 1 175 780 245 | 626 745 304 | 643 329 121 | 651 865 224 |
| Real terminal costs (€2017) | | 83 462 511 | 86 004 114 | 169 466 625 | 90 747 166 | 93 857 038 | 94 815 836 |
| Real gate-to-gate costs (€2017) | | 658 577 019 | 686 669 851 | 1 345 246 869 | 717 492 470 | 737 186 159 | 746 681 060 |
| En route share (%) | | 87.3% | 87.5% | 87.4% | 87.4% | 87.3% | 87.3% |
| Italy: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 575 114 508 | 590 576 041 | 1 165 690 549 | 593 954 426 | | |
| Real terminal costs (€2017) | | 83 462 511 | 84 673 624 | 168 136 135 | 86 523 028 | | |
| Real gate-to-gate costs (€2017) | | 658 577 019 | 675 249 665 | 1 333 826 684 | 680 477 454 | | |
| En route share (%) | | 87.3% | 87.5% | 87.4% | 87.3% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| | in value | 0 | -11 420 185 | -11 420 185 | -37 015 016 | | |
| | in % | 0.0% | -1.7% | -0.8% | -5.2% | | |
| En route share | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.0 p.p. | -0.0 p.p. | -0.1 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -5.2% (-37.0 M€2017) lower than planned, as en route costs are lower than planned by -32.8 M€2017 and terminal costs are lower than planned by -4.2 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (87.3%) is slightly lower than planned in the PP for 2022 (87.4%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| ENAV | 40 282 | 645 036 | 6.2% | 110 863 | 710 323 | 15.6% | |
| ITAF | 0 | 53 316 | 0.0% | 3 459 | 56 719 | 6.1% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| | | | | | | | |
| Total | 40 282 | 698 351 | 5.8% | 114 321 | 767 042 | 14.9% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Italy covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +114.3 M€ (+99.1 M€ for en route and +15.2 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to +14.9% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year 2022 (+5.8% of gate-to-gate revenues).</p> | | | | | | | |
| <p>Italy gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Latvia

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LATVIA

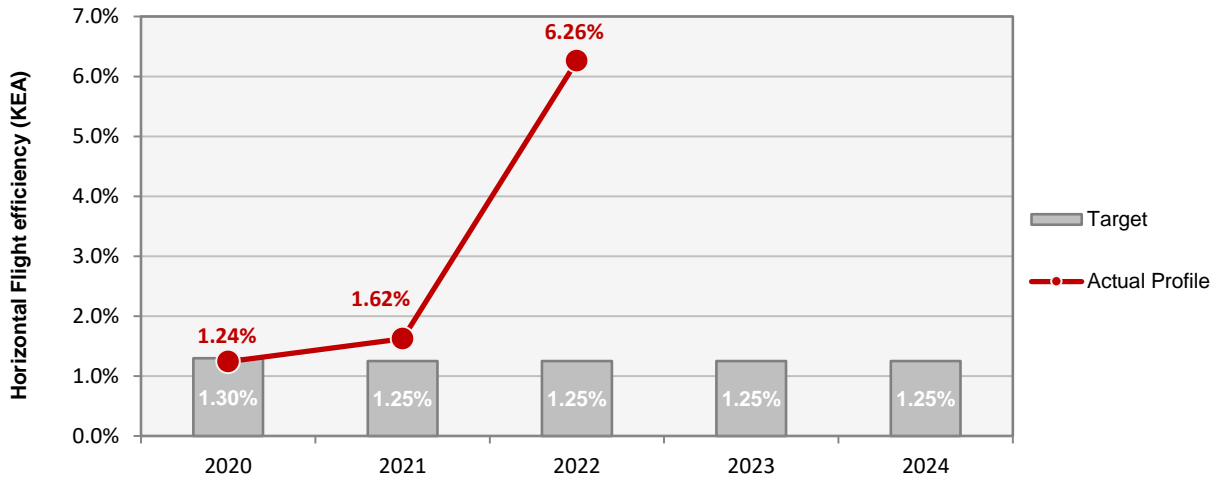
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| SJSC | 94 | D | B | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| <p>Three out of five EoSM components of the ANSP meet the RP3 target level. One question need to improve to reach RP3 target for "Safety Risk Management". Compared with 2021, in 2022 degradation was observed in maturity level for "Safety Policy and Objectives" for one question, reducing the achieved level from C to B and consequently not achieving the target for this component.</p> | | | | | | |

LATVIA

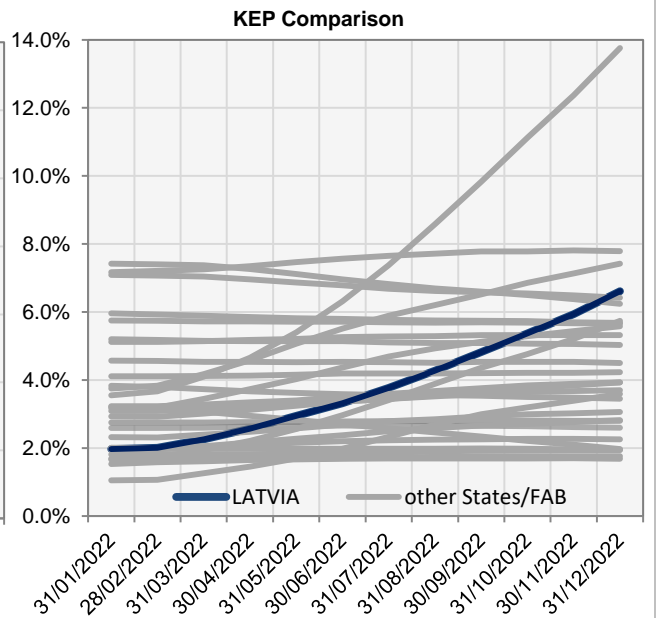
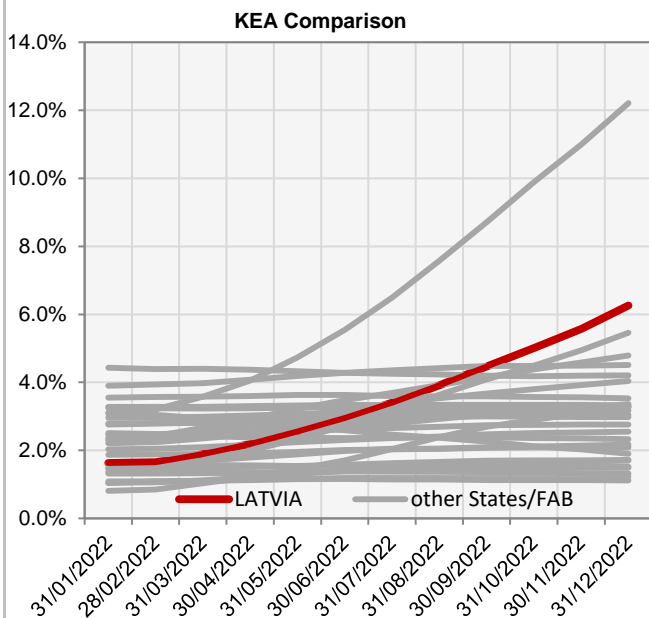
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.30% | 1.25% | 1.25% | 1.25% | 1.25% |
| Actual performance | 1.24% | 1.62% | 6.26% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.63% | 1.65% | 1.89% | 2.19% | 2.56% | 2.95% | 3.40% | 3.91% | 4.46% | 5.01% | 5.57% | 6.26% |
| KEP | 1.97% | 2.01% | 2.26% | 2.57% | 2.95% | 3.32% | 3.77% | 4.28% | 4.82% | 5.37% | 5.94% | 6.61% |
| KES | 1.64% | 1.68% | 1.92% | 2.24% | 2.63% | 3.03% | 3.51% | 4.04% | 4.59% | 5.13% | 5.69% | 6.34% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

LATVIA

ENVIRONMENT - Airports

1. Overview

Latvia identified 3 airports as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 3 airports, additional taxi-out and ASMA times are not monitored and the environmental performance focuses only on the share of arrivals applying CDO.

The shares of CDO flights increased at all airports. The shares of CDO flights at Riga and Ventstpils were well above the overall RP3 value in 2022.

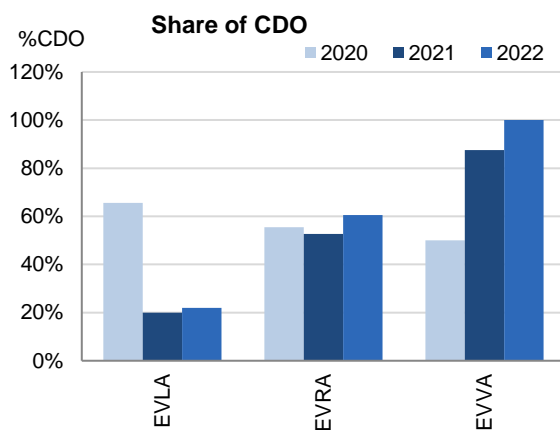
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

4. Share of arrivals applying CDO



The shares of CDO flights have increased at all airports in Latvia.

Ventstpils had only 1 detected flight in 2022. This flight was considered a CDO flight so Ventstpils has a share of 100% CDO.

Riga and Ventstpils have values well above the overall RP3 value in 2022 (29.0%).

According to the Latvian monitoring report: Continuous Decent operations have been implemented at Riga airport in 2021. Monitoring is performed by Riga Airport and data is shared in Environment work group of Riga Airport, in which the CAA also participates.

EVLA airport is served by AFIS only and during certain working hours while EVVA airport has no ATS, they do not have CDOs.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-----------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Liepaya-EVLA | - | - | - | - | - | - | - | - | - | - | 66% | 20% | 22% | | |
| Riga-EVRA | - | - | - | - | - | - | - | - | - | - | 56% | 53% | 61% | | |
| Ventstpils-EVVA | - | - | - | - | - | - | - | - | - | - | 50% | 88% | 100% | | |

LATVIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

No impact of military on capacity has been identified. Current decrease in air traffic due to sanctions on Russia and Belorussia and flexible arrangements between the LGS and the National Armed Forces allow for environmentally friendly flight trajectories and it reduces the impact to capacity.

Additional information related to Russia's war of aggression against Ukraine

In general, military training activities have increased over the past years. At the same time, civil airspace design and airspace use flexibility provisions between the NAF and LGS ensure that there's no impact on scheduled air traffic.

New large military FUA areas over Eastern part of the Riga FIR, next to Russian Federation and Belorussia, have been established.

Military - related measures implemented or planned to improve capacity

Each new long term or short term area for military purposes undergoes airspace design analysis with respect to impact on major air traffic flows as to not to disrupt them or to change their vertical dimensions dynamically, if necessary.

Close cooperation between Latvian ANSP and the Latvian military.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Latvia | 13% | 87% | 59% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Riga | 13% | 87% | 59% | | |

Initiatives implemented or planned to improve PI#6

Existing LGS and NAF airspace booking and airspace use procedures are continuously being updated. This data includes all FUA areas, including those being active for 24/7 for longer periods of time, but not on continuous basis. Due to involvement of military units from different countries, individual airspace planning and airspace use capabilities are not the same each year and do not ensure the same consistent performance in airspace use, even if planned through the Latvian NAF.

The results of the assessment are also shared with the Military Aviation Administration for further review.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Latvia | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Riga | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

FRA has been implemented in 2015.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Latvia | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Riga | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

FRA in Riga FIR was implemented in 2015.

LATVIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|---|------|------|------|------|------|--------------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | 0.06 | 0.01 | 0.03 | 0.03 | 0.03 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>After two years of COVID-19 pandemic, along with the other Baltic states, Latvia was hit by the aftermath of Russian invasion in Ukraine. Sanctions imposed by EU, along with the sanctions imposed by Russia against EU, changed the traffic flows dramatically.</p> <p>Traffic flow between Russia to Europe stopped, while the Europe ↔ China and Europe ↔ SE Asia segments dramatically dropped. Due to restrictions on overflying EU airspace, Russian aircraft operators started to fly over high seas in the Baltic sea in order to connect Kaliningrad to mainland Russia. This increased the traffic in Latvian delegated airspace, but has a negative impact on the receivables of the ANSP.</p> <p>Due to Russian invasion in Ukraine and the EU sanctions against the Russia and Belorussia, air traffic flows have remained at approximately 60% of 2019 air traffic level.</p> <p>No capacity issues have been identified.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Capacity monitoring takes place during annual inspections, in addition to regular monthly statistical data sent by the LGS to the LV CAA. | | | | | | | |
| Capacity Planning | | | | | | | |
| Capacity planning measures by LGS are checked during annual inspections. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Riga ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 58 | 63 | 62 | 61 | |
| Actual | 56 | 60 | 58 | 58 | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Not applicable | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Latvia experienced an increase in traffic from 163k flights in 2021, with zero ATFM delay, to 190k flights in 2022, also with zero en route ATFM delay.</p> <p>Traffic levels were still substantially below the 295k flights in 2019.</p> | | | | | | | |

1. Overview

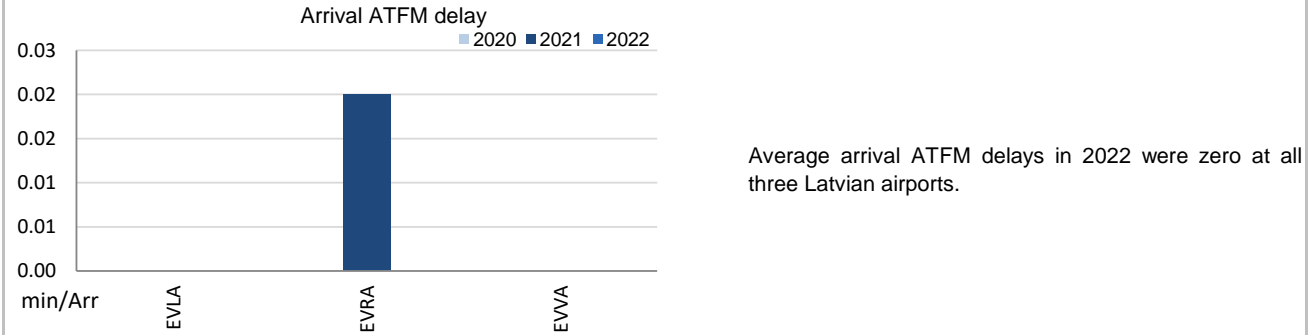
Latvia identified 4 airports as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, pre-departure delays are not monitored and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.

Traffic at these Latvian airports in 2022 was still 36% lower than in 2019, regardless of a 43% increase with respect to 2021.

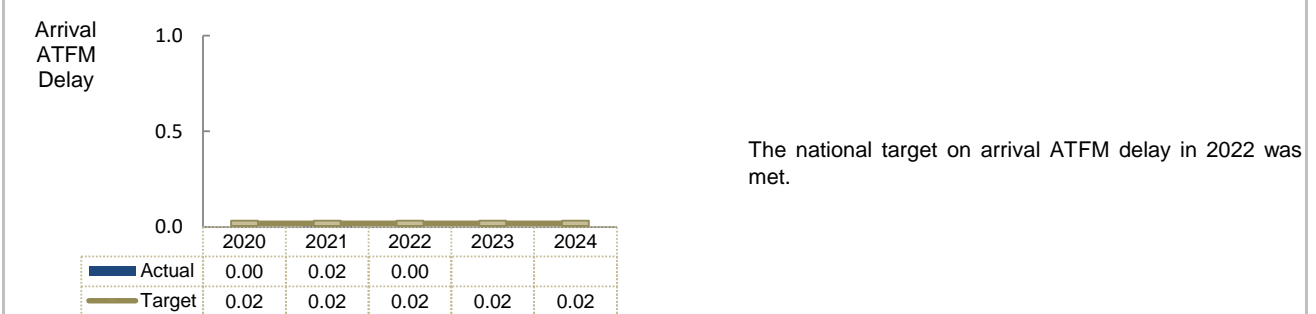
Average arrival ATFM delays in 2022 was 0.00 min/arr, compared to 0.02 min/arr in 2021.

ATFM slot adherence has improved (2022: 99.6%; 2021: 98.8%).

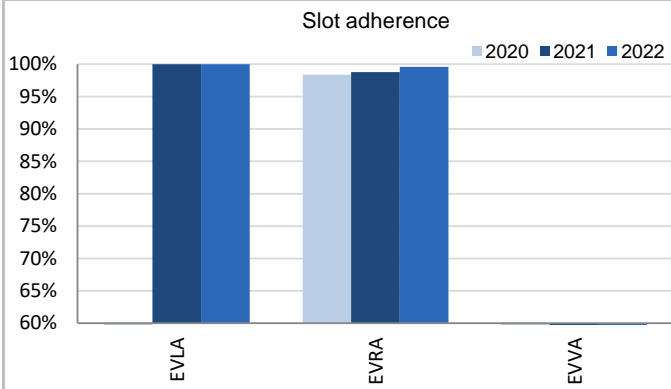
2. Arrival ATFM Delay



3. Arrival ATFM Delay – National Target



4. ATFM Slot Adherence



Riga's ATFM slot compliance was 99.6%, a further improvement with respect to the already good value in 2021 (98.8%). With regard to the 0.4% of flights that did not adhere, 0.3% was early and 0.1% was late. EVVA did not have any regulated departures and EVLA had only 4, with a 100% slot adherence.

According to the Latvian monitoring report: *LGS provides to the CAA monthly summary of the ATFM slot adherence data. In comparison to previous years, ATFM slot adherence has remained very high.*

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|----------------|------------------------|------|------|------|------|----------------|--------|--------|------|------|-------------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Liepaya-EVLA | 0 | 0 | 0 | | | n/a | 100.0% | 100.0% | | | - | - | - | | | - | - | - | | |
| Riga-EVRA | 0 | 0.02 | 0 | | | 98.4% | 98.8% | 99.6% | | | - | - | - | | | - | - | - | | |
| Ventspils-EVVA | 0 | 0 | 0 | | | n/a | n/a | n/a | | | - | - | - | | | - | - | - | | |

LATVIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Latvia ECZ represents 0.3% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2426 of 5 December 2022
The final version of the plan was adopted and published by Latvia in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Latvia: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 19 790 150 | 20 295 138 | 40 085 288 | 20 051 203 | 22 707 660 | 22 828 981 |
| Inflation % | 0.1% | 2.1% | | 10.0% | 3.9% | 3.1% |
| Inflation index (100 in 2017) | 105.5 | 107.7 | | 119.7 | 124.3 | 128.1 |
| Real en route costs (€2017) | 19 046 363 | 19 273 567 | 38 319 930 | 17 724 537 | 19 519 091 | 19 144 924 |
| Total en route service units | 439 248 | 517 000 | 956 248 | 466 000 | 548 000 | 570 000 |
| Real en route DUC per service unit (€2017) | 43.36 | 37.28 | 40.07 | 38.04 | 35.62 | 33.59 |

| Latvia: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 19 790 150 | 18 651 514 | 38 441 664 | 19 589 130 | | |
| Inflation % | 0.1% | 3.2% | | 17.2% | | |
| Inflation index (100 in 2017) | 105.5 | 108.8 | | 127.5 | | |
| Real en route costs (€2017) | 19 046 363 | 17 572 511 | 36 618 874 | 16 653 659 | | |
| Total en route service units | 439 248 | 541 944 | 981 192 | 465 601 | | |
| Real en route AUC per service unit (€2017) | 43.36 | 32.42 | 37.32 | 35.77 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-----------------|-------------|---------------|--------------|--------------|------|------|
| En route costs (nominal €) | in value | 0 | -1 643 624 | -1 643 624 | -462 073 | | |
| | in % | - | -8.1% | -4.1% | -2.3% | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.1 p.p. | | 7.2 p.p. | | |
| | in p.p. | 0.0 p.p. | 1.1 p.p. | | 7.8 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -1 701 055 | -1 701 055 | -1 070 878 | | |
| | in % | - | -8.8% | -4.4% | -6.0% | | |
| Total en route service units | in value | 0 | 24 944 | 24 944 | -399 | | |
| | in % | - | +4.8% | +2.6% | -0.1% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -4.85 | -2.75 | -2.27 | | |
| | in % | - | -13.0% | -6.9% | -6.0% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -6.0% (or -2.27 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-6.0%, or -1.1 M€2017) and TSUs that are in line with the plan. It should be noted that actual inflation index in 2022 was +7.8 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-0.1%) falls inside the ±2% dead band. Hence loss of en route revenues is borne by the ANSPs (see items 10 to 14).

En route costs by entity

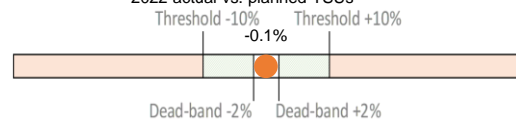
Actual real en route costs are -6.0% (-1.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LGS (-5.8%, or -0.9 M€2017), the NSA/EUROCONTROL (-7.4%, or -0.2 M€2017) and the MET service provider (-6.6%, or -0.02 M€2017).

En route costs for the main ANSP (LGS) at charging zone level

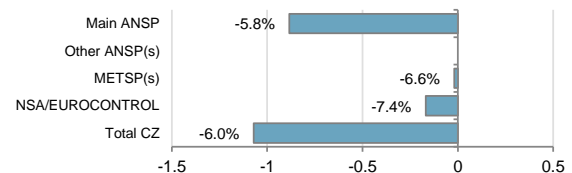
Significantly lower than planned en route costs in real terms for LGS in 2022 (-5.8%, or -0.9 M€2017) result from:

- Significantly lower staff costs (-9.1%), mainly due to the war in Ukraine, which did not allow a return to pre-COVID situation and had an impact on staff plan and on reallocation of costs between En-route and Terminal, based on Activity Based Costing method.
- Significantly lower other operating costs (-13.1%), resulting from austerity measures required by the new crisis situation (ATCOs training courses cancelled, reduction of direct spending for ATCOs...).
- Significantly higher depreciation (+7.4%), due to the commissioning of several large investment projects, mostly related to ATS and launched before the pandemic. A number of unplanned investments for the ACC also resulted in higher-than-expected costs.
- Significantly higher cost of capital (+6.4%). This can be explained by the fact that a number of investments were commissioned slightly earlier than planned, resulting in higher costs.
- Significantly lower deduction for VFR exempted flights (-12.4%).

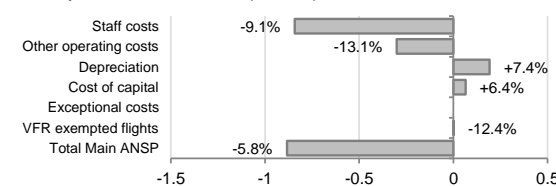
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



LATVIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

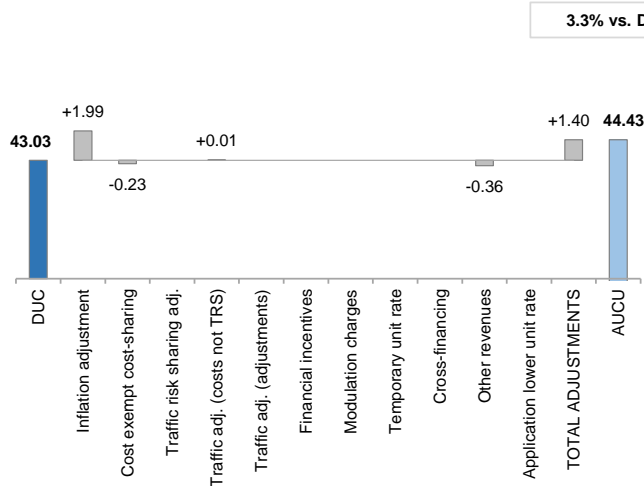
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Latvia 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 33.60 |
| DUC to be charged retroactively | 9.43 |
| DUC | 43.03 |
| Inflation adjustment | 1.99 |
| Cost exempt from cost-sharing | -0.23 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.01 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -0.36 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 1.40 |
| AUCU | 44.43 |
| AUCU vs. DUC | +3.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

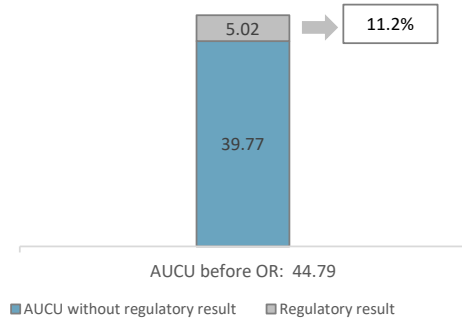
7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-------------|--------------|
| by item | New and existing investments | 112 | 0.24 |
| | Competent authorities and qualified entities costs | -61 | -0.13 |
| | Eurocontrol costs | -107 | -0.23 |
| | Pension costs | -50 | -0.11 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -106 | -0.23 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| LGS | 2 323 | 4.99 |
| METSP(s) | € '000 | €/SU |
| Latvia MET | 14 | 0.03 |
| Total charging zone | 2 337 | 5.02 |
| Actual cost for users*** | 20 856 | 44.79 |
| Regulatory result (% AUCU) | 11.2% | 11.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (44.43 €) is +3.3% higher than the nominal DUC (43.03 €). The difference between these two figures (+1.40 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+1.99 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.23 €/SU);
- the addition of the traffic adjustment (+0.01 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.36 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 11.2%.

LATVIA: En route main ANSP (LGS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

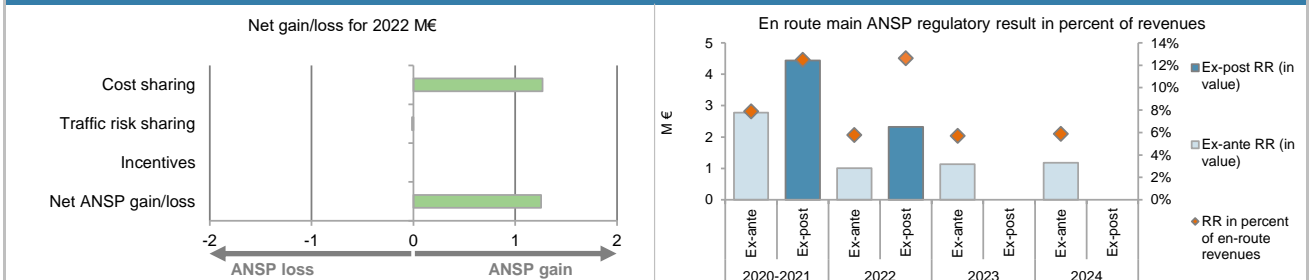
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 508 | 294 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 150 | 904 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -533 | 69 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 1 125 | 1 267 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.6% | -0.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 33 522 | 16 645 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 732 | -14 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 1 856 | 1 253 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LGS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 20 549 | 21 528 | 42 077 | 20 140 | 22 740 | 23 500 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | 5.0% | 5.0% |
| RoE (in value) | 1 356 | 1 421 | 2 777 | 1 006 | 1 136 | 1 176 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 356 | 1 421 | 2 777 | 1 006 | 1 136 | 1 176 |
| Revenue for the en route charging zone | 17 419 | 17 821 | 35 240 | 17 439 | 19 954 | 20 014 |
| Ex-ante regulatory result (+/-) in percent of revenues | 7.8% | 8.0% | 7.9% | 5.8% | 5.7% | 5.9% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | 5.0% | 5.0% |
| LGS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 20 549 | 18 629 | 39 178 | 21 436 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | | |
| RoE (in value) | 1 356 | 1 230 | 2 586 | 1 071 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 1 856 | 1 856 | 1 253 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 356 | 3 086 | 4 442 | 2 323 | | |
| Revenue for the en route charging zone | 17 419 | 18 169 | 35 588 | 18 398 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 7.8% | 17.0% | 12.5% | 12.6% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 16.6% | 11.3% | 10.8% | | |

13. Focus on the main ANSP regulatory result on en route activity



LGS net gain on activity in the Latvia en route charging zone in the year 2022

LGS reported a net gain of +1.3 M€, as a combination of a gain of +1.3 M€ arising from the cost sharing mechanism, with a loss of -0.01 M€ arising from the traffic risk sharing mechanism.

LGS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+1.3 M€) and the actual RoE (+1.1 M€) amounts to +2.3 M€ (12.6% of the en route revenues). The resulting ex-post rate of return on equity is 10.8%, which is higher than the 5.0% planned in the PP.

LATVIA: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Latvia MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 337 | 337 | 674 | 337 | 563 | 569 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Latvia MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -9 | -9 | 14 | | |
| Revenue for the en route charging zone | 337 | 331 | 668 | 351 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -2.8% | -1.4% | 4.0% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Latvia (LVĢMC) corresponds to 4.0% of the en route revenues. It should be noted that LVĢMC does not charge cost of capital. | | | | | | |

LATVIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|--|---------------|---------------|--|---------------|---------------|
| · Latvia TCZ represents 0.5% of the SES terminal ANS actual costs in 2022 | | | | · Airports with fewer than 80,000 IFR mvmts: | 3 | |
| · Number of airports in charging zone in 2022: | 3 | of which: | | · Airports with more than 80,000 IFR mvmts: | 0 | |
| · National currency: | EUR | | | | | |
| · Performance Plan: | See item 1 for the en route charging zone(s). | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Latvia: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 5 968 000 | 6 273 000 | 12 241 000 | 5 976 000 | 6 863 000 | 7 219 000 |
| Inflation % | 0.1% | 2.1% | | 10.0% | 3.9% | 3.1% |
| Inflation index (100 in 2017) | 105.5 | 107.7 | | 119.7 | 124.3 | 128.1 |
| Real terminal costs (€2017) | 5 779 829 | 6 010 333 | 11 790 162 | 5 398 697 | 6 068 548 | 6 244 635 |
| Total terminal service units | 18 167 | 20 975 | 39 142 | 37 000 | 46 000 | 48 000 |
| Real terminal DUC per service unit (€2017) | 318.16 | 286.54 | 301.22 | 145.91 | 131.92 | 130.10 |
| Latvia: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 5 968 000 | 5 980 619 | 11 948 619 | 6 363 470 | | |
| Inflation % | 0.1% | 3.2% | | 17.2% | | |
| Inflation index (100 in 2017) | 105.5 | 108.8 | | 127.5 | | |
| Real terminal costs (€2017) | 5 779 829 | 5 708 115 | 11 487 945 | 5 538 930 | | |
| Total terminal service units | 18 167 | 21 663 | 39 830 | 32 339 | | |
| Real terminal AUC per service unit (€2017) | 318.16 | 263.49 | 288.43 | 171.28 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -292 381 | -292 381 | 387 470 | |
| | in % | - | -4.7% | -2.4% | +6.5% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.1 p.p. | | 7.2 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.1 p.p. | | 7.8 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -302 217 | -302 217 | 140 233 | |
| | in % | - | -5.0% | -2.6% | +2.6% | |
| Total terminal service units | in value | 0 | 688 | 688 | -4 661 | |
| | in % | - | +3.3% | +1.8% | -12.6% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -23.05 | -12.79 | 25.37 | |
| | in % | - | -8.0% | -4.2% | +17.4% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | In 2022, the terminal AUC was +17.4% (or +25.37 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-12.6%) and higher than planned terminal costs in real terms (+2.6%, or +0.1 M€2017). It should be noted that actual inflation index in 2022 was +7.8 p.p. higher than planned. | | | | | |
| Terminal service units | The difference between actual and planned TNSUs (-12.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (LGS) bearing a loss of -0.2 M€2017. | | | | | |
| Terminal costs by entity | Actual real terminal costs are +2.6% (+0.1 M€2017) higher than planned. This is the result of higher costs for the main ANSP, LGS (+2.6%, or +0.1 M€2017) and the NSA (+5.9%, or +0.015 M€2017) and lower costs for the MET service provider (-6.8%, or -0.006 M€2017). | | | | | |
| Terminal costs for the main ANSP (LGS) at charging zone level | Higher than planned terminal costs in real terms for LGS in 2022 (+2.6%, or +0.1 M€2017) result from: | | | | | |
| | - Higher staff costs (+2.9%) due to LGS providing air traffic control for military airports, and in 2022 more staff were allocated to Terminal activities for that purpose; | | | | | |
| | - Higher other operating costs (+2.5%) also due to the transfer of costs between the En Route and Terminal parts in accordance with the ABC costing method; | | | | | |
| | - Slightly higher depreciation (+1.0%) due to commissioning of several large CAPEX projects that were launched prior to the COVID crisis; | | | | | |
| | - Significantly higher cost of capital (+10.6%). As for the en-route part, this can be explained by the fact that a number of investments were commissioned slightly earlier than planned, resulting in higher costs. | | | | | |
| | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>-12.6%</p> <p>Dead-band -2% Dead-band +2%</p> | | | | | |
| | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP +2.6%</p> <p>Other ANSP(s) -6.8%</p> <p>METSP(s) +5.9%</p> <p>NSA +2.6%</p> <p>Total CZ +2.6%</p> | | | | | |
| | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs +2.9%</p> <p>Other operating costs +2.5%</p> <p>Depreciation +1.0%</p> <p>Cost of capital +10.6%</p> <p>Exceptional costs</p> <p>VFR exempted flights</p> <p>Total Main ANSP +2.6%</p> | | | | | |

LATVIA: Terminal charging zone

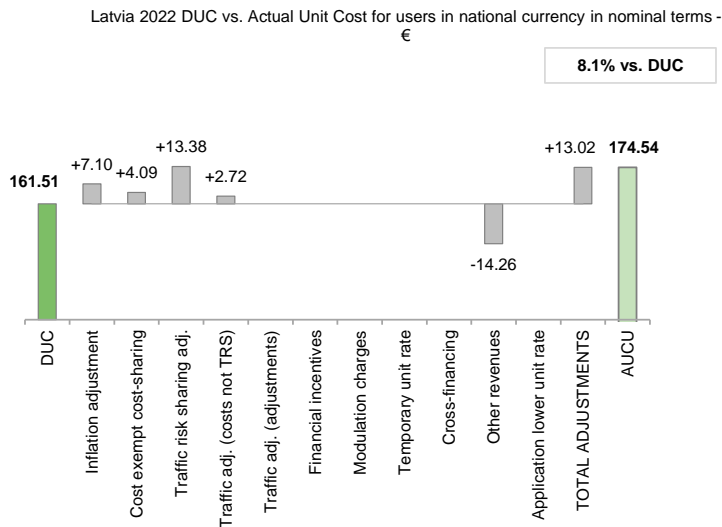
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 158.64 |
| DUC to be charged retroactively | 2.88 |
| DUC | 161.51 |
| Inflation adjustment | 7.10 |
| Cost exempt from cost-sharing | 4.09 |
| Traffic risk sharing adjustment | 13.38 |
| Traffic adj. (costs not TRS) | 2.72 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -14.26 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 13.02 |
| AUCU | 174.54 |
| AUCU vs. DUC | 8.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

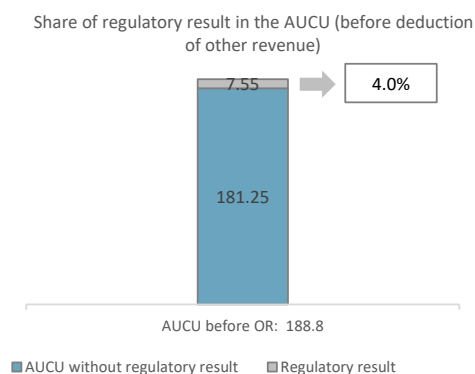
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|------------|-------------|
| by item | New and existing investments | 71 | 2.21 |
| | Competent authorities and qualified entities costs | 15 | 0.46 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 46 | 1.42 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | 132 | 4.09 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|--------------|---------------|
| LGS | 240 | 7.43 |
| METSP(s) | | |
| Latvia-MET | 4 | 0.12 |
| Total charging zone | 244 | 7.55 |
| Actual cost for users*** | 6 105 | 188.80 |
| Regulatory result (% AUCU) | 4.0% | 4.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (174.54 €) is +8.1% higher than the nominal DUC (161.51 €). The difference between these two figures (+13.02 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+7.10 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+4.09 €/SU);
- the addition of the traffic risk sharing adjustments (+13.38 €/SU);
- the addition of the traffic adjustment (+2.72 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-14.26 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 4.0%.

LATVIA: Terminal main ANSP (LGS)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

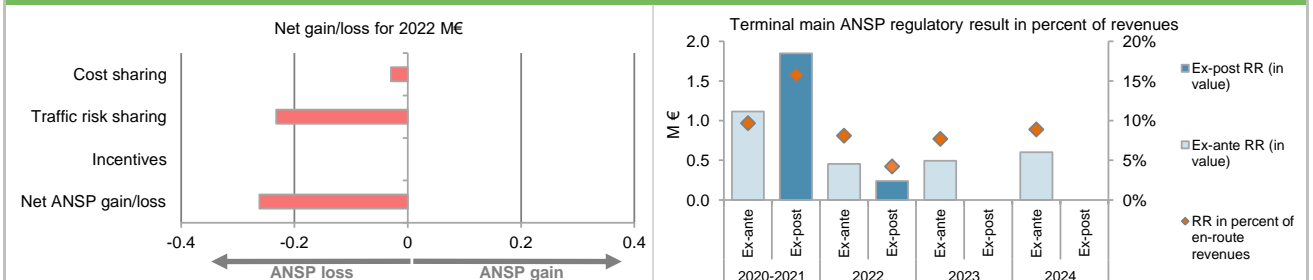
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|------------|-------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 277 | -372 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 38 | 223 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 34 | 120 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 350 | -30 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.8% | -12.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 10 524 | 5 279 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 185 | -232 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 535 | -262 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LGS planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|--------------|--------------|---------------|--------------|--------------|--------------|
| Total asset base | 8 679 | 8 192 | 16 871 | 9 071 | 9 919 | 12 071 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | 5.0% | 5.0% |
| RoE (in value) | 573 | 541 | 1 114 | 454 | 496 | 604 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 573 | 541 | 1 114 | 454 | 496 | 604 |
| Revenue for the terminal charging zone | 5 592 | 5 898 | 11 490 | 5 608 | 6 426 | 6 788 |
| Ex-ante regulatory result (+/-) in percent of revenues | 10.2% | 9.2% | 9.7% | 8.1% | 7.7% | 8.9% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | 5.0% | 5.0% |
| LGS actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 8 679 | 11 221 | 19 900 | 10 037 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 6.6% | 6.6% | 6.6% | 5.0% | | |
| RoE (in value) | 573 | 741 | 1 314 | 502 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 535 | 535 | -262 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 573 | 1 276 | 1 849 | 240 | | |
| Revenue for the terminal charging zone | 5 592 | 6 156 | 11 748 | 5 718 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 10.2% | 20.7% | 15.7% | 4.2% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 11.4% | 9.3% | 2.4% | | |

13. Focus on main ANSP regulatory result on terminal activity



LGS net gain on activity in the Latvia terminal charging zone in the year 2022

LGS reported a net loss of -0.3 M€, as a combination of a loss of -0.03 M€ arising from the cost sharing mechanism, with a loss of -0.2 M€ arising from the traffic risk sharing mechanism.

LGS overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-0.3 M€) and the actual RoE (+0.5 M€) amounts to +0.2 M€ (4.2% of the terminal revenues). The resulting ex-post rate of return on equity is 2.4%, which is lower than the 5.0% planned in the PP.

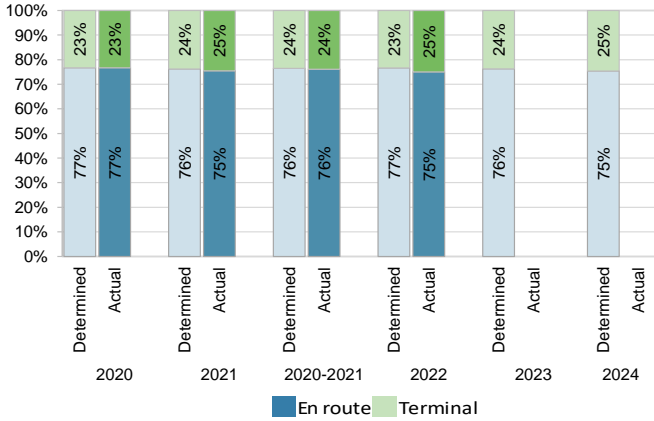
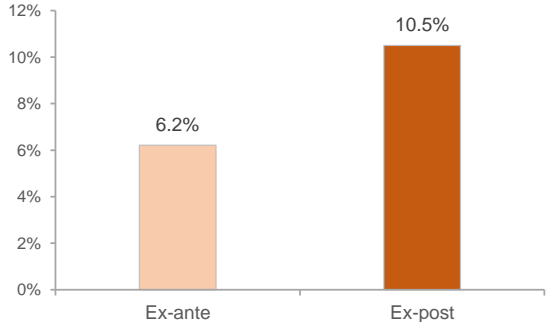
LATVIA: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|------|-------|------------|------|------|------|
| Latvia-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 113 | 113 | 226 | 113 | 190 | 191 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Latvia-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | -2 | -2 | 4 | | |
| Revenue for the terminal charging zone | 113 | 111 | 224 | 117 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -2.0% | -1.0% | 3.4% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Latvia (LVĢMC) corresponds to 3.4% of the terminal revenues. It should be noted that LVĢMC does not charge cost of capital. | | | | | | |

LATVIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|---------------|---------------|--------------|---------------|---------------|-------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Latvia | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Latvia | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Latvia: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 19 046 363 | 19 273 567 | 38 319 930 | 17 724 537 | 19 519 091 | 19 144 924 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 5 779 829 | 6 010 333 | 11 790 162 | 5 398 697 | 6 068 548 | 6 244 635 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 24 826 192 | 25 283 899 | 50 110 092 | 23 123 233 | 25 587 639 | 25 389 559 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 76.7% | 76.2% | 76.5% | 76.7% | 76.3% | 75.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Latvia: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 19 046 363 | 17 572 511 | 36 618 874 | 16 653 659 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 5 779 829 | 5 708 115 | 11 487 945 | 5 538 930 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 24 826 192 | 23 280 627 | 48 106 819 | 22 192 589 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 76.7% | 75.5% | 76.1% | 75.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 0 | -2 003 273 | -2 003 273 | -930 645 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 0.0% | -7.9% | -4.0% | -4.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in p.p. | | 0.0 p.p. | -0.7 p.p. | -0.4 p.p. | -1.6 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <table border="1"> <caption>Data for Figure 2: Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>77%</td> <td>23%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>76%</td> <td>24%</td> </tr> <tr> <td>Actual</td> <td>75%</td> <td>25%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>76%</td> <td>24%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>75%</td> <td>25%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>76%</td> <td>24%</td> </tr> <tr> <td>Actual</td> <td>76%</td> <td>24%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>75%</td> <td>25%</td> </tr> <tr> <td>Actual</td> <td>75%</td> <td>25%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 77% | 23% | Actual | 77% | 23% | 2021 | Determined | 76% | 24% | Actual | 75% | 25% | 2020-2021 | Determined | 76% | 24% | Actual | 76% | 24% | 2022 | Determined | 77% | 23% | Actual | 75% | 25% | 2023 | Determined | 76% | 24% | Actual | 76% | 24% | 2024 | Determined | 75% | 25% | Actual | 75% | 25% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 75% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 75% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 76% | 24% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 75% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 75% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -4.0% (-0.9 M€2017) lower than planned, as en route costs are lower than planned by -1.1 M€2017 and terminal costs are higher than planned by +0.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (75%) is lower than planned in the PP for 2022 (76.7%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Ex-ante | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LGS | 1 460 | 23 047 | 6.3% | 2 564 | 24 116 | 10.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Latvia MET | 0 | 450 | 0.0% | 18 | 468 | 3.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 1 460 | 23 497 | 6.2% | 2 582 | 24 584 | 10.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Latvia covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +2.6 M€ (+2.3 M€ for en route and +0.2 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 10.5% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (6.2% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Latvia gate-to-gate 2022 regulatory result in % of revenues</p>  <table border="1"> <caption>Data for Figure 3: Latvia gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>6.2%</td> </tr> <tr> <td>Ex-post</td> <td>10.5%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 6.2% | Ex-post | 10.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 6.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 10.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Lithuania

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LITHUANIA

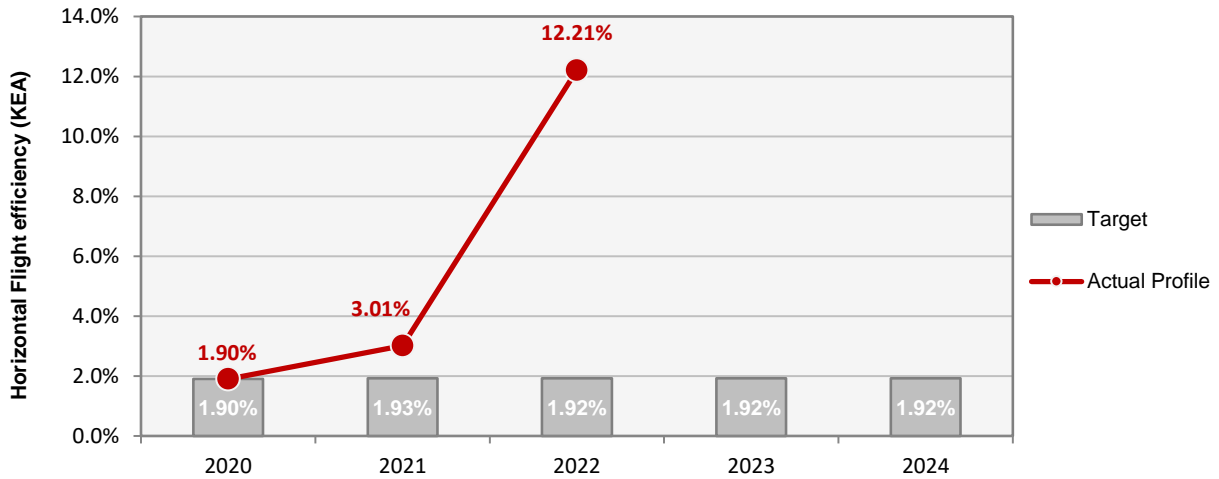
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Oro Navigacija | 100 | D | D | D | D | D |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All five EoSM components of the ANSP meet, or exceed, already the 2024 target level. Maturity has further improved with respect to 2021, achieving maximum level for all components. | | | | | | |

LITHUANIA

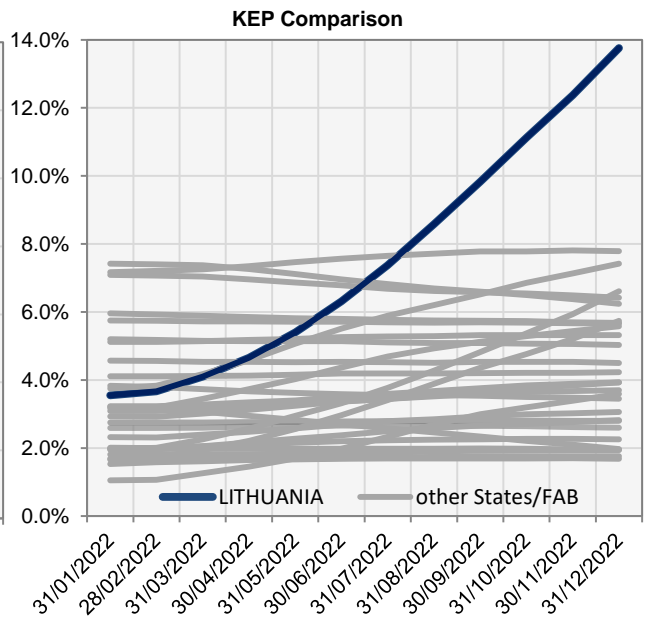
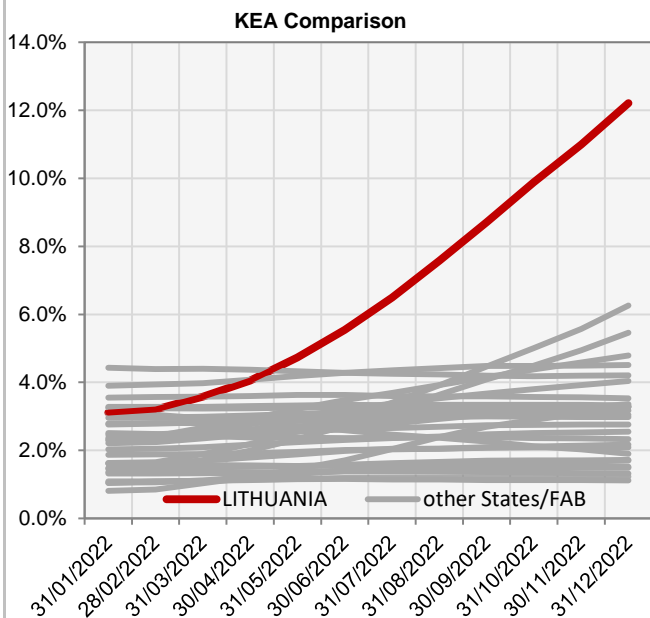
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|--------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.90% | 1.93% | 1.92% | 1.92% | 1.92% |
| Actual performance | 1.90% | 3.01% | 12.21% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| KEA | 3.11% | 3.20% | 3.58% | 4.05% | 4.73% | 5.54% | 6.49% | 7.57% | 8.71% | 9.89% | 10.99% | 12.21% |
| KEP | 3.55% | 3.67% | 4.10% | 4.65% | 5.40% | 6.31% | 7.37% | 8.58% | 9.83% | 11.13% | 12.37% | 13.76% |
| KES | 2.37% | 2.43% | 2.78% | 3.24% | 3.97% | 4.90% | 6.01% | 7.26% | 8.57% | 9.95% | 11.26% | 12.79% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

LITHUANIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Due to increased MIL activity in the region impact on environmental KPA is significant (to negative side). Airspace design is not sufficient to support current and future MIL activity, more new TSA type areas are requested for MIL operations. FUA principles are applied for day-to-day airspace management, procedures are implemented based on LoA with ASM tool LARA in use between CIV-MIL.

Capacity, though without impact to the target 2022 achievement, is severely affected to negative side due to increased MIL activity in the region. Increased bookings/usage of all types of MIL areas for day-to-day operations/training/exercises. GAT MIL activity as well increased (intel flights in the region).

Military - related measures implemented or planned to improve capacity

None known today due to importance, as well priority for the State, as well sensitivity of MIL operations in the region as the whole.

New Modular TSAs will be created, with focus on more flexible ways of area activation (tactical activation for MIL not affecting CIVIL, based on LoA).

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lithuania | 96% | 100% | 99% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vilnius | 96% | 100% | 99% | | |

Initiatives implemented or planned to improve PI#6

ON is implementing the latest version of LARA (v 4.0) to improve related performance. NSA will compare the trend of effectiveness after implementation of this measure and most probably with the efficiency of the neighbouring countries. NSA might be contacting the PRB depending on its competences.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lithuania | 91% | 89% | 90% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vilnius | 91% | 89% | 90% | | |

Initiatives implemented or planned to improve PI#7

ON is implementing the latest version of LARA (v 4.0) to improve related performance. NSA will compare the trend of effectiveness after implementation of this measure and most probably with the efficiency of the neighbouring countries. NSA might be contacting the PRB depending on its competences.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lithuania | 65% | 66% | 55% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Vilnius | 65% | 66% | 55% | | |

Initiatives implemented or planned to improve PI#8

ON is implementing the latest version of LARA (v 4.0) to improve related performance. NSA will compare the trend of effectiveness after implementation of this measure and most probably with the efficiency of the neighbouring countries. NSA might be contacting the PRB depending on its competences.

LITHUANIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|--|------|------|------|------|------|--------------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | 0.05 | 0.01 | 0.02 | 0.02 | 0.02 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>The target was reached with overperformance - 0 min delay per flight instead of targeted 0,2 min delay. It is worth noting that the KPA target was revised to the lesser delay at the revision of RP3 PP: driven by significantly dropped en route flights and SUs numbers after the invasion to Ukraine.</p> <p>The explanation for this is that IFR movements were just +34% above of "famous" 2020 when air traffic with exemptions was suspended because of pandemic and just +5% comparing with 2021, another COVID year.</p> <p>The NSA would be more happy to see more intensive en route traffic.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| On a monthly basis analysing data from the dashboard managed by EUROCONTROL Aviation Intelligence. | | | | | | | |
| Capacity Planning | | | | | | | |
| Ordinary due to low traffic flows influenced by war and followed EU sanctions. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Vilnius ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 36 | 35 | 35 | 36 | |
| Actual | 35 | 36 | 34 | 35 | | | |
| ATCO's numbers as were planned. | | | | | | | |
| Additional information relating to Russia's war of aggression against Ukraine | | | | | | | |
| <p>The traffic flow west-south (so called Kaliningrad transit) shifted to the transit north-south above the Baltic Sea after the operational restrictions were implemented in Vilnius FIR for aircraft registered in the Russian Federation (RF).</p> <p>[There was a] Negative impact from the point of view of lost traffic flows, but positive from the point of view on performance at the EU level.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Lithuania experienced an increase in traffic from 178k flights in 2021, with zero ATFM delay, to 183k flights in 2022, also with zero en route ATFM delays. Traffic levels were still substantially below the 302k flights in 2019.</p> <p>As explained by the NSA, traffic levels in 2022 have reduced significantly due to war and international sanctions.</p> | | | | | | | |

LITHUANIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Lithuania ECZ represents 0.3% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 revised (final) performance plan submitted 26 August 2022 and found consistent as per Commission Decision (EU) 2022/2494 of 9 December 2022. The final version of the plan was adopted and published by Lithuania in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Lithuania: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 19 503 591 | 20 910 657 | 40 414 248 | 21 945 063 | 24 906 259 | 26 082 576 |
| Inflation % | 1.1% | 3.2% | | 17.9% | 8.5% | 3.0% |
| Inflation index (100 in 2017) | 105.9 | 109.3 | | 130.6 | 141.7 | 146.0 |
| Real en route costs (€2017) | 18 661 791 | 19 622 361 | 38 284 152 | 18 189 473 | 19 502 072 | 19 990 031 |
| Total en route service units | 332 616 | 425 318 | 757 934 | 372 234 | 415 785 | 434 912 |
| Real en route DUC per service unit (€2017) | 56.11 | 46.14 | 50.51 | 48.87 | 46.90 | 45.96 |

| Lithuania: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 19 503 591 | 21 440 731 | 40 944 322 | 21 721 232 | | |
| Inflation % | 1.1% | 4.6% | | 18.9% | | |
| Inflation index (100 in 2017) | 105.9 | 110.8 | | 131.7 | | |
| Real en route costs (€2017) | 18 661 791 | 19 932 490 | 38 594 281 | 17 861 272 | | |
| Total en route service units | 332 616 | 443 151 | 775 768 | 375 999 | | |
| Real en route AUC per service unit (€2017) | 56.11 | 44.98 | 49.75 | 47.50 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------|--------------|--------------|--------------|------|------|
| En route costs (nominal €) | | | | | | |
| in value | 0 | 530 074 | 530 074 | -223 831 | | |
| in % | - | +2.5% | +1.3% | -1.0% | | |
| Inflation % | | | | | | |
| in p.p. | 0.0 p.p. | 1.4 p.p. | | 1.0 p.p. | | |
| Inflation index (100 in 2017) | | | | | | |
| in p.p. | 0.0 p.p. | 1.5 p.p. | | 1.1 p.p. | | |
| Real en route costs (€2017) | | | | | | |
| in value | 0 | 310 128 | 310 128 | -328 201 | | |
| in % | - | +1.6% | +0.8% | -1.8% | | |
| Total en route service units | | | | | | |
| in value | 0 | 17 833 | 17 833 | 3 765 | | |
| in % | - | +4.2% | +2.4% | +1.0% | | |
| Real en route unit cost per service unit (€2017) | | | | | | |
| in value | 0.00 | -1.16 | -0.76 | -1.36 | | |
| in % | - | -2.5% | -1.5% | -2.8% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -2.8% (or -1.36 €2017) lower than the planned DUC. This results from the combination of lower than planned en route costs in real terms (-1.8%, or -0.3 M€2017) and higher than planned TSUs (+1.0%).

En route service units

The difference between actual and planned TSUs (+1.0%) falls inside the $\pm 2\%$ dead band. Hence gain of additional en route revenues is kept by the ANSPs (see items 10 to 14).

En route costs by entity

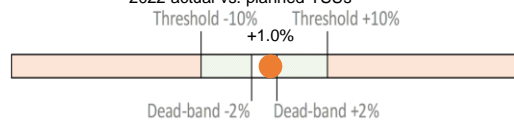
Actual real en route costs are -1.8% (-0.3 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Oro Navigacija (-1.9%, or -0.3 M€2017), the other ANSP (LGS, -11.1%, or -0.03 M€2017) and the MET service provider (-1.8%, or -0.01 M€2017). The NSA/EUROCONTROL costs were slightly higher than planned (+0.6%, or +0.01 M€2017).

En route costs for the main ANSP (Oro Navigacija) at charging zone level

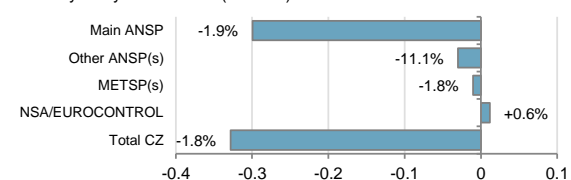
Lower than planned en route costs in real terms for Oro Navigacija in 2022 (-1.9%, or -0.3 M€2017) result from:

- Slightly lower staff costs (-0.1%) mainly due to the inflation index impact (+1.1 p.p.) since in nominal terms staff costs were slightly higher than planned (+0.7%);
- Lower other operating costs (-2.9%) mainly due to the decline in energy prices in the 4th quarter and the delay in signing the ATM system supply contracts; and,
- Lower depreciation (-6.9%) and cost of capital (-1.5%) resulting mainly from delays in investments or acquisitions at lower prices.

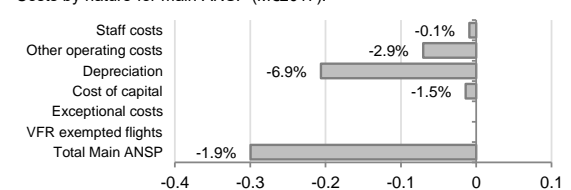
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



LITHUANIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

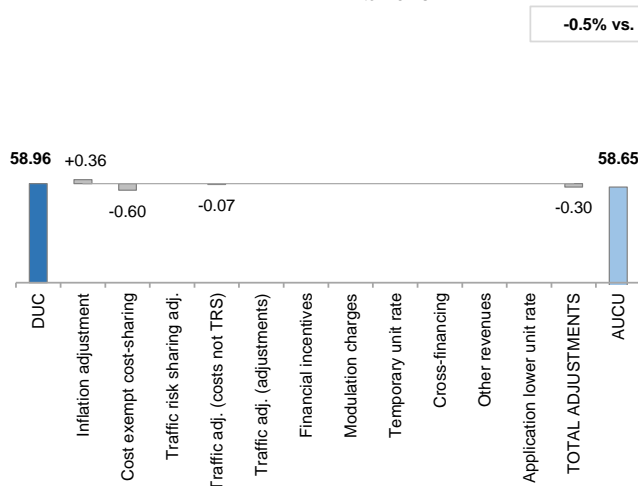
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Lithuania 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - €



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 48.41 |
| DUC to be charged retroactively | 10.55 |
| DUC | 58.96 |
| Inflation adjustment | 0.36 |
| Cost exempt from cost-sharing | -0.60 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | -0.07 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -0.30 |
| AUCU | 58.65 |
| AUCU vs. DUC | -0.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

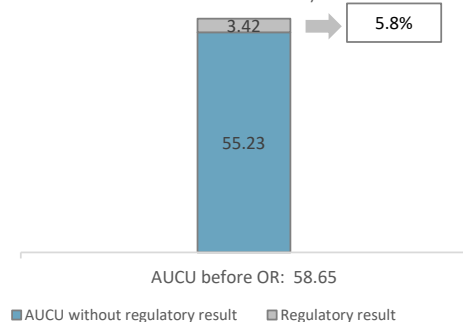
7. En route costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|-------------|--------------|
| New and existing investments | -231 | -0.62 |
| Competent authorities and qualified entities costs | -6 | -0.02 |
| Eurocontrol costs | 18 | 0.05 |
| Pension costs | -4 | -0.01 |
| Interest on loans | 0 | 0.00 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | -224 | -0.60 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| Oro Navigacija | 1 217 | 3.24 |
| LGS - NINTA ADAXA | 64 | 0.17 |
| METSP(s) | € '000 | €/SU |
| Lithuania MET | 6 | 0.01 |
| Total charging zone | 1 287 | 3.42 |
| Actual cost for users*** | 22 053 | 58.65 |
| Regulatory result (% AUCU) | 5.8% | 5.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (58.65 €) is -0.5% lower than the nominal DUC (58.96 €). The difference between these two figures (-0.30 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+0.36 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.60 €/SU); and,
- the deduction of the traffic adjustment (-0.07 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 5.8%.

LITHUANIA: En route main ANSP (Oro Navigacija)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

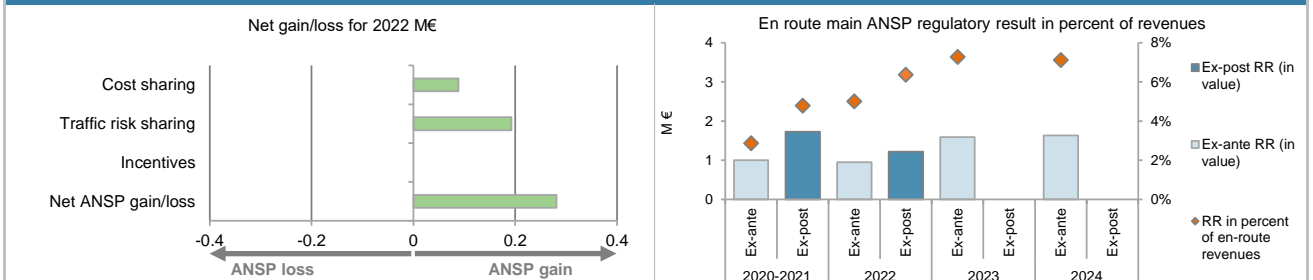
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|------------|------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -407 | 197 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 194 | 128 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 127 | -236 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -86 | 89 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 2.4% | 1.0% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 35 070 | 19 033 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 739 | 193 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 653 | 281 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Oro Navigacija planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 39 185 | 33 474 | 72 660 | 31 676 | 31 819 | 32 647 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 0.0% | 3.0% | 1.4% | 3.0% | 5.0% | 5.0% |
| RoE (in value) | 0 | 1 004 | 1 004 | 950 | 1 591 | 1 632 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 1 004 | 1 004 | 950 | 1 591 | 1 632 |
| Revenue for the en route charging zone | 16 832 | 18 238 | 35 070 | 19 033 | 21 878 | 22 962 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 5.5% | 2.9% | 5.0% | 7.3% | 7.1% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 3.0% | 1.4% | 3.0% | 5.0% | 5.0% |
| Oro Navigacija actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 39 185 | 35 789 | 74 975 | 31 204 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 0.0% | 3.0% | 1.4% | 3.0% | | |
| RoE (in value) | 0 | 1 074 | 1 074 | 936 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 653 | 653 | 281 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 1 727 | 1 727 | 1 217 | | |
| Revenue for the en route charging zone | 16 832 | 19 297 | 36 129 | 19 117 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 8.9% | 4.8% | 6.4% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 4.8% | 2.3% | 3.9% | | |

13. Focus on the main ANSP regulatory result on en route activity



Oro Navigacija net gain on activity in the Lithuania en route charging zone in the year 2022

Oro Navigacija reported a net gain of +0.3 M€, as a combination of a gain of +0.1 M€ arising from the cost sharing mechanism and a gain of +0.2 M€ arising from the traffic risk sharing mechanism.

Oro Navigacija overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+0.3 M€) and the actual RoE (+0.9 M€) amounts to +1.2 M€ (6.4% of the en route revenues). The resulting ex-post rate of return on equity is 3.9%, which is slightly higher than the 3.0% planned in the PP.

LITHUANIA: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|-------|--------|------------|-------|-------|-------|
| LGS (NINTA ADAXA) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 22 | 29 | 51 | 19 | 22 | 25 |
| Revenue for the en route charging zone | 323 | 335 | 658 | 336 | 388 | 419 |
| Ex-ante regulatory result (+/-) in percent of revenues | 6.8% | 8.7% | 7.7% | 5.7% | 5.6% | 6.1% |
| Ex-ante RoE pre-tax rate (in %) | 5.2% | 6.6% | 5.9% | 5.0% | 5.0% | 5.0% |
| LGS (NINTA ADAXA) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 22 | 78 | 100 | 64 | | |
| Revenue for the en route charging zone | 323 | 353 | 676 | 342 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 6.8% | 22.0% | 14.7% | 18.7% | | |
| Ex-post RoE pre-tax rate (in %) | 5.2% | 20.4% | 12.4% | 16.3% | | |
| Lithuania MET planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 600 | 621 | 1 221 | 724 | 753 | 789 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Lithuania MET actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -102 | -102 | 6 | | |
| Revenue for the en route charging zone | 600 | 629 | 1 229 | 730 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -16.3% | -8.3% | 0.8% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 22 | 29 | 51 | 19 | 22 | 25 |
| Revenue for the en route charging zone | 923 | 956 | 1 879 | 1 060 | 1 141 | 1 208 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.4% | 3.0% | 2.7% | 1.8% | 1.9% | 2.1% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 22 | -25 | -3 | 70 | | |
| Revenue for the en route charging zone | 923 | 981 | 1 904 | 1 071 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.4% | -2.5% | -0.1% | 6.5% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Lithuania (LGS-NINTA ADAXA and Lithuania MET) corresponds to 6.5% of the en route revenues. It should be noted that Lithuania MET does not charge cost of capital. | | | | | | |

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Annual Monitoring Report 2022

Local level view

Luxembourg

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LUXEMBOURG

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| ANA LUX | 71 | B | B | C | B | B |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| All EoSM components remain below the RP3 target level. Compared with 2021, in 2022 a decrease of levels of maturity have been observed for five questions. Improvements in safety management in all components are to be seen during RP3 to achieve RP3 targets. | | | | | | |

MUAC

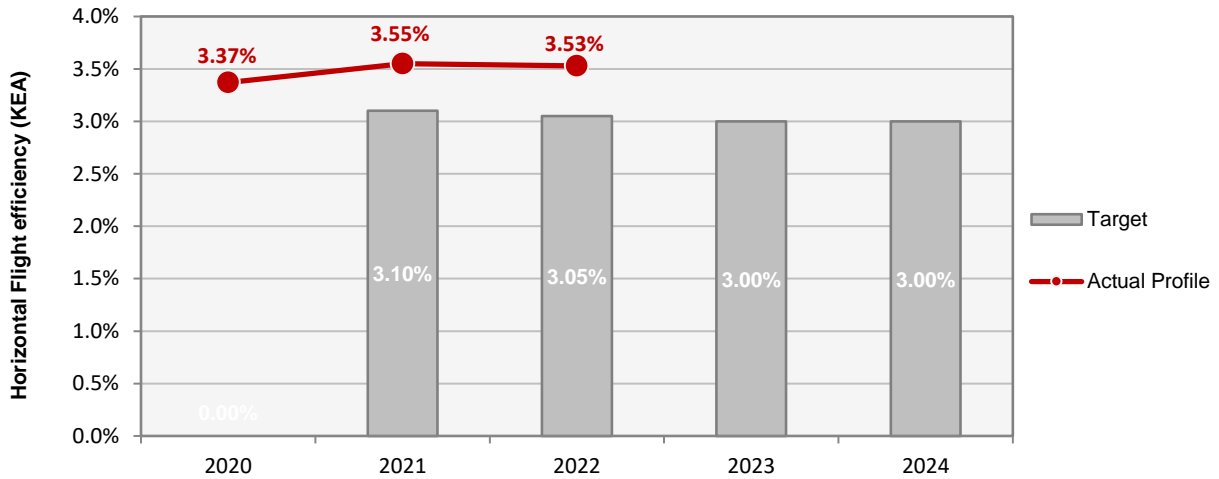
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| MUAC | 95 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> <p>MUAC oversight is exercised in a coordinated manner by the Four States' NSAs (Belgium, Germany, Luxembourg and the Netherlands) over which territories and airspace MUAC provides air traffic services. Safety performance of MUAC is reported separately of these four States as it has been assessed and agreed by the four NSAs.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet the RP3 target levels. Further improvements on three questions were observed during 2022 compared with 2021.</p> <p>IMPORTANT: EASA/European Commission did not receive the verified questionnaire from the NSA on time. This is an important step to receive confirmation that the self-evaluated questionnaire by the ANSP has been actually verified. It should be sent in due time to allow proper and timely drafting of the Monitoring Report.</p> | | | | | | |

BELGIUM-LUXEMBOURG

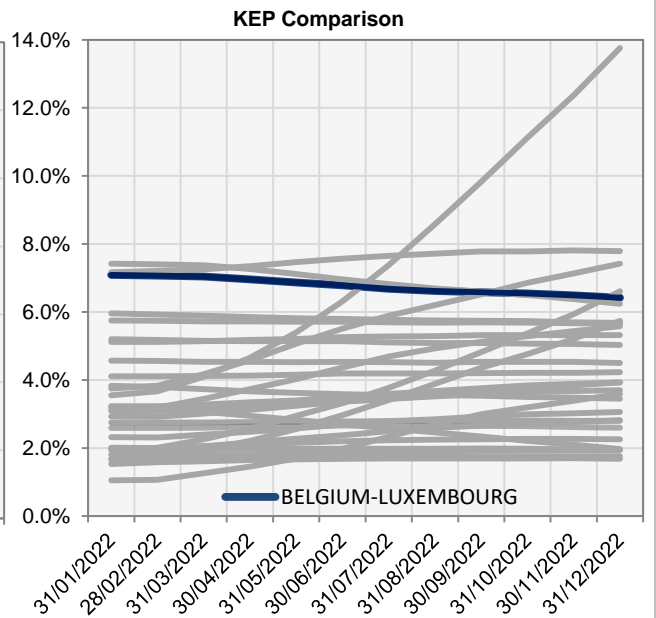
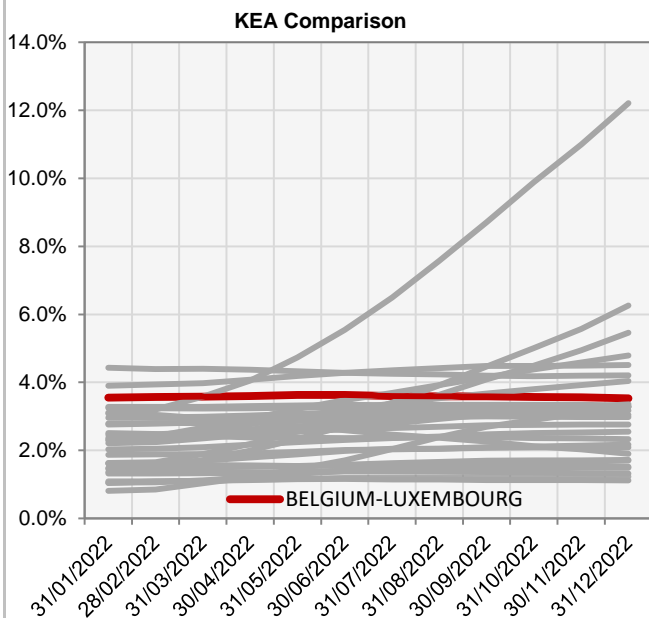
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | n/a | 3.10% | 3.05% | 3.00% | 3.00% |
| Actual performance | 3.37% | 3.55% | 3.53% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 3.55% | 3.57% | 3.58% | 3.60% | 3.63% | 3.63% | 3.60% | 3.59% | 3.59% | 3.57% | 3.56% | 3.53% |
| KEP | 7.09% | 7.07% | 7.04% | 6.96% | 6.87% | 6.78% | 6.68% | 6.62% | 6.58% | 6.54% | 6.49% | 6.42% |
| KES | 6.91% | 6.89% | 6.86% | 6.78% | 6.68% | 6.56% | 6.44% | 6.36% | 6.31% | 6.26% | 6.20% | 6.13% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

LUXEMBOURG

ENVIRONMENT - Airports

1. Overview

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic in 2022 was still 9% lower than in 2019 regardless the increase of 46% with respect to 2021.

In accordance with IR (EU) 2019/317 and the traffic volume, additional taxi-out and ASMA times are not monitored at Luxembourg and the environmental performance focuses only on the share of arrivals applying CDO.

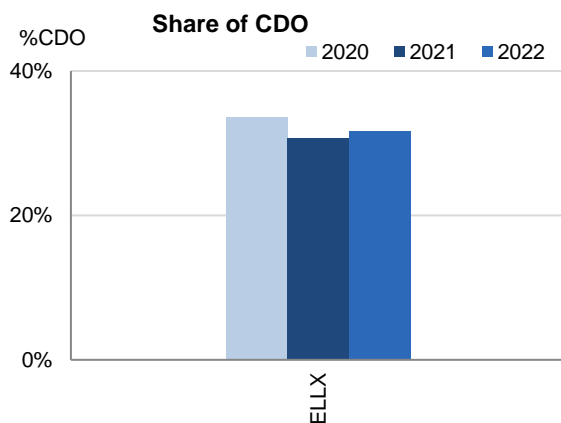
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

4. Share of arrivals applying CDO



The share of CDO flights for Luxembourg is 31.6% which is an increase of 0.9 percentage points and above the overall RP3 value in 2022 (29.0%).

The monthly values stayed relatively stable during 2022.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-----------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Luxembourg-ELLX | - | - | - | | | - | - | - | | | 34% | 31% | 32% | | |

LUXEMBOURG

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:

At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.

At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Luxembourg | | | n/a | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Luxembourg | | | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Luxembourg | | | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#8

BELGIUM-LUXEMBOURG

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | |
|--|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| National Target | n/a | n/a | 0.17 | 0.17 | 0.17 | |
| Actual performance | n/a | n/a | 0.13 | | | |
| NSA's assessment of capacity performance | | | | | | |
| Both en route and Terminal capacity targets were achieved. | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>For skyes, capacity monitoring is executed via the process as described in the manual of the NSA. Relevant data are collected from skyes, FABEC and other entities (Eurocontrol dashboard). If occurring delays a justification can be requested from skyes, with potential corrective action request afterwards.</p> <p>MUAC reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the AFG/PMG (ANSP FABEC Group / Performance Management Group) capacity report. This report is based on MUAC data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values.</p> <p>Even though the FABEC states now have national performance plans, the monitoring for en-route capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate.</p> <p>On a monthly basis and through the AFG/PMG (ANSP FABEC Group / Performance Management Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the FABEC target set and reference or indicative values and on the results and analysis of the en- route capacity achievement.</p> <p>In case the target set and/or the annual/reference values are threatened not to be met, AFG/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at FAB, national and/or ACC level, in order to remedy the situation.</p> <p>The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the AFG/PMG, to the FABEC Council for such appropriate measures, after consultation with the AFG/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values.</p> <p>This monitoring process is described in the FABEC FPC States Performance Process description, which is regularly updated.</p> | | | | | | |
| Capacity Planning | | | | | | |
| <p>Initial Network Operation Plan 2020 launched in Winter 2019/2020 has been overwhelmed by the COVID-19 pandemic and the massive drop of traffic.</p> <p>A new NOP Recovery Plan process initiated and launched by the Network Manager and its first edition was published on 30 April 2020, as European traffic began a slow recovery from its lowest point of just 2,099 flights across the network on 12 April 2020.</p> <p>Since then a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.</p> | | | | | | |

| ATCO in OPS (FTE) | | | | | | | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Brussels ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 87 | 86 | 87 | 92 | |
| Actual | n/a | 84 | 82 | 82 | | | |
| Maastricht ACC | | | | | | | Observations |
| 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| Planned (Perf Plan) | - | - | 290 | 309 | 315 | 317 | |
| Actual | n/a | 286 | 288 | 293 | | | |

Comments regarding ATCO in OPS

MUAC: more ATCOs than anticipated have stopped working in OPS.

Regarding ATCO planning, the Belgian NSAs and ANSPs, together with their FABEC-colleagues, question if ATCO planning figures are legally required by the performance regulation to be included in the Performance Monitoring for RP3, as it is not a prescribed indicator. In addition, we question if this is the right level of detail to be monitored by the EC. Technically the plans are and will always be subject to change, creating the unnecessary burden of tracking, supervising and explaining the figures within the SES performance scheme domain.

However, ATCO hiring and assignment is one of the major driver for current capacity and staffing issues solving. ACE figures are provided and can be referred to. Nevertheless, we consider that they cannot be considered as a commitment where planning figures are requested, due to the high level of uncertainties related to such ATCO recruitment plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3.

There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all, the Labour Law and the Collective Labour Agreement in place in an ANSP play a major role in the availability of ATCOs to fulfill the ops needs. Then, there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, leading to high rate of unforeseen leaves.

Another factor which cannot be significantly mitigated further impacting the availability of ATCOs is the number of suitable applicants, the failure rate of the theoretical training at the academies and the success rate during the on-the-job training phases of trainees.

The final retirement age is firmly set by law, but in many countries employees may go earlier. ANSPs can only assume a certain amount of people opting out/in. It is common culture now that companies offer varying working hours to enable employees to adjust their work to different phases of their life. Again, ANSPs can only assume a certain amount of people opting in/out. On top of all that, future social agreements will significantly determine the ATCO availability per person and by that the total available FTE per ANSP.

Before the planned ATCO FTE can be reported in an harmonised and consistent way, a revised specification for information disclosure is required, clearly describing how to count ATCOs partially working in projects (another uncertainty factor) and (very important) standardising the assumptions for the uncertainties mentioned above.

Application of Corrective Measures for Capacity (if applicable)

skeyes: Brussels ACC has a capacity gap in 2023 and 2024.

In the LSSIP 2022, skeyes developed various initiatives to fill the gap :

- recruitment of new ATCO at the maximum training capacity
- TCAST in 2023
- segregation of traffic flows between EBBR (Brussels) and EBCI (Charleroi)
- upgrade of ATM system

The NSA considers that the actions taken will be sufficient to remedy the situation.

Summary of capacity performance

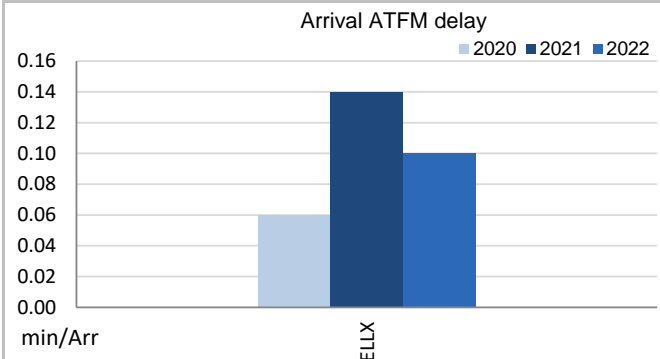
Belgium & Luxembourg achieved the required en route capacity performance in 2022. There were 1 038k flights handled in the airspace of Belgium and Luxembourg (both Brussels ACC and the Brussels sectors in MUAC). There were 131k minutes of en route ATFM delay attributed to ANSPs in Belgium and Luxembourg airspace.

1. Overview

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic in 2022 was still 9% lower than in 2019 regardless the increase of 46% with respect to 2021. In accordance with IR (EU) 2019/317 and the traffic volume, pre-departure delays are not monitored at Luxembourg and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.

Average arrival ATFM delays in 2022 was 0.10 min/arr, compared to 0.14 min/arr in 2021. ATFM slot adherence has improved (2022: 94.1%; 2021: 93.4%).

2. Arrival ATFM Delay



Arrival ATFM delays at Luxembourg have decreased in 2022. 67% of all delays were attributed to equipment issues and distributed along the year. 32% of the delays were due to Weather, mostly in November and January.

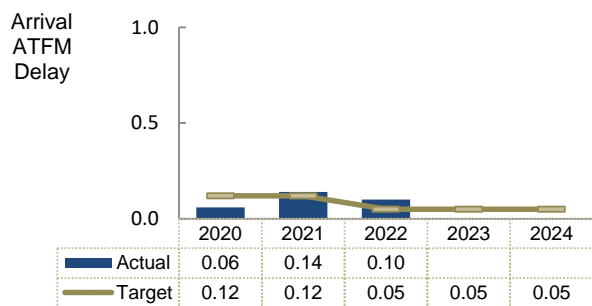
According to Luxembourg's monitoring report: *The terminal ATFM arrival delay is mainly due to 2 factors: restrictions based on adverse weather (MET) conditions (low visibility procedures - LVP) and restrictions due to technical (TECH) problems . Whereas the MET conditions do not contribute, in a significant extend, to the fluctuations of the delay values (and the ANSP has no influence on this), the RADAR performance of Luxembourg surveillance (SURCHAIN)requires extended separation standard of 8NM as soon as one of the 4 sensors of ELLX RADAR network is unavailable.*

This 8NM separation request has a direct influence on the delays, as the IFR arrivals are mandatorily reduced to 12 arrivals/h. (instead of max 20 arrivals/h).

Recommendations to the ANSP to rectify the situation:

- Implementation of the recommendation made by EUROCONTROL in its SUR study of the actual SUR infrastructure.

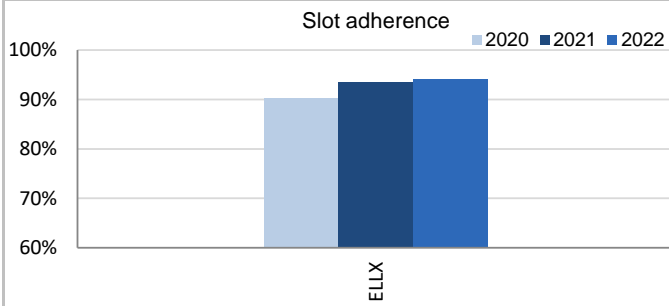
3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

According to Luxembourg's monitoring report: *The underperformance of the SURCHAIN and its operational impact is known to the NSA, which is actively monitoring the situation through its national oversight activities. A set of recommendation to improve the overall SUR infrastructure has been made through an independent study made by EUROCONTROL. These recommendations have been integrated into the ANSP Project Management. Implementation is foreseen at the latest by 2025.*

4. ATFM Slot Adherence



Luxembourg's ATFM slot compliance was 94.1%, a slight improvement with respect to 2021 (93.4%). With regard to the 5.9% of flights that did not adhere, 1.8% was early and 4.1% was late.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Luxembourg.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Luxembourg.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-----------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Luxembourg-ELLX | 0.06 | 0.14 | 0.1 | | | 90.2% | 93.4% | 94.1% | | | - | - | - | | | - | - | - | | |

BELGIUM-LUXEMBOURG: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Belgium-Luxembourg ECZ represents 3.5% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: Belgium-Luxembourg has submitted a revised draft performance plan in July 2022, currently under detailed examination procedure

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Belgium-Luxembourg: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-----------------|---------------|---------------|---------------|--------------|--------------|
| En route costs (nominal €) | 214 796 327 | 227 401 527 | 442 197 853 | 250 216 368 | 269 472 006 | 271 693 533 |
| Inflation % | 0.4% | 1.7% | | 7.8% | 3.4% | 1.9% |
| Inflation index (100 in 2017) | 103.9 | 105.7 | | 115.6 | 119.6 | 121.8 |
| Real en route costs (€2017) | 207 900 840 | 216 999 041 | 424 899 880 | 220 164 809 | 230 239 134 | 228 481 759 |
| Total en route service units | 1 080 873 | 1 161 104 | 2 241 977 | 2 107 529 | 2 444 554 | 2 542 413 |
| Real en route DUC per service unit (€2017) | 192.35 | 186.89 | 189.52 | 104.47 | 94.18 | 89.87 |
| Belgium-Luxembourg: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | 214 796 327 | 216 987 149 | 431 783 476 | 240 279 741 | | |
| Inflation % | 0.4% | 3.2% | | 10.3% | | |
| Inflation index (100 in 2017) | 103.9 | 107.3 | | 118.3 | | |
| Real en route costs (€2017) | 207 900 840 | 204 483 829 | 412 384 668 | 207 326 224 | | |
| Total en route service units | 1 080 873 | 1 166 899 | 2 247 771 | 2 096 176 | | |
| Real en route AUC per service unit (€2017) | 192.35 | 175.24 | 183.46 | 98.91 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | in value | 0 | -10 414 378 | -10 414 378 | -9 936 627 | |
| | in % | - | -4.6% | -2.4% | -4.0% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.5 p.p. | | 2.5 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.6 p.p. | | 2.7 p.p. | |
| Real en route costs (€2017) | in value | 0 | -12 515 212 | -12 838 585 | | |
| | in % | - | -5.8% | -2.9% | -5.8% | |
| Total en route service units | in value | 0 | 5 795 | 5 795 | -11 353 | |
| | in % | - | +0.5% | +0.3% | -0.5% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -11.65 | -6.06 | -5.56 | |
| | in % | - | -6.2% | -3.2% | -5.3% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -5.3% (or -5.56 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-5.8%, or -12.8 M€2017) and slightly lower than planned TSUs (-0.5%). It should be noted that actual inflation index in 2022 was +2.7 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-0.5%) falls inside the $\pm 2\%$ dead band. Hence loss of en route revenues is borne by the ANSPs (see items 10 to 14).

En route costs by entity

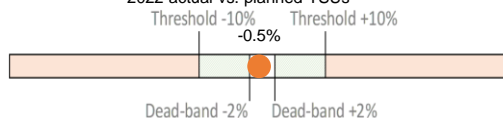
Actual real en route costs are -5.8% (-12.8 M€2017) lower than planned. This is the result of lower costs for the other ANSPs (ANA and MUAC, -12.5%, or -10.0 M€2017) and the main ANSP, skeyes (-2.4%, or -3.0 M€2017), while the NSA/EUROCONTROL costs are higher (+1.1%, or +0.2 M€2017) than planned.

En route costs for the main ANSP (skeyes) at charging zone level

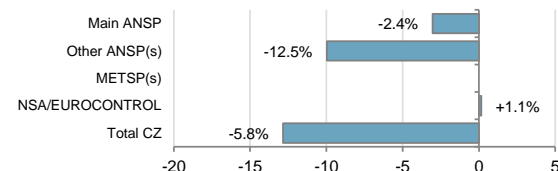
Lower than planned en route costs in real terms for skeyes in 2022 (-2.4%, or -3.0 M€2017) result from:

- Slightly higher staff costs (+0.4%) in real terms, but in nominal terms the staff costs are higher than planned (+2.7%) mainly due to the Belgium automatic mandatory salary indexation of salaries based on the actual inflation (10.3%) which was higher than the planned (7.8%);
- Significantly lower other operating costs (-13.7%), due to delay of certain projects, which has negatively impacted the involvement of external support and license costs.
- Slightly higher depreciation (+0.4%),
- Significantly lower cost of capital (-21.6%), mainly due to a lower fixed asset base.

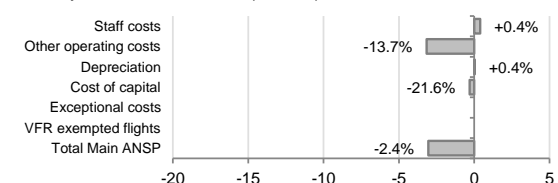
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



BELGIUM-LUXEMBOURG: En route charging zone

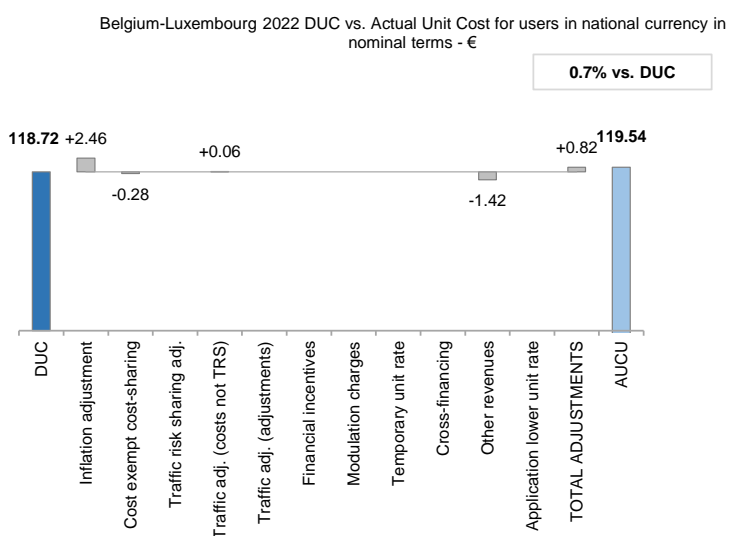
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 120.95 |
| DUC to be charged retroactively | -2.22 |
| DUC | 118.72 |
| Inflation adjustment | 2.46 |
| Cost exempt from cost-sharing | -0.28 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.06 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -1.42 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 0.82 |
| AUCU | 119.54 |
| AUCU vs. DUC | +0.7% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

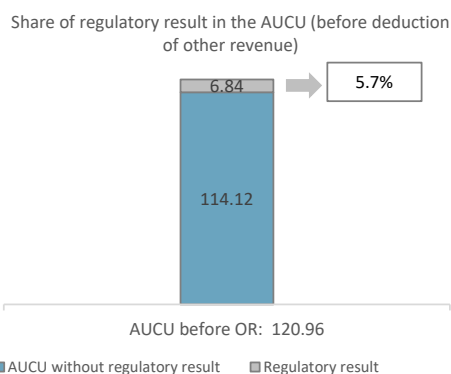
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | -730 | -0.35 |
| | Competent authorities and qualified entities costs | -27 | -0.01 |
| | Eurocontrol costs | 191 | 0.09 |
| | Pension costs | -30 | -0.01 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -596 | -0.28 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs). □

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| skeyes (Belgium-Lux) | 3 591 | 1.71 |
| ANA LUX | -285 | -0.14 |
| MUAC (Belgium) | 10 705 | 5.11 |
| MUAC (Luxembourg) | 331 | 0.16 |
| METSP(s) | € '000 | €/SU |
| Total charging zone | 14 342 | 6.84 |
| Actual cost for users*** | 253 549 | 120.96 |
| Regulatory result (% AUCU) | 5.7% | 5.7% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (119.54 €) is +0.7% higher than the nominal DUC (118.72 €). The difference between these two figures (+0.82 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+2.46 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.28 €/SU);
- the addition of the traffic adjustment (+0.06 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-1.42 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 5.7%.

BELGIUM-LUXEMBOURG: En route main ANSP (skeyes)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

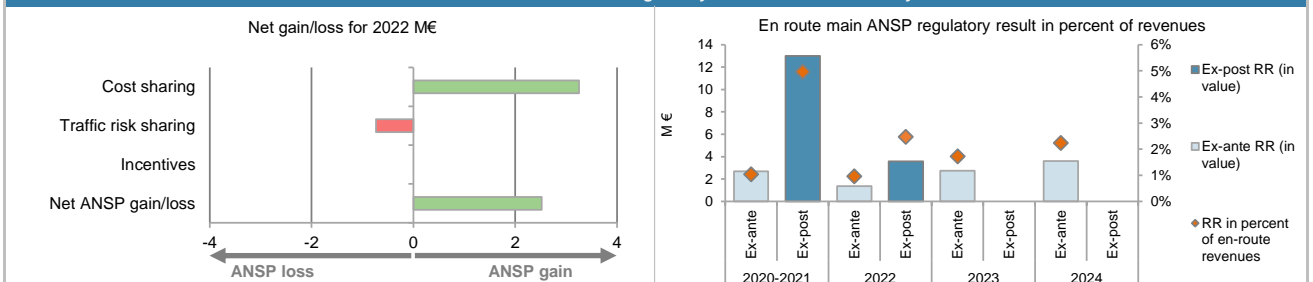
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 8 267 | 445 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 828 | 3 100 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -338 | -292 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 9 757 | 3 254 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.3% | -0.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 246 514 | 136 433 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 637 | -735 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 10 395 | 2 519 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| skeyes (Belgium-Lux) planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 77 960 | 70 127 | 148 088 | 80 148 | 96 528 | 113 624 |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | 74% | 83% |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| RoE (in value) | 1 532 | 1 157 | 2 689 | 1 368 | 2 729 | 3 597 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 532 | 1 157 | 2 689 | 1 368 | 2 729 | 3 597 |
| Revenue for the en route charging zone | 125 844 | 134 183 | 260 028 | 143 554 | 158 956 | 160 967 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.2% | 0.9% | 1.0% | 1.0% | 1.7% | 2.2% |
| Ex-ante RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | 3.8% | 3.8% |
| skeyes (Belgium-Lux) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 77 960 | 65 584 | 143 544 | 62 860 | | |
| Proportion of financing through equity (in %) | 89% | 72% | 81% | 68% | | |
| RoE pre-tax rate (in %) | 2.2% | 2.3% | 2.2% | 2.5% | | |
| RoE (in value) | 1 532 | 1 082 | 2 614 | 1 073 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 10 395 | 10 395 | 2 519 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 532 | 11 477 | 13 009 | 3 591 | | |
| Revenue for the en route charging zone | 125 844 | 136 311 | 262 155 | 145 627 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.2% | 8.4% | 5.0% | 2.5% | | |
| Ex-post RoE pre-tax rate (in %) | 2.2% | 24.4% | 11.1% | 8.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



skeyes net gain on activity in the Belgium-Luxembourg en route charging zone in the year 2022

skeyes reported a net gain of +2.5 M€, as a combination of a gain of +3.3 M€ arising from the cost sharing mechanism, with a loss of -0.7 M€ arising from the traffic risk sharing mechanism.

skeyes overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+2.5 M€) and the actual RoE (+1.1 M€) amounts to +3.6 M€ (2.5% of the en route revenues). The resulting ex-post rate of return on equity is 8.4%, which is higher than the 2.5% planned in the PP.

BELGIUM-LUXEMBOURG: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| ANA LUX planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 74 | 198 | 272 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 7 230 | 7 734 | 14 964 | 7 312 | 7 568 | 7 407 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.0% | 2.6% | 1.8% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 1.8% | 1.8% | 1.8% | 0.0% | 0.0% | 0.0% |
| ANA LUX actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 74 | 601 | 675 | -285 | | |
| Revenue for the en route charging zone | 7 230 | 7 822 | 15 052 | 7 237 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.0% | 7.7% | 4.5% | -3.9% | | |
| Ex-post RoE pre-tax rate (in %) | 1.8% | 14.6% | 8.2% | -4.5% | | |
| MUAC (Belgium) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 62 219 | 61 994 | 124 213 | 81 791 | 85 630 | 88 348 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Belgium) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 1 101 | 1 101 | 10 705 | | |
| Revenue for the en route charging zone | 62 219 | 63 095 | 125 314 | 82 927 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.7% | 0.9% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| MUAC (Luxembourg) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 1 924 | 1 917 | 3 842 | 2 530 | 2 648 | 2 733 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Luxembourg) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 34 | 34 | 331 | | |
| Revenue for the en route charging zone | 1 924 | 1 952 | 3 876 | 2 565 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.8% | 0.9% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 74 | 198 | 272 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 71 374 | 71 645 | 143 019 | 91 633 | 95 847 | 98 488 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.3% | 0.2% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 74 | 1 736 | 1 811 | 10 751 | | |
| Revenue for the en route charging zone | 71 374 | 72 869 | 144 242 | 92 729 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 2.4% | 1.3% | 11.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Belgium-Luxembourg (ANA, MUAC Belgium and MUAC Luxembourg) corresponds to 11.6% of the en route revenues. The RoE cannot be calculated for MUAC, as it has no equity. | | | | | | |

LUXEMBOURG: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|---|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Luxembourg TCZ represents 1.1% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 1 Airports with more than 80,000 IFR mvmts: 0 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Luxembourg: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 14 886 778 | 15 998 271 | 30 885 049 | 14 758 082 | 15 289 170 | 15 808 863 |
| Inflation % | 0.0% | 0.9% | | 5.6% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 103.6 | 104.6 | | 113.3 | 115.5 | 117.8 |
| Real terminal costs (€2017) | 14 426 430 | 15 402 852 | 29 829 282 | 13 245 680 | 13 485 544 | 13 719 004 |
| Total terminal service units | 40 007 | 46 661 | 86 668 | 53 623 | 57 101 | 58 613 |
| Real terminal DUC per service unit (€2017) | 360.60 | 330.10 | 344.18 | 247.01 | 236.17 | 234.06 |
| Luxembourg: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 14 886 778 | 14 950 684 | 29 837 462 | 15 064 398 | | |
| Inflation % | 0.0% | 3.5% | | 8.2% | | |
| Inflation index (100 in 2017) | 103.6 | 107.3 | | 116.1 | | |
| Real terminal costs (€2017) | 14 426 430 | 14 065 550 | 28 491 980 | 13 184 201 | | |
| Total terminal service units | 40 007 | 45 367 | 85 374 | 54 061 | | |
| Real terminal AUC per service unit (€2017) | 360.60 | 310.04 | 333.73 | 243.87 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -1 047 587 | -1 047 587 | 306 316 | |
| | in % | +0.0% | -6.5% | -3.4% | +2.1% | |
| Inflation % | in p.p. | 0.0 p.p. | 2.6 p.p. | | 2.6 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 2.7 p.p. | | 2.8 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -1 337 302 | -1 337 302 | -61 480 | |
| | in % | +0.0% | -8.7% | -4.5% | -0.5% | |
| Total terminal service units | in value | 0 | -1 294 | -1 294 | 438 | |
| | in % | - | -2.8% | -1.5% | +0.8% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -20.06 | -10.45 | -3.14 | |
| | in % | +0.0% | -6.1% | -3.0% | -1.3% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -1.3% (or -3.14 €2017) lower than the planned DUC. This results from the combination of slightly higher than planned TNSUs (+0.8%) and slightly lower than planned terminal costs in real terms (-0.5%, or -0.1 M€2017). It should be noted that actual inflation index in 2022 was +2.8 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>+0.8%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal charging zone 2 service units</p> <p>The difference between actual and planned TNSUs (+0.8%) falls inside the ±2% dead band. Hence gain of additional terminal revenues is kept by the ANSPs (see items 10 to 13).</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP -0.5%</p> <p>Other ANSP(s) 0%</p> <p>METSP(s) 0%</p> <p>NSA 0%</p> <p>Total CZ -0.5%</p> | | | |
| <p>Terminal charging zone 2 costs by entity</p> <p>Actual real terminal costs are -0.5% (-0.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, ANA (-0.5%, or -0.1 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs +2.1%</p> <p>Other operating costs +5.7%</p> <p>Depreciation -21.4%</p> <p>Cost of capital 0%</p> <p>Exceptional costs 0%</p> <p>VFR exempted flights 0%</p> <p>Total Main ANSP -0.5%</p> | | | |
| <p>Terminal charging zone 2 costs for the main ANSP (ANA) at charging zone level</p> <p>Slightly lower than planned terminal costs in real terms for ANA in 2022 (-0.5%, or -0.1 M€2017) result from:</p> <ul style="list-style-type: none"> - Higher staff costs (+2.1%), reported to be due to "the decrease of CNS staff couldn't balance out the effect, that a series of ATCOs who reached the age to retire decided not to do so, we again witness a surplus in overall staff costs." - Significantly higher other operating costs (+5.7%), mainly related to higher overhead costs and unforeseen expert costs for the CNS service in order to respond to a series of unexpected departures of ATSEPs. - Significantly lower depreciation (-21.4%), mainly due to the later capitalisation of two projects, the surveillance chain upgrade and the replacement of the WAN and LAN infrastructure. | | | | | | |

LUXEMBOURG: Terminal charging zone

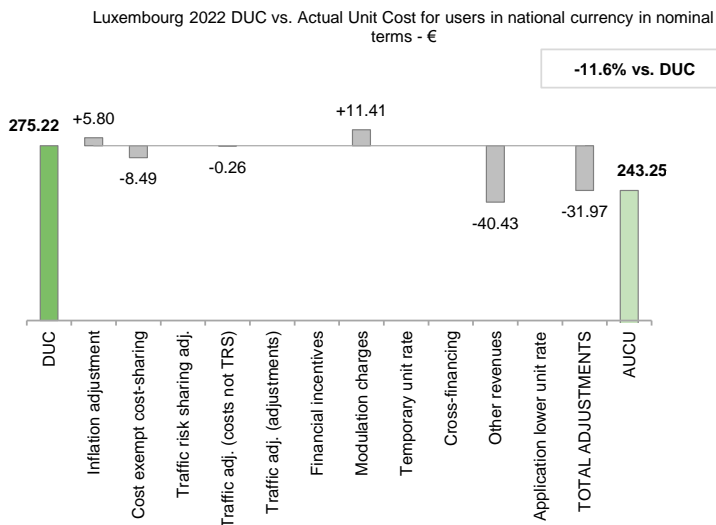
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 294.55 |
| DUC to be charged retroactively | -19.34 |
| DUC | 275.22 |
| Inflation adjustment | 5.80 |
| Cost exempt from cost-sharing | -8.49 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | -0.26 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 11.41 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -40.43 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -31.97 |
| AUCU | 243.25 |
| AUCU vs. DUC | -11.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

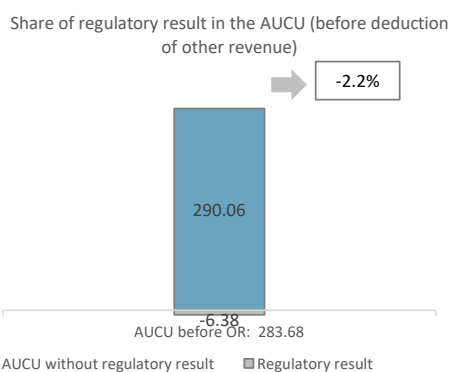
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-------------|--------------|
| by item | New and existing investments | -401 | -7.41 |
| | Competent authorities and qualified entities costs | 0 | 0.00 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | -58 | -1.08 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -459 | -8.49 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk-sharing for the calendar year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| ANA LUX | -345 | -6.38 |
| METSP(s) | € '000 | €/SU |
| | | |
| Total charging zone | -345 | -6.38 |
| Actual cost for users*** | 15 336 | 283.68 |
| Regulatory result (% AUCU) | -2.2% | -2.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (243.25 €) is -11.6% lower than the nominal DUC (275.22 €). The difference between these two figures (-31.97 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+5.80 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-8.49 €/SU);
- the deduction of the traffic adjustment (-0.26 €/SU) for the costs not subject to traffic risk sharing;
- the modulation of charges (+11.41 €/SU); and
- the deduction of the other revenues (-40.43 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -2.2%.

LUXEMBOURG: Terminal main ANSP (ANA LUX)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

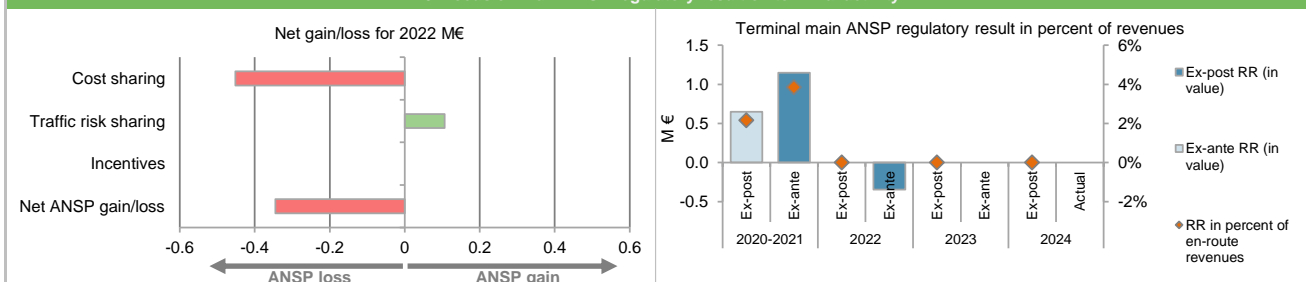
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|-------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 934 | -306 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 351 | 313 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -139 | -459 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 1 147 | -452 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -1.5% | 0.8% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 26 686 | 13 052 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -398 | 107 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 748 | -345 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ANA LUX planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 11 080 | 25 218 | 36 298 | 25 044 | 28 598 | 28 179 |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | 100% | 100% |
| RoE pre-tax rate (in %) | 1.8% | 1.8% | 1.8% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 198 | 451 | 649 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 198 | 451 | 649 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 14 530 | 15 515 | 30 044 | 14 758 | 15 289 | 15 809 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 2.9% | 2.2% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 1.8% | 1.8% | 1.8% | 0.0% | 0.0% | 0.0% |
| ANA LUX actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 11 080 | 11 313 | 22 393 | 15 950 | | |
| Proportion of financing through equity (in %) | 100% | 100% | 100% | 100% | | |
| RoE pre-tax rate (in %) | 1.8% | 1.8% | 1.8% | 0.0% | | |
| RoE (in value) | 198 | 202 | 400 | 0 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 748 | 748 | -345 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 198 | 951 | 1 149 | -345 | | |
| Revenue for the terminal charging zone | 14 530 | 15 329 | 29 859 | 14 719 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.4% | 6.2% | 3.8% | -2.3% | | |
| Ex-post RoE pre-tax rate (in %) | 1.8% | 8.4% | 5.1% | -2.2% | | |

13. Focus on main ANSP regulatory result on terminal activity



ANA net gain on activity in the Luxembourg terminal charging zone in the year 2022

ANA reported a net loss of -0.3 M€, as a combination of a loss of -0.5 M€ arising from the cost sharing mechanism, with a gain of +0.1 M€ arising from the traffic risk sharing mechanism.

ANA overall regulatory results (RR) for the Luxembourg terminal charging zone activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-0.3 M€) amounts to -0.3 M€ (-2.3% of the terminal revenues), as the RoE for ANA has been set to zero. The resulting ex-post rate of return on equity is -2.2%.

BELGIUM-LUXEMBOURG: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|--|--------------|----------------|---------------|---------------|----------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Belgium-Luxembourg | | | | | | | |
| Terminal charging zone 1: Belgium Brussels Terminal charging zone 2: Luxembourg | | | | | | | |
| Belgium-Luxembourg: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 207 900 840 | 216 999 041 | 424 899 880 | 220 164 809 | 230 239 134 | 228 481 759 |
| Real terminal costs (€2017) | | 47 043 378 | 49 456 299 | 96 499 677 | 46 890 820 | 50 328 791 | 50 751 819 |
| Real gate-to-gate costs (€2017) | | 254 944 217 | 266 455 340 | 521 399 557 | 267 055 629 | 280 567 925 | 279 233 578 |
| En route share (%) | | 81.5% | 81.4% | 81.5% | 82.4% | 82.1% | 81.8% |
| Belgium-Luxembourg: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 207 900 840 | 204 483 829 | 412 384 668 | 207 326 224 | | |
| Real terminal costs (€2017) | | 47 043 378 | 45 719 716 | 92 763 094 | 45 273 566 | | |
| Real gate-to-gate costs (€2017) | | 254 944 217 | 250 203 545 | 505 147 762 | 252 599 790 | | |
| En route share (%) | | 81.5% | 81.7% | 81.6% | 82.1% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| in value | | 0 | -16 251 795 | -16 251 795 | -14 455 839 | | |
| in % | | 0.0% | -6.1% | -3.1% | -5.4% | | |
| En route share | | | | | | | |
| in p.p. | | -0.0 p.p. | 0.3 p.p. | 0.1 p.p. | -0.4 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -5.4% (-14.5 M€2017) lower than planned, as en route costs are lower than planned by -12.8 M€2017 and terminal costs are lower than planned by -1.6 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (82.1%) is slightly lower than planned in the PP for 2022 (82.4%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| skeyes (Belgium-Lux) | 1 914 | 181 232 | 1.1% | 5 410 | 183 724 | 2.9% | |
| ANA LUX | 0 | 22 070 | 0.0% | -630 | 21 956 | -2.9% | |
| MUAC (Belgium) | 0 | 81 791 | 0.0% | 10 705 | 82 927 | 12.9% | |
| MUAC (Luxembourg) | 0 | 2 530 | 0.0% | 331 | 2 565 | 12.9% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| | | | | | | | |
| Total | 1 914 | 287 623 | 0.7% | 15 816 | 291 172 | 5.4% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Belgium-Luxembourg covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +15.8 M€ (+14.3 M€ for en route and +1.5 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 5.4% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (0.7% of gate-to-gate revenues).</p> | | | | | | | |
| <p>Belgium-Luxembourg gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | |

Annual Monitoring Report 2022

Local level view

Malta

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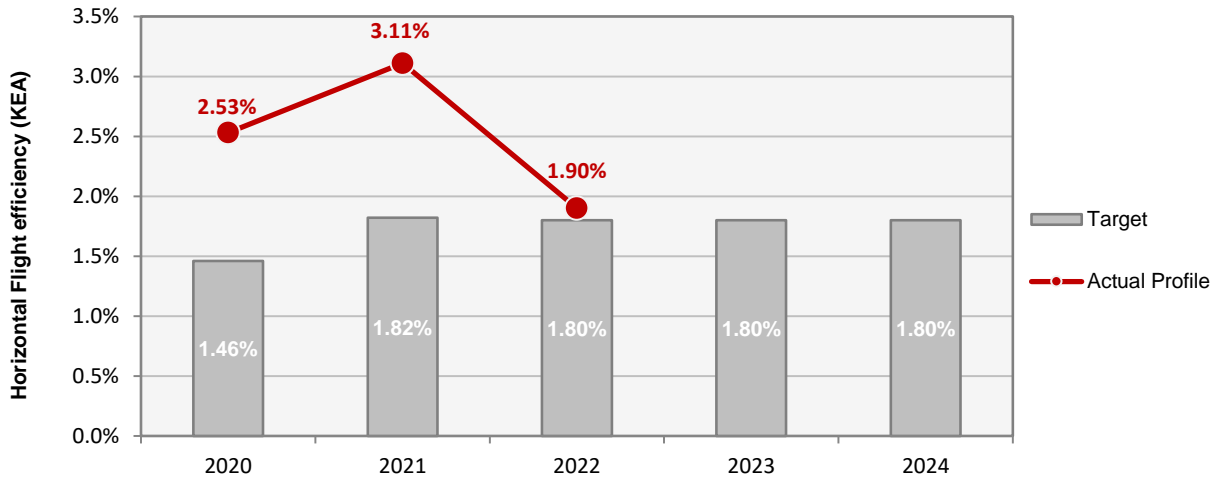
MALTA**Monitoring of SAFETY for 2022**

| Effectiveness of Safety Management | | | | | | |
|---|--------------|-----------------------|-------------------------------------|-------------------------------|-------------------------|-------------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| MATS | 100 | D | D | D | D | D |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet, or exceed, the RP3 target level. The maximum level of maturity has been retained for all components.</p> | | | | | | |

MALTA

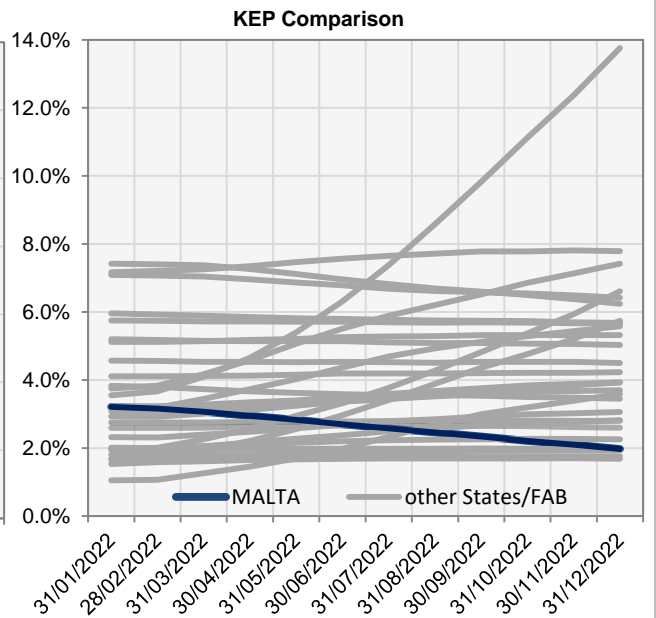
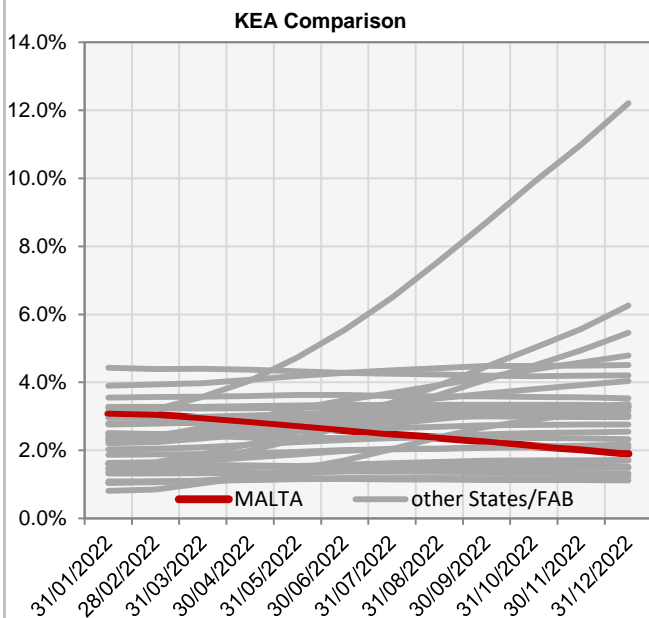
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.46% | 1.82% | 1.80% | 1.80% | 1.80% |
| Actual performance | 2.53% | 3.11% | 1.90% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 3.08% | 3.04% | 2.94% | 2.83% | 2.71% | 2.59% | 2.46% | 2.37% | 2.26% | 2.12% | 2.03% | 1.90% |
| KEP | 3.21% | 3.16% | 3.07% | 2.95% | 2.83% | 2.70% | 2.58% | 2.46% | 2.34% | 2.21% | 2.10% | 1.97% |
| KES | 2.27% | 2.24% | 2.19% | 2.13% | 2.04% | 1.97% | 1.90% | 1.83% | 1.74% | 1.65% | 1.58% | 1.49% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

MALTA

ENVIRONMENT - Airports

1. Overview

The scope of RP3 monitoring for Malta comprises the main airport (LMML), where traffic in 2022 was still 17% lower than in 2019.

In accordance with IR (EU) 2019/317 and the traffic volume, additional taxi-out and ASMA times are not monitored at this airport and the environmental performance focuses only on the share of arrivals applying CDO.

The share of CDO flights is still in the higher range of all observed values in 2022.

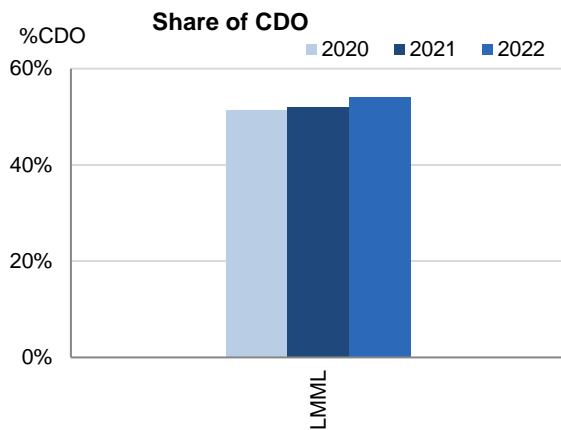
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

4. Share of arrivals applying CDO



The share of CDO flights at Malta (LMML) increased slightly to 54.1% which is well above the overall RP3 value in 2022 (29.0%) and in the higher range of all observed values in 2022.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-----------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Malta/Luqa-LMML | - | - | - | | | - | - | - | | | 51% | 52% | 54% | | |

MALTA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malta | | | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------------|------|------|------|------|------|
| Malta (LMMM ACC) | 16% | | | | |

Initiatives implemented or planned to improve PI#6

No permanent segregated airspace for LMMMACC

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malta | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malta | | | | | |

Initiatives implemented or planned to improve PI#7

No permanent segregated airspace for LMMMACC

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malta | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malta | | | | | |

Initiatives implemented or planned to improve PI#8

No permanent segregated airspace for LMMMACC

MALTA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|---|------|------|------|------|------|--------------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | n/a | 0.01 | 0.01 | 0.01 | 0.01 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| While numbers are rebounding, the charging zones retain significant excess capacity availability. | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Actual values represent expected capacity targets. | | | | | | | |
| Capacity Planning | | | | | | | |
| No capacity issues identified for Malta en route airspace. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Malta ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 30 | 39 | 38 | 38 | |
| Actual | 32 | 30 | 30 | 28 | | | |
| Subsequent to COVID, recruitment of ATCOs has not been at the level planned for, due to high demand of these skills worldwide. | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| Not applicable | | | | | | | |
| Summary of capacity performance | | | | | | | |
| Malta experienced an increase in traffic from 72k flights in 2021, with zero ATFM delay, to 101k flights in 2022, also with zero en route ATFM delay. | | | | | | | |
| Traffic levels were still substantially below the 130k flights in 2019. | | | | | | | |

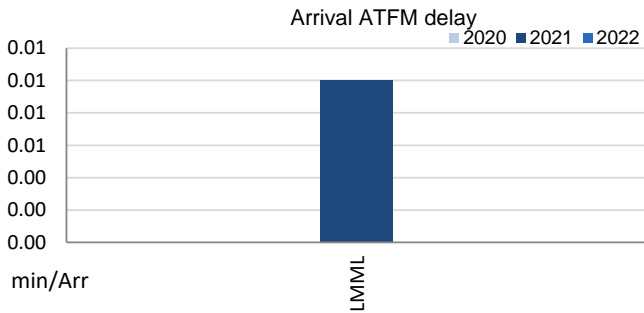
1. Overview

The scope of RP3 monitoring for Malta comprises the main airport (LMML), where traffic in 2022, regardless of an increase of 49% with respect to 2021, was still 17 % lower than in 2019.

In accordance with IR (EU) 2019/317 and the traffic volume, pre-departure delays are not monitored at Malta and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.

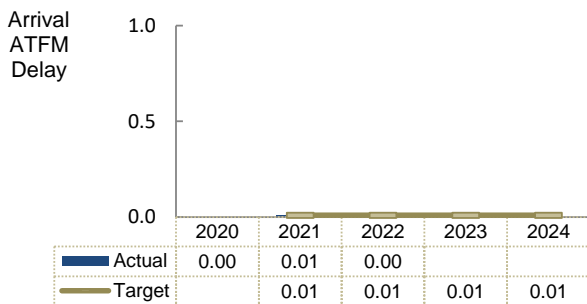
Average arrival ATFM delays in 2022 was 0 min/arr, compared to 0.01 min/arr in 2021 and ATFM slot adherence remains high (2022: 96.6%; 2021: 96.6%).

2. Arrival ATFM Delay



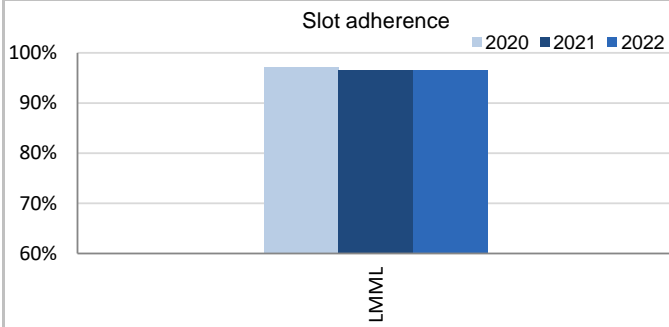
No arrival ATFM delay was observed at Malta-Luqa (LMML) in 2022.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Malta's ATFM slot compliance was 96.6%. With regard to the 3.4% of flights that did not adhere, 1.3% was early and 2.1% was late.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-----------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Malta/Luqa-LMML | 0 | 0.01 | 0 | | | 97.1% | 96.6% | 96.6% | | | - | - | - | | | - | - | - | | |

MALTA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Malta ECZ represents 0.3% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2425 of 5 December 2022
The final version of the plan was adopted and published by Malta in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Malta: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 20 127 208 | 21 864 744 | 41 991 952 | 23 764 564 | 23 778 505 | 25 626 024 |
| Inflation % | 0.8% | 0.7% | | 4.7% | 2.8% | 2.1% |
| Inflation index (100 in 2017) | 104.1 | 104.8 | | 109.7 | 112.8 | 115.1 |
| Real en route costs (€2017) | 19 569 513 | 21 155 781 | 40 725 294 | 22 250 004 | 21 740 183 | 23 058 376 |
| Total en route service units | 395 964 | 528 000 | 923 964 | 811 000 | 1 006 000 | 1 044 000 |
| Real en route DUC per service unit (€2017) | 49.42 | 40.07 | 44.08 | 27.44 | 21.61 | 22.09 |

| Malta: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 20 127 208 | 20 351 623 | 40 478 831 | 20 051 830 | | |
| Inflation % | 0.8% | 0.7% | | 6.1% | | |
| Inflation index (100 in 2017) | 104.1 | 104.8 | | 111.2 | | |
| Real en route costs (€2017) | 19 569 513 | 19 656 702 | 39 226 216 | 18 554 602 | | |
| Total en route service units | 395 964 | 503 699 | 899 664 | 666 812 | | |
| Real en route AUC per service unit (€2017) | 49.42 | 39.02 | 43.60 | 27.83 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------|--------------|--------------|-------------|------|------|
| En route costs (nominal €) | 0 | -1 513 121 | -1 513 121 | -3 712 734 | | |
| in value | 0 | -1 513 121 | -1 513 121 | -3 712 734 | | |
| in % | - | -6.9% | -3.6% | -15.6% | | |
| Inflation % | 0.0 p.p. | 0.0 p.p. | | 1.4 p.p. | | |
| in p.p. | 0.0 p.p. | 0.0 p.p. | | 1.5 p.p. | | |
| Inflation index (100 in 2017) | 0.0 p.p. | 0.0 p.p. | | 1.5 p.p. | | |
| Real en route costs (€2017) | 0 | -1 499 078 | -1 499 078 | -3 695 401 | | |
| in value | 0 | -1 499 078 | -1 499 078 | -3 695 401 | | |
| in % | - | -7.1% | -3.7% | -16.6% | | |
| Total en route service units | 0 | -24 301 | -24 301 | -144 188 | | |
| in value | 0 | -24 301 | -24 301 | -144 188 | | |
| in % | - | -4.6% | -2.6% | -17.8% | | |
| Real en route unit cost per service unit (€2017) | 0.00 | -1.04 | -0.48 | 0.39 | | |
| in value | 0.00 | -1.04 | -0.48 | 0.39 | | |
| in % | - | -2.6% | -1.1% | +1.4% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +1.4% (or +0.39 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-17.8%) and significantly lower than the planned en route costs in real terms (-16.6%, or -3.7 M€2017).

En route service units

The difference between 2022 actual and planned TSUs (-17.8%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (MATS) bearing a loss of -0.8 M€2017.

En route costs by entity

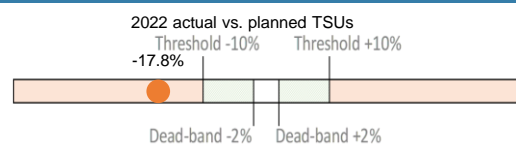
The 2022 actual real en route costs are -16.6% (-3.7 M€2017) lower than planned. This is the result of lower costs for the main ANSP, MATS (-18.4%, or -3.5 M€2017) and lower NSA/EUROCONTROL costs (-5.7%, or -0.2 M€2017).

En route costs for the main ANSP (MATS) at charging zone level

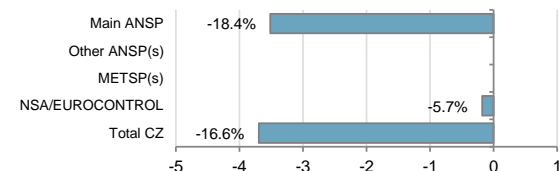
Significantly lower than planned en route costs in real terms for MATS in 2022 (-18.4%, or -3.5 M€2017) result from:

- Higher than planned staff costs (+3.4%, or +0.3 M€2017),
- Significantly lower than planned other operating costs (-40.0%, or -2.5 M€2017),
- Significantly lower than planned depreciation costs (-38.6%, or -1.1 M€2017),
- lower than planned cost of capital (-33.7% or -0.2 M€2017).

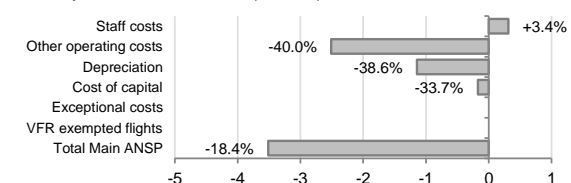
There are no explanations available in the Additional information to the reporting tables regarding the differences between the 2022 determined and actual costs (Additional information to the Reporting Tables: Table 1 - item 2. a)



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



MALTA: En route charging zone

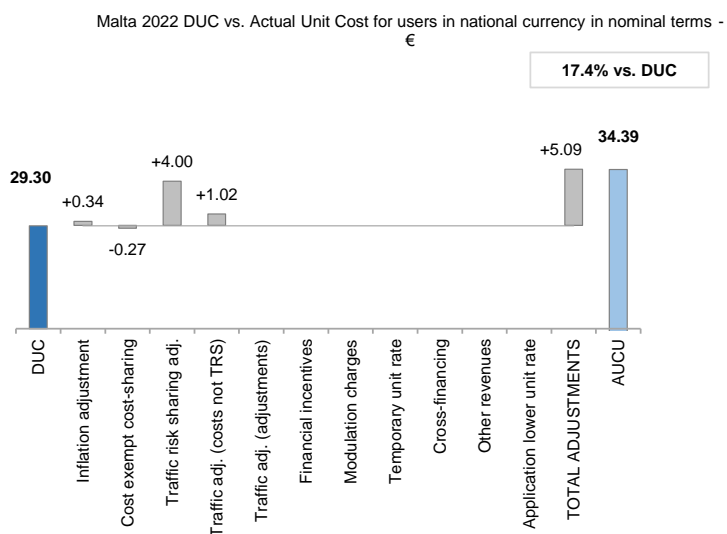
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 33.35 |
| DUC to be charged retroactively | -4.05 |
| DUC | 29.30 |
| Inflation adjustment | 0.34 |
| Cost exempt from cost-sharing | -0.27 |
| Traffic risk sharing adjustment | 4.00 |
| Traffic adj. (costs not TRS) | 1.02 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 5.09 |
| AUCU | 34.39 |
| AUCU vs. DUC | +17.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

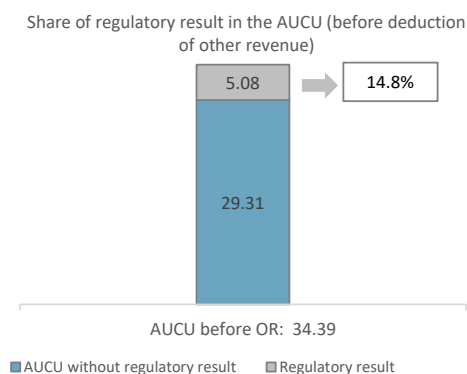
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-------------|--------------|
| by item | New and existing investments | 0 | 0.00 |
| | Competent authorities and qualified entities costs | 0 | 0.00 |
| | Eurocontrol costs | -181 | -0.27 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -181 | -0.27 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| MATS | 3 388 | 5.08 |
| METSP(s) | € '000 | €/SU |
| | | |
| Total charging zone | 3 388 | 5.08 |
| Actual cost for users*** | 22 934 | 34.39 |
| Regulatory result (% AUCU) | 14.8% | 14.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of the activities performed in 2022 (34.39 €) is +17.4% higher than the nominal DUC (29.30 €). The difference between these two figures (+5.09 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+0.34 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.27 €/SU);
- the addition of the traffic risk sharing adjustments (+4.00 €/SU); and
- the addition of the traffic adjustment (+1.02 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 14.8%.

MALTA: En route main ANSP (MATS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

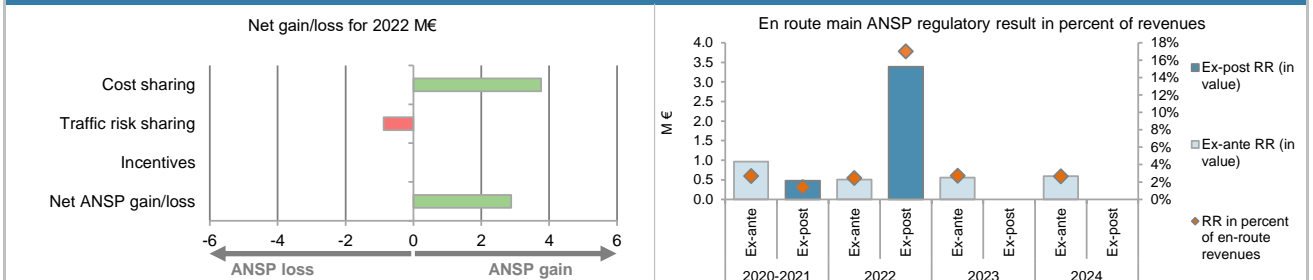
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|-------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 422 | 3 532 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 0 | 228 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -970 | 0 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 452 | 3 759 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -2.6% | -17.8% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 34 696 | 19 932 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -759 | -877 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | -307 | 2 882 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| MATS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-------------|--------------|-------------|--------------|-------------|-------------|
| Total asset base | 10 917 | 12 436 | 23 354 | 12 976 | 13 885 | 14 757 |
| Proportion of financing through equity (in %) | 91% | 95% | 93% | 98% | 100% | 100% |
| RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.4% | 4.0% | 4.0% | 4.0% |
| RoE (in value) | 495 | 470 | 964 | 505 | 555 | 590 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 495 | 470 | 964 | 505 | 555 | 590 |
| Revenue for the en route charging zone | 17 253 | 18 775 | 36 027 | 20 598 | 20 539 | 22 313 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.9% | 2.5% | 2.7% | 2.5% | 2.7% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.4% | 4.0% | 4.0% | 4.0% |
| MATS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 10 917 | 7 758 | 18 675 | 12 976 | | |
| Proportion of financing through equity (in %) | 91% | 95% | 93% | 98% | | |
| RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.5% | 4.0% | | |
| RoE (in value) | 495 | 293 | 788 | 505 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | -307 | -307 | 2 882 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 495 | -14 | 480 | 3 388 | | |
| Revenue for the en route charging zone | 17 253 | 17 045 | 34 298 | 19 949 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.9% | -0.1% | 1.4% | 17.0% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | -0.2% | 2.8% | 26.6% | | |

13. Focus on the main ANSP regulatory result on en route activity



MATS net gain on activity in the Malta en route charging zone in the year 2022

MATS reported a net gain of +2.9 M€, as a combination of a gain of +3.8 M€ arising from the cost sharing mechanism and a loss of -0.9 M€ arising from the traffic risk sharing mechanism.

MATS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+2.9 M€) and the actual RoE (+0.5 M€) amounts to +3.4 M€ (17.0% of the en route revenues). The resulting ex-post rate of return on equity is 26.6%, which is higher than the 4.0% planned in the PP.

MALTA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Malta TCZ represents 0.3% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 1 Airports with more than 80,000 IFR mvmts: 0 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Malta: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 5 058 181 | 5 349 338 | 10 407 520 | 5 757 104 | 6 088 716 | 6 673 787 |
| Inflation % | 0.8% | 0.7% | | 4.7% | 2.8% | 2.1% |
| Inflation index (100 in 2017) | 104.1 | 104.8 | | 109.7 | 112.8 | 115.1 |
| Real terminal costs (€2017) | 4 913 948 | 5 167 669 | 10 081 618 | 5 374 588 | 5 565 036 | 5 999 409 |
| Total terminal service units | 14 528 | 19 000 | 33 528 | 31 000 | 35 000 | 36 000 |
| Real terminal DUC per service unit (€2017) | 338.24 | 271.98 | 300.69 | 173.37 | 159.00 | 166.65 |
| Malta: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 5 058 181 | 3 709 338 | 8 767 519 | 3 661 045 | | |
| Inflation % | 0.8% | 0.7% | | 6.1% | | |
| Inflation index (100 in 2017) | 104.1 | 104.8 | | 111.2 | | |
| Real terminal costs (€2017) | 4 913 948 | 3 582 573 | 8 496 521 | 3 408 863 | | |
| Total terminal service units | 14 528 | 19 269 | 33 797 | 29 791 | | |
| Real terminal AUC per service unit (€2017) | 338.24 | 185.93 | 251.40 | 114.43 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -1 640 000 | -1 640 000 | -2 096 059 | |
| | in % | - | -30.7% | -15.8% | -36.4% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.0 p.p. | 1.4 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.0 p.p. | 1.5 p.p. | | |
| Real terminal costs (€2017) | in value | 0 | -1 585 096 | -1 585 096 | -1 965 725 | |
| | in % | - | -30.7% | -15.7% | -36.6% | |
| Total terminal service units | in value | 0 | 269 | 269 | -1 209 | |
| | in % | - | +1.4% | +0.8% | -3.9% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -86.06 | -49.29 | -58.95 | |
| | in % | - | -31.6% | -16.4% | -34.0% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>-3.9%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was -34.0% (or -58.95 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-36.6%, or -2.0 M€2017) and lower than planned TNSUs (-3.9%).</p> | | | | | | |
| Terminal service units | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP -42.6%</p> <p>Other ANSP(s) -10.1%</p> <p>METSP(s) -2.1%</p> <p>NSA -2.1%</p> <p>Total CZ -36.6%</p> | | | |
| <p>The difference between the 2022 actual and planned TNSUs (-3.9%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ATSP and the airspace users, with the ATSP (MATS) bearing a loss of -0.1 M€2017.</p> | | | | | | |
| Terminal costs by entity | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -38.2%</p> <p>Other operating costs -58.0%</p> <p>Depreciation -30.7%</p> <p>Cost of capital -32.6%</p> <p>Exceptional costs -42.6%</p> <p>VFR exempted flights -42.6%</p> <p>Total Main ANSP -42.6%</p> | | | |
| <p>The 2022 actual real terminal costs are -36.6% (-2.0 M€2017) lower than planned. This is the result of lower costs for the main ANSP, MATS (-42.6%, or -1.9 M€2017), the other ANSP (MIA, -10.1%, or -0.05 M€2017) and the NSA (-2.1%, or 0.01 M€2017).</p> | | | | | | |
| Terminal costs for the main ANSP (MATS) at charging zone level | | | | | | |
| <p>Significantly lower than planned terminal costs in real terms for MATS in 2022 (-42.6%, or -1.9 M€2017) result from:</p> <ul style="list-style-type: none"> Significantly lower than planned staff costs (-38.2%, or -0.9 M€2017), "due to the fact that during 2022 some ATCOs obtained the area licence and a portion of their wages was apportioned to en route." Significantly lower than planned other operating costs (-58.0%, or -0.8 M€2017), Lower than planned depreciation costs (-30.7%, or -0.2 M€2017), "due to the fact that the actual realised CAPEX was much lower than anticipated." Lower than planned cost of capital (-32.6%, or -0.03 M€2017), mainly due to significantly lower asset base. | | | | | | |

MALTA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

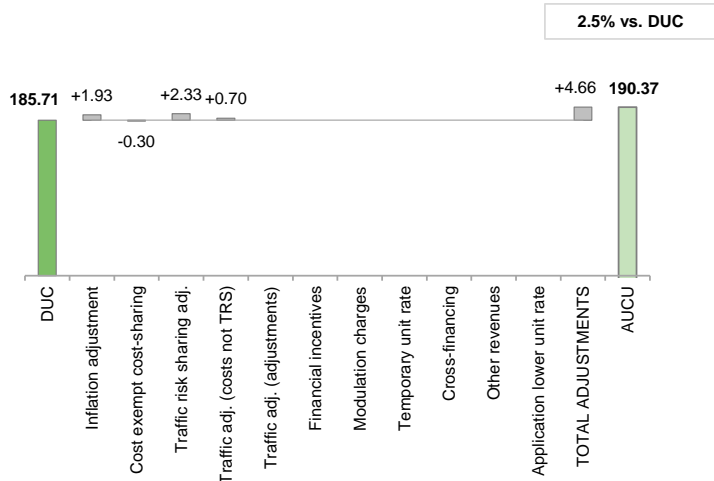
5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level

Malta 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - €



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 159.94 |
| DUC to be charged retroactively | 25.78 |
| DUC | 185.71 |
| Inflation adjustment | 1.93 |
| Cost exempt from cost-sharing | -0.30 |
| Traffic risk sharing adjustment | 2.33 |
| Traffic adj. (costs not TRS) | 0.70 |
| Traffic adj. (adjustments)* | 0.00 |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | 0.00 |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 4.66 |
| AUCU | 190.37 |
| AUCU vs. DUC | 2.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

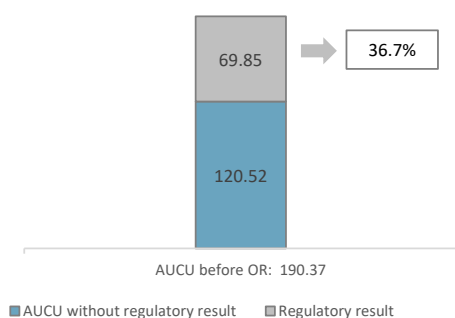
7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|-----------|--------------|
| by item | New and existing investments | 0 | 0.00 |
| | Competent authorities and qualified entities costs | -9 | -0.30 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | -9 | -0.30 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|--------------|---------------|
| MATS | 2 043 | 68.59 |
| MIA | 38 | 1.26 |
| METSP(s) | | |
| | | |
| Total charging zone | 2 081 | 69.85 |
| Actual cost for users*** | 5 671 | 190.37 |
| Regulatory result (% AUCU) | 36.7% | 36.7% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of the activities performed in 2022 (190.37 €) is +2.5% higher than the nominal DUC (185.71 €). The difference between these two figures (+4.66 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+1.93 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.30 €/SU);
- the addition of the traffic risk sharing adjustments (+2.33 €/SU); and
- the addition of the traffic adjustment (+0.70 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 36.7%.

MALTA: Terminal main ANSP (MATS)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

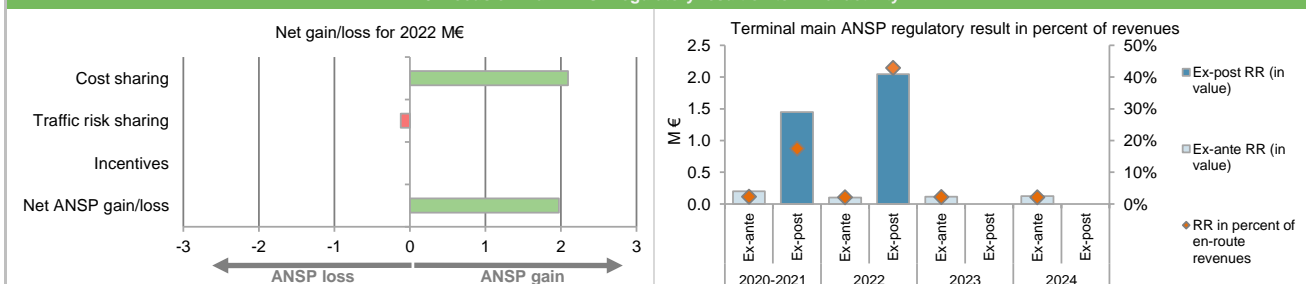
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 626 | 2 041 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 0 | 53 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -407 | 0 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 1 219 | 2 094 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.8% | -3.9% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 8 440 | 4 732 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 68 | -122 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 1 287 | 1 973 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| MATS planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|--------------|--------------|--------------|---------------|--------------|--------------|
| Total asset base | 2 236 | 2 606 | 4 842 | 2 619 | 2 837 | 3 090 |
| Proportion of financing through equity (in %) | 91% | 95% | 93% | 98% | 100% | 100% |
| RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.4% | 4.0% | 4.0% | 4.0% |
| RoE (in value) | 101 | 98 | 200 | 102 | 113 | 124 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 101 | 98 | 200 | 102 | 113 | 124 |
| Revenue for the terminal charging zone | 4 177 | 4 461 | 8 639 | 4 836 | 5 152 | 5 721 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.4% | 2.2% | 2.3% | 2.1% | 2.2% | 2.2% |
| Ex-ante RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.4% | 4.0% | 4.0% | 4.0% |
| MATS actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 2 236 | 1 589 | 3 825 | 1 764 | | |
| Proportion of financing through equity (in %) | 91% | 95% | 93% | 100% | | |
| RoE pre-tax rate (in %) | 5.0% | 4.0% | 4.5% | 4.0% | | |
| RoE (in value) | 101 | 60 | 161 | 71 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 1 287 | 1 287 | 1 973 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 101 | 1 347 | 1 448 | 2 043 | | |
| Revenue for the terminal charging zone | 4 177 | 4 122 | 8 299 | 4 768 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.4% | 32.7% | 17.4% | 42.9% | | |
| Ex-post RoE pre-tax rate (in %) | 5.0% | 89.2% | 40.8% | 115.8% | | |

13. Focus on main ANSP regulatory result on terminal activity



MATS net gain on activity in the Malta terminal charging zone in the year 2022

MATS reported a net gain of +2.0 M€, as a combination of a gain of +2.1 M€ arising from the cost sharing mechanism, with a loss of -0.1 M€ arising from the traffic risk sharing mechanism.

MATS overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+2.0 M€) and the actual RoE (+0.1 M€) amounts to +2.0 M€ (42.9% of the terminal revenues). The resulting ex-post rate of return on equity is 115.8%, which is higher than the 4.0% planned in the PP.

MALTA: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|------|------|------------|------|------|------|
| MIA planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 474 | 470 | 944 | 492 | 496 | 500 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MIA actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 16 | 16 | 38 | | |
| Revenue for the terminal charging zone | 474 | 478 | 952 | 484 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 3.3% | 1.6% | 7.8% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Malta (MIA) corresponds to 7.8% of the terminal revenues. It should be noted that MIA does not charge cost of capital. | | | | | | |

MALTA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------|---------------|---------------|------------|--------------|---------------|---------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Malta | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Malta | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malta: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 19 569 513 | 21 155 781 | 40 725 294 | 22 250 004 | 21 740 183 | 23 058 376 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 4 913 948 | 5 167 669 | 10 081 618 | 5 374 588 | 5 565 036 | 5 999 409 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 24 483 461 | 26 323 450 | 50 806 911 | 27 624 592 | 27 305 219 | 29 057 785 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 79.9% | 80.4% | 80.2% | 80.5% | 79.6% | 79.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malta: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 19 569 513 | 19 656 702 | 39 226 216 | 18 554 602 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 4 913 948 | 3 582 573 | 8 496 521 | 3 408 863 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 24 483 461 | 23 239 276 | 47 722 737 | 21 963 465 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 79.9% | 84.6% | 82.2% | 84.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | in value | 0 | -3 084 174 | -3 084 174 | -5 661 127 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | in % | 0.0% | -11.7% | -6.1% | -20.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | in p.p. | 0.0 p.p. | 4.2 p.p. | 2.0 p.p. | 3.9 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td>80%</td> <td>20%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td>82%</td> <td>18%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>81%</td> <td>19%</td> </tr> <tr> <td>Actual</td> <td>84%</td> <td>16%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>80%</td> <td>20%</td> </tr> <tr> <td>Actual</td> <td>80%</td> <td>20%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>79%</td> <td>21%</td> </tr> <tr> <td>Actual</td> <td>79%</td> <td>21%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 80% | 20% | Actual | 80% | 20% | 2021 | Determined | 80% | 20% | Actual | 85% | 15% | 2020-2021 | Determined | 80% | 20% | Actual | 82% | 18% | 2022 | Determined | 81% | 19% | Actual | 84% | 16% | 2023 | Determined | 80% | 20% | Actual | 80% | 20% | 2024 | Determined | 79% | 21% | Actual | 79% | 21% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 84% | 16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 79% | 21% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 79% | 21% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -20.5% (-5.7 M€2017) lower than planned, as en route costs are lower than planned by -3.7 M€2017 and terminal costs are lower than planned by -2.0 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (84.5%) is higher than planned in the PP for 2022 (80.5%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Revenues | RR % revenues | | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATS | 607 | 25 434 | 2.4% | | 5 431 | 24 716 | 22.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Malta-ANSP-MIA | 0 | 492 | 0.0% | | 38 | 484 | 7.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 607 | 25 926 | 2.3% | | 5 468 | 25 200 | 21.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Malta covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +5.5 M€ (+3.4 M€ for en route and +2.1 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 21.7% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (2.3% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Malta gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Malta gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>2.3%</td> </tr> <tr> <td>Ex-post</td> <td>21.7%</td> </tr> </tbody> </table> | | | | | | | Result Type | Percentage | Ex-ante | 2.3% | Ex-post | 21.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Percentage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 2.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 21.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Netherlands

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NETHERLANDS

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| LVNL | 95 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet the RP3 target level. The level was maintained compared with 2021.</p> | | | | | | |

MUAC

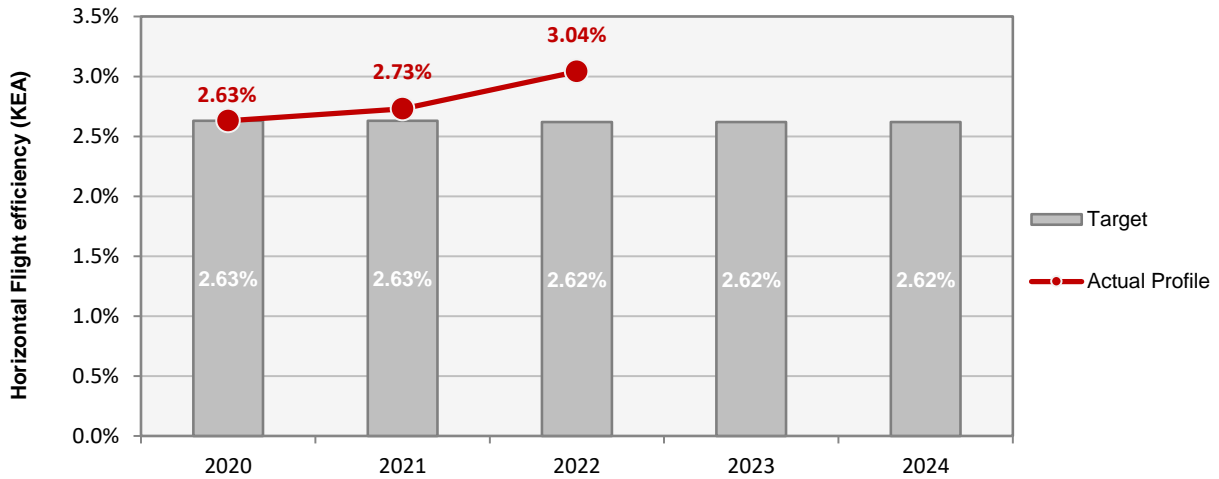
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| MUAC | 95 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> <p>MUAC oversight is exercised in a coordinated manner by the Four States' NSAs (Belgium, Germany, Luxembourg and the Netherlands) over which territories and airspace MUAC provides air traffic services. Safety performance of MUAC is reported separately of these four States as it has been assessed and agreed by the four NSAs.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet the RP3 target levels. Further improvements on three questions were observed during 2022 compared with 2021.</p> <p>IMPORTANT: EASA/European Commission did not receive the verified questionnaire from the NSA on time. This is an important step to receive confirmation that the self-evaluated questionnaire by the ANSP has been actually verified. It should be sent in due time to allow proper and timely drafting of the Monitoring Report.</p> | | | | | | |

NETHERLANDS

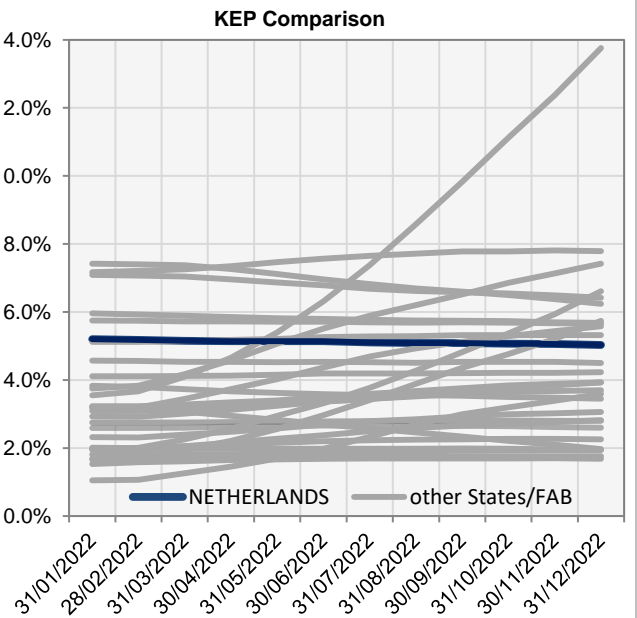
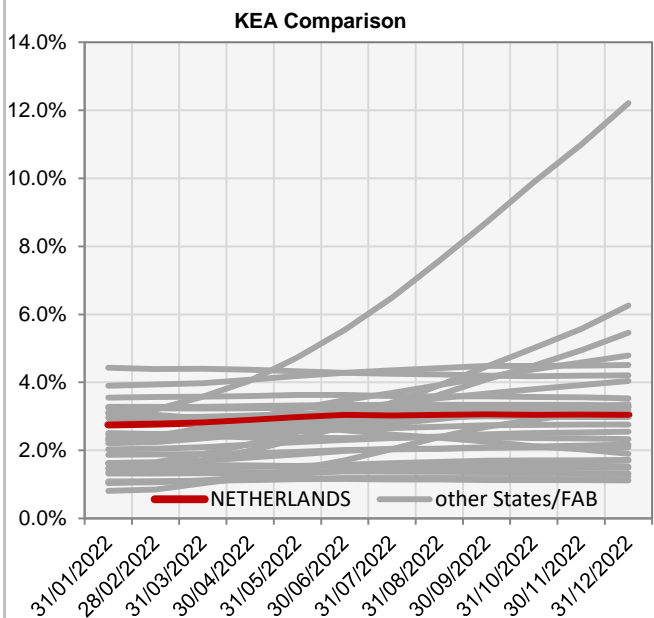
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.63% | 2.63% | 2.62% | 2.62% | 2.62% |
| Actual performance | 2.63% | 2.73% | 3.04% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.76% | 2.79% | 2.82% | 2.90% | 2.98% | 3.04% | 3.03% | 3.04% | 3.06% | 3.04% | 3.05% | 3.04% |
| KEP | 5.20% | 5.18% | 5.15% | 5.14% | 5.14% | 5.14% | 5.11% | 5.09% | 5.09% | 5.07% | 5.06% | 5.03% |
| KES | 5.03% | 5.01% | 4.99% | 4.98% | 4.97% | 4.97% | 4.93% | 4.91% | 4.90% | 4.88% | 4.86% | 4.83% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

For the Netherlands, the scope of the performance monitoring of terminal services under RP3 comprises a total of 4 airports. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, only Amsterdam must be monitored for additional taxi-out and ASMA times.

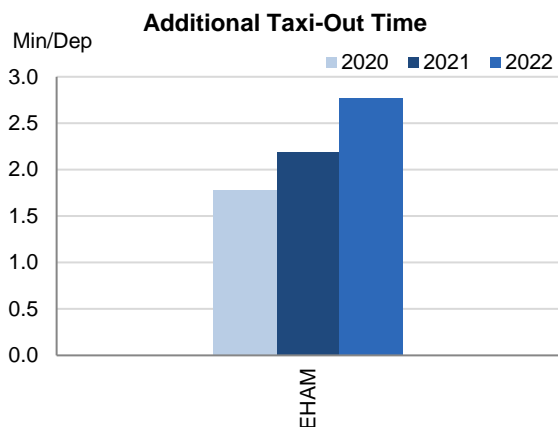
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.

Traffic at these 4 airports decreased in 2022 was still 17% lower than in 2019 regardless the increase of 49% with respect to 2021.

At annual level, both additional times deteriorated in comparison to 2021.

The share of CDO flights was 25.9% in 2022 which is lower than the 2021 value of 28.3%.

2. Additional Taxi-Out Time

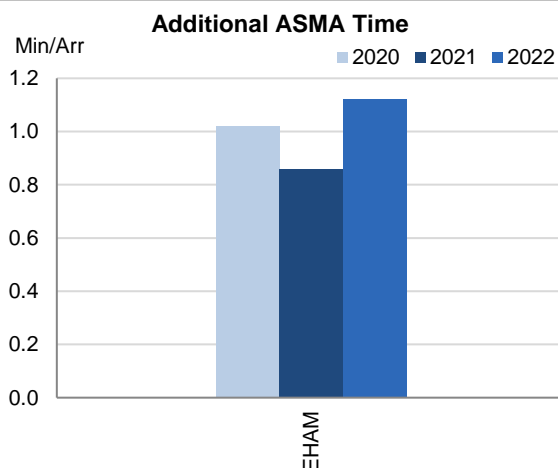


Additional taxi-out times at Amsterdam (EHAM; 2019: 3.11 min/dep; 2020: 1.78 min/dep.; 2021: 2.19 min/dep.; 2022: 2.77 min/dep.) increased in 2022 resulting in an annual value above the SES average 2.52 min/dep, although this was still lower than the pre-COVID value in 2019.

According to the Dutch monitoring report: *No specific initiatives are planned. The performance is mainly influenced by the runway combination in use (e.g. taxiing around an active runway instead of crossing it - that only happens when the runway is not in use) or taxiway maintenance.*

The monitoring report also mentions: *The additional taxi-out time is computed by EUROCONTROL/PRU and can be retrieved on the SES e-dashboard (<https://www.eurocontrol.int/prudata/dashboard/data/>) but the indicator is not available for all airports. However, the methodology defined by PRU is still under discussion because it remains unclear what the time difference from year to year indicates, or the meaningfulness of an airport A versus airport B comparison, in particular when focussing on the ANSP influence on the performance.*

3. Additional ASMA Time

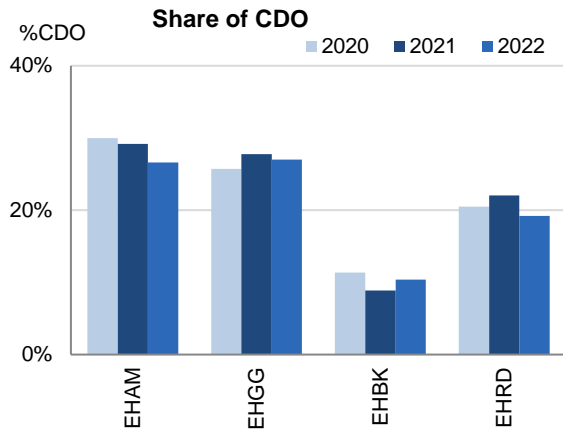


Additional times in the terminal airspace of Amsterdam (EHAM; 2019: 1.78 min/arr.; 2020: 1.02 min/arr.; 2021: 0.86 min/arr.; 2022: 1.12 min/arr.) increased in 2022 resulting in an annual value above the SES average 1.06 min/arr., although this was still lower than the pre-COVID value in 2019.

According to the Dutch monitoring report: *RECAT-EU and Time-Based Separation has been introduced at Amsterdam-Schiphol resulting in increased runway capacity under certain circumstances and reduced time in ASMA.*

Furthermore, implementation of fixed arrival routes in the Schiphol TMA are planned in RP4. Expected effects are reduced vectoring and more predictable times in the TMA.

4. Share of arrivals applying CDO



All airport have shares of CDO flights below the overall RP3 value in 2022 (29.0%).

Amsterdam (EHAM), Groningen (EHGG) and Rotterdam (EHRD) have a lower share of CDO flights than in 2021 while it has increased at Maastricht-Aachen (EHBK) from 8.9% in 2021 to 10.4% of CDO flights in 2022.

According to the Dutch monitoring report: *For the Netherlands, the percentage of arrivals performing a CDO is similar in 2022 compared to 2021 and 2020. Even with lower traffic levels arrivals have to fly a part of the approach in level flight e.g. due to procedures (vertical separation between parallel approaches, interception of glide slope from below). Implementation of fixed arrival routes in the Schiphol and Rotterdam TMA in RP4 should improve predictability of distance to go for airspace users and thus a higher share of CDOs.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Amsterdam Schiphol-EHAM | 1.78 | 2.19 | 2.77 | | | 1.02 | 0.86 | 1.12 | | | 30% | 29% | 27% | | |
| Groningen Eelde-EHGG | - | - | - | | | - | - | - | | | 26% | 28% | 27% | | |
| Maastricht - Aachen-EHBK | - | - | - | | | - | - | - | | | 11% | 9% | 10% | | |
| Rotterdam-EHRD | - | - | - | | | - | - | - | | | 20% | 22% | 19% | | |

NETHERLANDS

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:

At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVP/VGA structures), especially for congested airspaces.

At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Netherlands | 91% | 88% | 83% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Amsterdam | | | | | |
| Maastricht | | | | | |

Initiatives implemented or planned to improve PI#6

For MUAC the ATMP will be used to propose improved routings to aircraft operators in pre-tract. The tool takes into account the expected airspace availability

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Netherlands | | | 90% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Amsterdam | | | 97% | | |
| Maastricht | | | 89% | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Netherlands | | | 81% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Amsterdam | | | 84% | | |
| Maastricht | | | 59% | | |

Initiatives implemented or planned to improve PI#8

NETHERLANDS

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|---|------|------|------|------|------|--------------|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | n/a | n/a | 0.14 | 0.14 | 0.14 | | |
| Actual performance | n/a | n/a | 0.04 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| In 2022, the Netherlands did reach the en route capacity target. | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>LVNL reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the quarterly performance reports directly to the State. This report is based on LVNL data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values.</p> <p>MUAC reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the AFG/PMG (ANSP FABEC Group / Performance Management Group) capacity report. This report is based on MUAC data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values.</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>The ANSPs in the Netherlands, LVNL and MUAC, contribute to the new NOP planning process, both the long term NOP and the weekly Rolling NOP.</p> <p>They contribute information and data to the provision for a consolidated European network view of the evolution of the air traffic, enabling the planning of the service delivered to match the expected air traffic demand in a safe, efficient and coordinated manner. However, the 10% capacity buffer requested by the NM, the recommendation for zero delay and the continuous optimistic traffic forecast selected have naturally an adverse impact on ANSPs finance.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Amsterdam ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 85 | 86 | 85 | 81 | |
| Actual | 89 | 90 | 83 | 80 | | | |
| Maastricht ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 290 | 309 | 315 | 317 | For MUAC more ATCO than anticipated have stopped working in OPS |
| Actual | 292 | 286 | 288 | 293 | | | |
| Additional information relating to Russia's war of aggression against Ukraine | | | | | | | |
| <p>For MUAC: Germany introduced (H24), without any consultation with civil ANSPs, corridors to allow military traffic transiting from East to West and vice versa in segregated airspace. This forced traffic to stay below the corridor or climb above having a negative impact on flight profile. There were also instances that traffic had to extend routes due to the unavailability of coordination points.</p> <p>Re-alignment of the corridors and better coordination on when to activate and de-activate the corridors were achieved after negotiations.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>The Netherlands achieved the required en route capacity performance in 2022. There were 1 092k flights handled in the airspace of the Netherlands (both Amsterdam ACC and the DECO sectors in MUAC). There were 48k minutes of en route ATFM delay attributed to ANSPs in Dutch airspace.</p> | | | | | | | |

1. Overview

For the Netherlands, the scope of the performance monitoring of terminal services under RP3 comprises a total of 4 airports. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, only Amsterdam must be monitored for pre-departure delays.

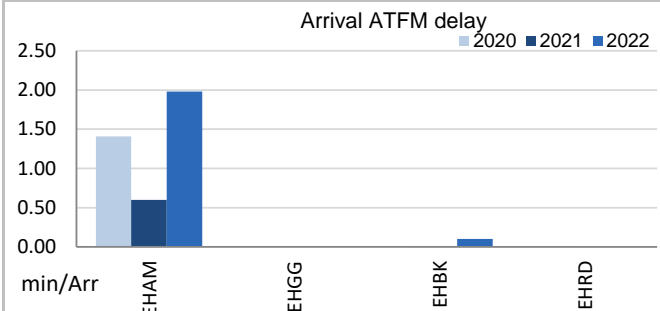
The Airport Operator Data Flow is fully established at Amsterdam and the monitoring of pre-departure delays can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at these 4 airports decreased in 2022 was still 17% lower than in 2019 regardless the increase of 49% with respect to 2021.

Average arrival ATFM delays in 2022 was 1.78 min/arr, compared to 0.54 min/arr in 2021.

ATFM slot adherence has deteriorated (2022: 97.7%; 2021: 98.1%).

2. Arrival ATFM Delay



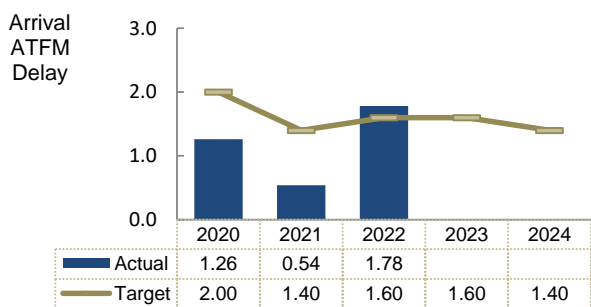
Amsterdam (EHAM: 2019: 4.23 min/arr.; 2020: 1.41 min/arr.; 2021: 0.60 min/arr.; 2022: 1.98 min/arr.) significantly increased the arrival ATFM delays compared to previous years. 56% of the delays were attributed to Aerodrome Capacity issues, followed by 39% attributed to Weather. The rest of Dutch airports registered zero or nearly zero arrival ATFM delays in 2022.

The Dutch monitoring report mentions these recommendations: *In the long term LVNL is working with AAS, the main Airline Operator at Schiphol, and the slot coordinator to improve the slot allocation, with the aim of reducing bunching for inbound traffic demand since this is one of the major causes of airport delay at Schiphol. Additionally, LVNL has implemented Time-Based Separation to increase the runway capacity of Schiphol, especially during strong winds. This is expected to reduce airport ATFM delays.*

As additional measures, the monitoring report adds: *In the coming years each year one runway will undergo heavy maintenance, lasting 2-3 months. This reduced runway availability increases the probability that only one landing runway can be used while demand is for two runways.*

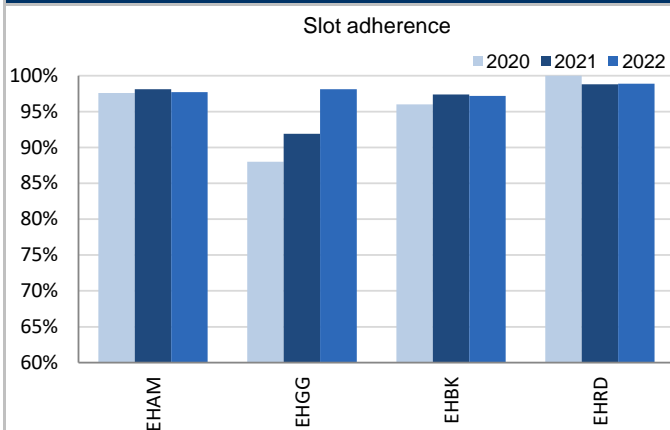
Concerning remedial actions related to the war in Ukraine, the monitoring report mentions: *For MUAC: Re-alignment of the corridors and a better coordination on when to activate and de-activate the corridors were achieved after negotiations.*

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



All four airports showed adherence above 97% and the national average was 97.7%. With regard to the 2.3% of flights that did not adhere, 0.6% was early and 1.6% was late.

5. ATC Pre-departure Delay

The share of unidentified delay reported by Amsterdam (the only Dutch airport subject to monitoring of this indicator) in 2022 has been well above 40% every month of the year, preventing the calculation of this indicator.

The insufficient data quality provided by Amsterdam is a long standing issue. The Dutch monitoring report does not mention any special measure to improve the data reporting.

6. All Causes Pre-departure Delay

Amsterdam is the only Dutch airport subject to the monitoring of this indicator.

The total (all causes) delay in the actual off block time at Amsterdam in 2022 was 27.35 min/dep. which is the second highest among the RP3 monitored airports. The highest delays per flight were observed in June, averaging more than 35 min/dep.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Amsterdam Schiphol-EHAM | 1.41 | 0.6 | 1.98 | | | 97.6% | 98.1% | 97.7% | | | n/a | n/a | n/a | | | 15.52 | 20.40 | 27.35 | | |
| Groningen Eelde-EHGG | 0.01 | 0 | 0.01 | | | 88.0% | 91.9% | 98.1% | | | - | - | - | | | - | - | - | | |
| Maastricht - Aachen-EHBK | 0 | 0.01 | 0.1 | | | 96.0% | 97.4% | 97.2% | | | - | - | - | | | - | - | - | | |
| Rotterdam-EHRD | 0 | 0 | 0 | | | 100.0% | 98.8% | 98.9% | | | - | - | - | | | - | - | - | | |

NETHERLANDS: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Netherlands ECZ represents 3.5% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 04 November 2022 and found consistent as per Commission Decision (EU) 2023/179 of 14 December 2022
The final version of the plan was adopted and published by Netherlands in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Netherlands: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|--------------|--------------|--------------|
| En route costs (nominal €) | 243 029 947 | 234 579 497 | 477 609 444 | 246 424 037 | 253 428 073 | 259 058 008 |
| Inflation % | 1.1% | 1.4% | | 1.5% | 1.6% | 1.6% |
| Inflation index (100 in 2017) | 105.5 | 107.0 | | 108.6 | 110.3 | 112.1 |
| Real en route costs (€2017) | 232 377 205 | 221 891 943 | 454 269 148 | 229 819 383 | 233 322 266 | 236 043 088 |
| Total en route service units | 1 479 593 | 1 515 000 | 2 994 593 | 2 593 000 | 3 081 000 | 3 294 000 |
| Real en route DUC per service unit (€2017) | 157.05 | 146.46 | 151.70 | 88.63 | 75.73 | 71.66 |

| Netherlands: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|---------------|---------------|---------------|--------------|-------|-------|
| En route costs (nominal €) | 243 029 947 | 230 489 192 | 473 519 139 | 245 065 982 | | |
| Inflation % | 1.1% | 2.8% | | 11.6% | | |
| Inflation index (100 in 2017) | 105.5 | 108.4 | | 121.0 | | |
| Real en route costs (€2017) | 232 377 205 | 215 411 703 | 447 788 907 | 208 962 798 | | |
| Total en route service units | 1 479 593 | 1 565 320 | 3 044 913 | 2 585 835 | | |
| Real en route AUC per service unit (€2017) | 157.05 | 137.62 | 147.06 | 80.81 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------------------------|-------------|--------------|--------------|--------------|------|------|
| En route costs (nominal €) | in value | 0 | -4 090 304 | -4 090 304 | -1 358 055 | | |
| | in % | - | -1.7% | -0.9% | -0.6% | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.4 p.p. | | 10.1 p.p. | | |
| | Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.5 p.p. | 12.5 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -6 480 241 | -6 480 241 | -20 856 585 | | |
| | in % | - | -2.9% | -1.4% | -9.1% | | |
| Total en route service units | in value | 0 | 50 320 | 50 320 | -7 165 | | |
| | in % | - | +3.3% | +1.7% | -0.3% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -8.85 | -4.64 | -7.82 | | |
| | in % | - | -6.0% | -3.1% | -8.8% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -8.8% (or -7.82 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-9.1%, or -20.9 M€2017) and slightly lower than planned TSUs (-0.3%). It should be noted that actual inflation index in 2022 was +12.5 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-0.3%) falls inside the ±2% dead band. Hence loss of en route revenues is borne by the ANSPs (see items 10 to 14).

En route costs by entity

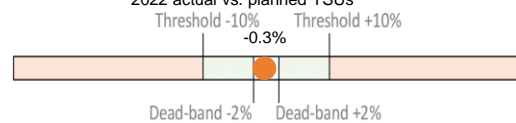
Actual real en route costs are -9.1% (-20.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LVNL (-8.8%, or -14.0 M€2017), the other ANSP (MUAC (Netherlands), -14.9%, or -6.2 M€2017) and the MET service provider (-14.9%, or -1.6 M€2017) and higher costs for the NSA/EUROCONTROL (+5.5%, or +1.0 M€2017).

En route costs for the main ANSP (LVNL) at charging zone level

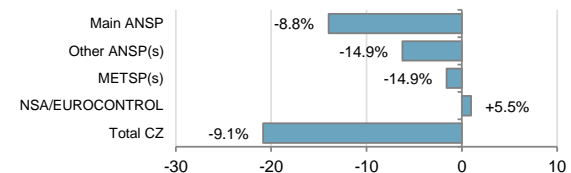
Significantly lower than planned en route costs in real terms for LVNL in 2022 (-8.8%, or -14.0 M€2017) result from:

- Significantly lower staff costs (-17.8%), due to lower FTE's and lower pension costs than planned in performance plan.
- Significantly higher other operating costs (+14.3%), as a result of the increase in the training costs, due to outsourcing of the Initial training of air traffic controllers for RP4 and the inflation, impacting among others, the energy and external hiring costs
- Higher depreciation (+2.0%), related to numerous small changes.
- Significantly higher cost of capital (+24.5%), due to increased interest rate.
- Significantly lower deduction for VFR exempted flights (-6.9%).

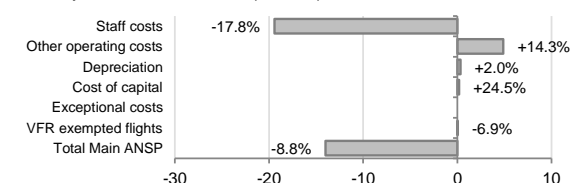
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



NETHERLANDS: En route charging zone

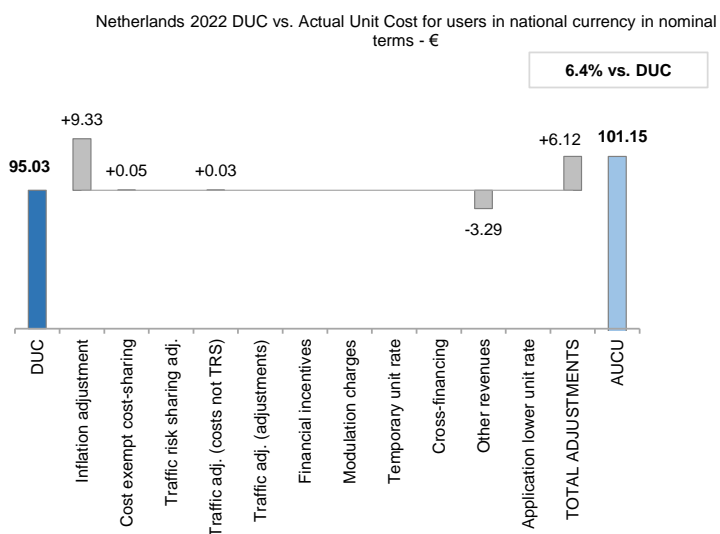
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 95.03 |
| DUC to be charged retroactively | 0.00 |
| DUC | 95.03 |
| Inflation adjustment | 9.33 |
| Cost exempt from cost-sharing | 0.05 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.03 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -3.29 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 6.12 |
| AUCU | 101.15 |
| AUCU vs. DUC | +6.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

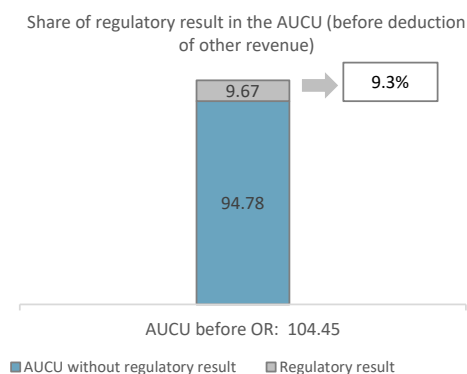
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|------------|-------------|
| by item | New and existing investments | -151 | -0.06 |
| | Competent authorities and qualified entities costs | 0 | 0.00 |
| | Eurocontrol costs | 965 | 0.37 |
| | Pension costs | -1 145 | -0.44 |
| | Interest on loans | 470 | 0.18 |
| | Changes in law | 0 | 0.00 |
| | Total costs exempt from cost sharing | 139 | 0.05 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| LVNL | 16 096 | 6.22 |
| MUAC (Netherlands) | 7 239 | 2.80 |
| METSP(s) | € '000 | €/SU |
| Netherlands MET | 1 682 | 0.65 |
| Total charging zone | 25 017 | 9.67 |
| Actual cost for users*** | 270 083 | 104.45 |
| Regulatory result (% AUCU) | 9.3% | 9.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (101.15 €) is +6.4% higher than the nominal DUC (95.03 €). The difference between these two figures (+6.12 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+9.33 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+0.05 €/SU);
- the addition of the traffic adjustment (+0.03 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-3.29 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 9.3%.

NETHERLANDS: En route main ANSP (LVNL)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

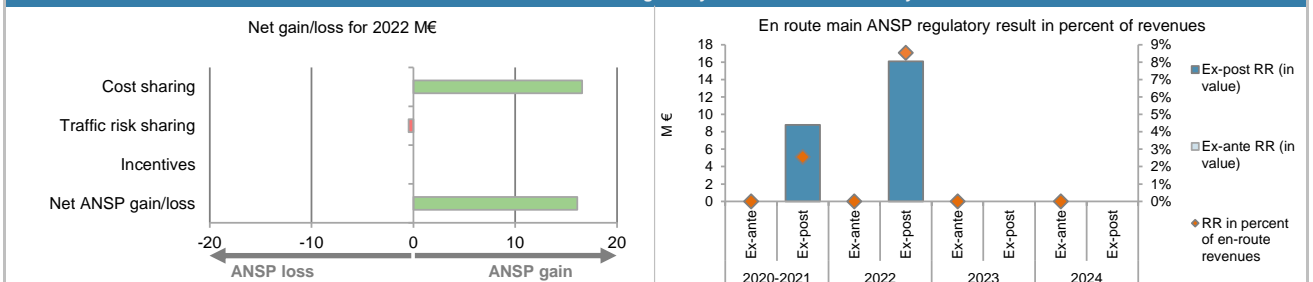
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 802 | -715 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 2 049 | 17 752 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -739 | -467 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 3 113 | 16 570 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.7% | -0.3% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 337 559 | 171 717 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 5 672 | -474 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 8 785 | 16 096 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LVNL planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-------------|--------------|--------------|---------------|-------------|-------------|
| Total asset base | 219 254 | 273 087 | 492 340 | 300 237 | 312 756 | 317 083 |
| Proportion of financing through equity (in %) | 0% | 0% | 0% | 0% | 0% | 0% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 0 | 0 | 0 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 172 918 | 164 641 | 337 559 | 171 717 | 178 005 | 181 888 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| LVNL actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 219 254 | 241 476 | 460 730 | 258 907 | | |
| Proportion of financing through equity (in %) | 0% | 0% | 0% | 0% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | | |
| RoE (in value) | 0 | 0 | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 8 785 | 8 785 | 16 096 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 8 785 | 8 785 | 16 096 | | |
| Revenue for the en route charging zone | 172 918 | 171 624 | 344 542 | 188 528 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 5.1% | 2.5% | 8.5% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |

13. Focus on the main ANSP regulatory result on en route activity



LVNL net gain on activity in the Netherlands en route charging zone in the year 2022

LVNL reported a net gain of +16.1 M€, as a combination of a gain of +16.6 M€ arising from the cost sharing mechanism, with a loss of -0.5 M€ arising from the traffic risk sharing mechanism.

LVNL overall regulatory results (RR) for the en route activity

LVNL has no return on equity, as its assets are entirely financed through debt, no ex-ante estimated surplus was embedded in the cost of capital provided in the PP for RP3. Therefore, ex-post, the overall RR is equal to the net gain from the en route activity mentioned above (+16.1 M€) and corresponds to 8.5% of the en route revenues.

NETHERLANDS: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| MUAC (Netherlands) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 42 081 | 36 524 | 78 605 | 45 512 | 46 027 | 47 611 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MUAC (Netherlands) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 1 747 | 1 747 | 7 239 | | |
| Revenue for the en route charging zone | 42 081 | 38 271 | 80 353 | 50 297 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 4.6% | 2.2% | 14.4% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Netherlands MET planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 9 627 | 11 065 | 20 692 | 11 536 | 11 652 | 11 770 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Netherlands MET actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 578 | 578 | 1 682 | | |
| Revenue for the en route charging zone | 9 627 | 11 218 | 20 845 | 12 634 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 5.2% | 2.8% | 13.3% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 51 708 | 47 589 | 99 297 | 57 048 | 57 679 | 59 381 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 2 325 | 2 325 | 8 921 | | |
| Revenue for the en route charging zone | 51 708 | 49 489 | 101 197 | 62 931 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 4.7% | 2.3% | 14.2% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Netherlands (MUAC and KNMI) corresponds to 14.2% of the en route revenues. The RoE cannot be calculated for MUAC, as they have no equity. | | | | | | |

NETHERLANDS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Netherlands TCZ represents 5.1% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 4 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 3 Airports with more than 80,000 IFR mvmts: 1 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Netherlands: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 72 301 444 | 71 092 604 | 143 394 048 | 74 772 706 | 77 867 459 | 79 526 060 |
| Inflation % | 1.1% | 1.4% | | 1.5% | 1.6% | 1.6% |
| Inflation index (100 in 2017) | 105.5 | 107.0 | | 108.6 | 110.3 | 112.1 |
| Real terminal costs (€2017) | 68 854 896 | 66 892 674 | 135 747 570 | 69 422 076 | 71 324 542 | 72 133 235 |
| Total terminal service units | 210 653 | 244 000 | 454 653 | 313 300 | 376 000 | 401 000 |
| Real terminal DUC per service unit (€2017) | 326.86 | 274.15 | 298.57 | 221.58 | 189.69 | 179.88 |
| Netherlands: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 72 301 444 | 69 238 119 | 141 539 563 | 73 762 180 | | |
| Inflation % | 1.1% | 2.8% | | 11.6% | | |
| Inflation index (100 in 2017) | 105.5 | 108.4 | | 121.0 | | |
| Real terminal costs (€2017) | 68 854 896 | 64 343 347 | 133 198 243 | 62 171 155 | | |
| Total terminal service units | 210 653 | 243 718 | 454 372 | 340 503 | | |
| Real terminal AUC per service unit (€2017) | 326.86 | 264.01 | 293.15 | 182.59 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -1 854 485 | -1 854 485 | -1 010 526 | |
| | in % | - | -2.6% | -1.3% | -1.4% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.4 p.p. | | 10.1 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.5 p.p. | | 12.5 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -2 549 327 | -2 549 327 | -7 250 921 | |
| | in % | - | -3.8% | -1.9% | -10.4% | |
| Total terminal service units | in value | 0 | -282 | -282 | 27 203 | |
| | in % | - | -0.1% | -0.1% | +8.7% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -10.14 | -5.43 | -39.00 | |
| | in % | - | -3.7% | -1.8% | -17.6% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -17.6% (or -39.00 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-10.4%, or -7.3 M€2017) and significantly higher than planned TNSUs (+8.7%). It should be noted that actual inflation index in 2022 was +12.5 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+8.7%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (LVNL) retaining an amount of +2.4 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -10.4% (-7.3 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LVNL (-10.3%, or -6.9 M€2017) and the MET service provider (-14.3%, or -0.3 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs for the main ANSP (LVNL) at charging zone level</p> <p>Significantly lower than planned terminal costs in real terms for LVNL in 2022 (-10.3%, or -6.9 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-10.3%), mainly due to the inflation index impact (+12.5 p.p.) since in nominal terms staff costs are in line with planned (-0.04%); - Significantly lower other operating costs (-15.7%), mainly due to the inflation index impact (+12.5 p.p.), in nominal terms staff costs are -6.0% lower than planned (no driver information has been provided); - Slightly lower depreciation (-1.7%), - Significantly higher cost of capital (+57.6%), due to increased interest rate. | | | | | | |

NETHERLANDS: Terminal charging zone

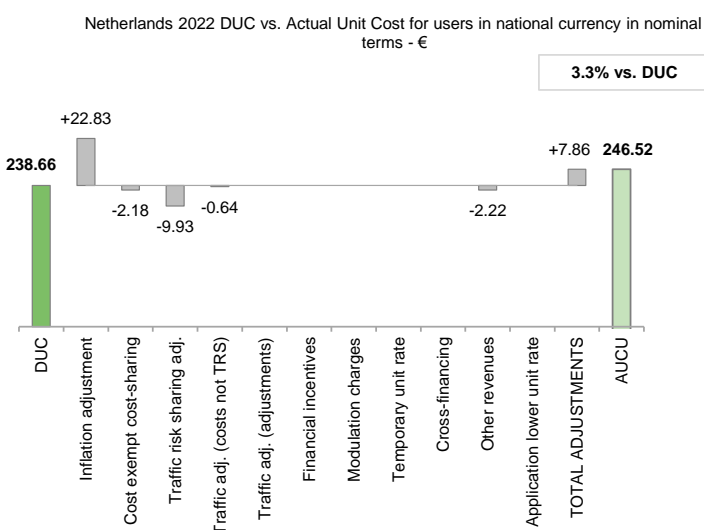
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 238.66 |
| DUC to be charged retroactively | 0.00 |
| DUC | 238.66 |
| Inflation adjustment | 22.83 |
| Cost exempt from cost-sharing | -2.18 |
| Traffic risk sharing adjustment | -9.93 |
| Traffic adj. (costs not TRS) | -0.64 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -2.22 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 7.86 |
| AUCU | 246.52 |
| AUCU vs. DUC | 3.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

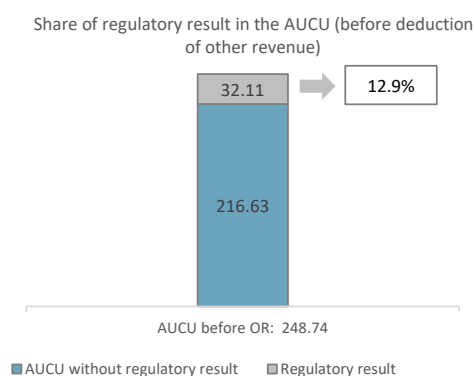
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | -226 | -0.66 |
| | Competent authorities and qualified entities costs | 0 | 0.00 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | -628 | -1.84 |
| | Interest on loans | 111 | 0.33 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -743 | -2.18 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| LVNL | 10 584 | 31.08 |
| METSP(s) | € '000 | €/SU |
| Netherlands-MET | 350 | 1.03 |
| Total charging zone | 10 933 | 32.11 |
| Actual cost for users*** | 84 696 | 248.74 |
| Regulatory result (% AUCU) | 12.9% | 12.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (246.52 €) is +3.3% higher than the nominal DUC (238.66 €). The difference between these two figures (+7.86 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+22.83 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-2.18 €/SU);
- the deduction of the traffic risk sharing adjustments (-9.93 €/SU);
- the deduction of the traffic adjustment (-0.64 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-2.22 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 12.9%.

NETHERLANDS: Terminal main ANSP (LVNL)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

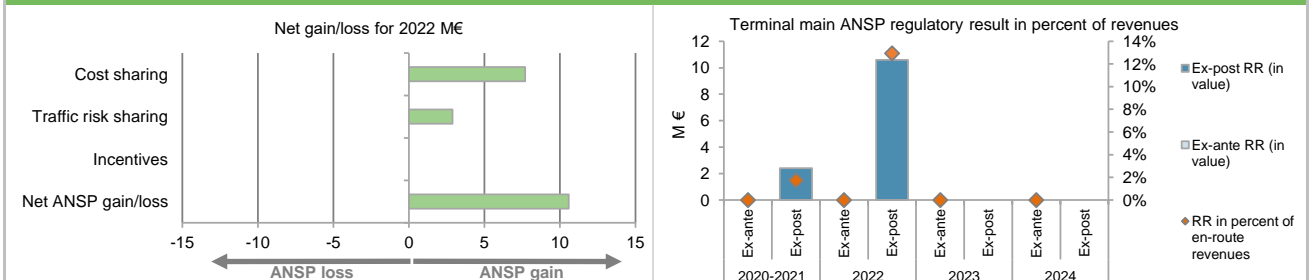
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 775 | 900 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 857 | 7 490 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -133 | -700 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 2 500 | 7 690 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.1% | 8.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 138 866 | 72 258 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -86 | 2 894 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 2 414 | 10 584 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LVNL planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|----------------|---------------|---------------|---------------|
| Total asset base | 44 956 | 59 661 | 104 617 | 60 569 | 63 048 | 64 612 |
| Proportion of financing through equity (in %) | 0% | 0% | 0% | 0% | 0% | 0% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 0 | 0 | 0 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 70 188 | 68 678 | 138 866 | 72 258 | 75 328 | 76 961 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| LVNL actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 44 956 | 48 140 | 93 096 | 52 170 | | |
| Proportion of financing through equity (in %) | 0% | 0% | 0% | 0% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | | |
| RoE (in value) | 0 | 0 | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 2 414 | 2 414 | 10 584 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 2 414 | 2 414 | 10 584 | | |
| Revenue for the terminal charging zone | 70 188 | 69 316 | 139 505 | 81 942 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 3.5% | 1.7% | 12.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |

13. Focus on main ANSP regulatory result on terminal activity



LVNL net gain on activity in the Netherlands terminal charging zone in the year 2022

LVNL reported a net gain of +10.6 M€, as a combination of a gain of +7.7 M€ arising from the cost sharing mechanism, with a gain of +2.9 M€ arising from the traffic risk sharing mechanism.

LVNL overall regulatory results (RR) for the terminal activity

LVNL has no return on equity, as its assets are entirely financed through debt, no ex-ante estimated surplus was embedded in the cost of capital provided in the PP for RP3. Therefore, ex-post, the overall RR is equal to the net gain from the terminal activity mentioned above (+10.6 M€) and corresponds to 12.9% of the en route revenues.

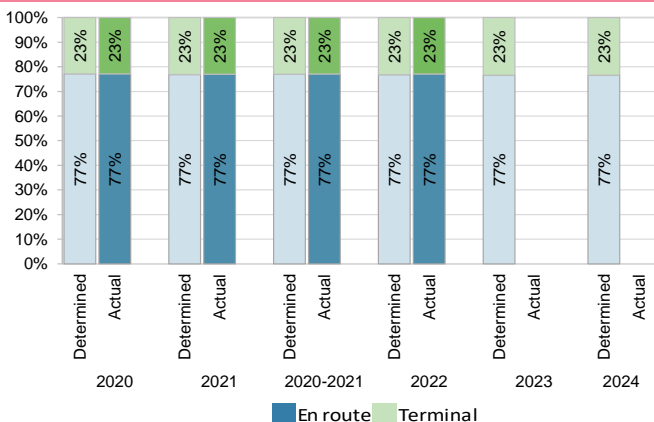
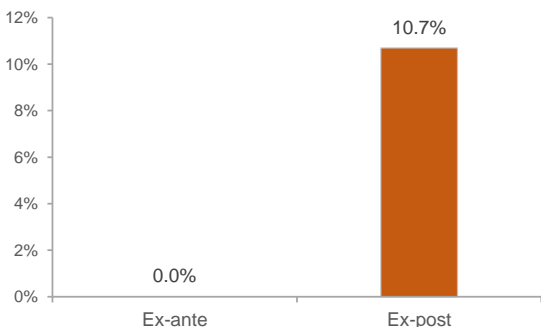
NETHERLANDS: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Netherlands-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 2 113 | 2 415 | 4 528 | 2 515 | 2 539 | 2 565 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Netherlands-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 112 | 112 | 350 | | |
| Revenue for the terminal charging zone | 2 113 | 2 448 | 4 561 | 2 754 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 4.6% | 2.5% | 12.7% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Netherlands (KNMI) corresponds to 12.7% of the terminal revenues. It should be noted that KNMI does not charge cost of capital. | | | | | | |

NETHERLANDS: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|--|----------|-------------|----------------|---------------|---------------|----------------|---------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Netherlands | | | | | | | |
| Terminal charging zone 1: Netherlands | | | | | | | |
| Netherlands: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 232 377 205 | 221 891 943 | 454 269 148 | 229 819 383 | 233 322 266 | 236 043 088 |
| Real terminal costs (€2017) | | 68 854 896 | 66 892 674 | 135 747 570 | 69 422 076 | 71 324 542 | 72 133 235 |
| Real gate-to-gate costs (€2017) | | 301 232 100 | 288 784 617 | 590 016 718 | 299 241 459 | 304 646 809 | 308 176 323 |
| En route share (%) | | 77.1% | 76.8% | 77.0% | 76.8% | 76.6% | 76.6% |
| Netherlands: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 232 377 205 | 215 411 703 | 447 788 907 | 208 962 798 | | |
| Real terminal costs (€2017) | | 68 854 896 | 64 343 347 | 133 198 243 | 62 171 155 | | |
| Real gate-to-gate costs (€2017) | | 301 232 100 | 279 755 050 | 580 987 150 | 271 133 953 | | |
| En route share (%) | | 77.1% | 77.0% | 77.1% | 77.1% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| | in value | 0 | -9 029 567 | -9 029 567 | -28 107 506 | | |
| | in % | 0.0% | -3.1% | -1.5% | -9.4% | | |
| En route share | | | | | | | |
| | in p.p. | 0.0 p.p. | 0.2 p.p. | 0.1 p.p. | 0.3 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
|  <p>In the year 2022, actual gate-to-gate ANS costs are -9.4% (-28.1 ME2017) lower than planned, as en route costs are lower than planned by -20.9 ME2017 and terminal costs are lower than planned by -7.3 ME2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (77.1%) is slightly higher than planned in the PP for 2022 (76.8%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| ANSP(S) | RR | Ex-ante | | | Ex-post | | |
| | | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| LVNL | 0 | 243 976 | 0.0% | 26 679 | 270 469 | 9.9% | |
| MUAC (Netherlands) | 0 | 45 512 | 0.0% | 7 239 | 50 297 | 14.4% | |
| METSP(s) | | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues |
| Netherlands MET | | 0 | 14 050 | 0.0% | 2 032 | 15 388 | 13.2% |
| Total | | 0 | 303 538 | 0.0% | 35 950 | 336 155 | 10.7% |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Netherlands covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +35.9 M€ (+25.0 M€ for en route and +10.9 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 10.7% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (0.0% of gate-to-gate revenues). It should be noted that LVNL has no return on equity, as its assets are entirely financed through debt, no ex-ante estimated surplus was embedded in the cost of capital provided in the PP for RP3.</p> | | | | | | | |
| <p>Netherlands gate-to-gate 2022 regulatory result in % of revenues</p>  | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Norway

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NORWAY

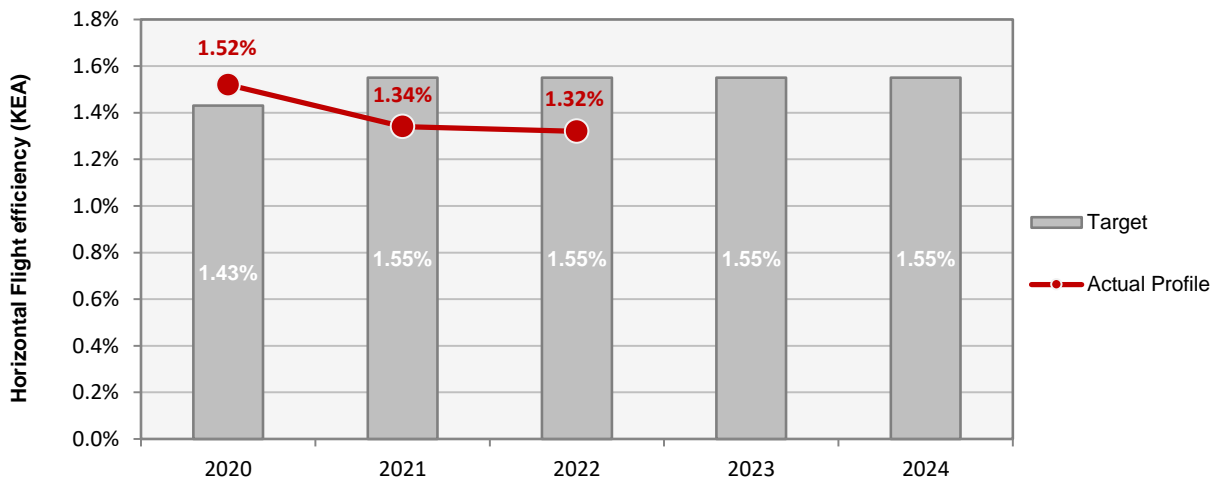
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Avinor | 90 | D | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| <p>Four EoSM components of the ANSP meet or exceed the RP3 target level. Compared with 2021, in 2022 degradation was observed for four questions, including one question for "Safety Risk Management" reducing the maturity of the component from level D to the level C, and consequently not achieving the target for this component. This question is to be improved during RP3 to achieve RP3 targets.</p> | | | | | | |

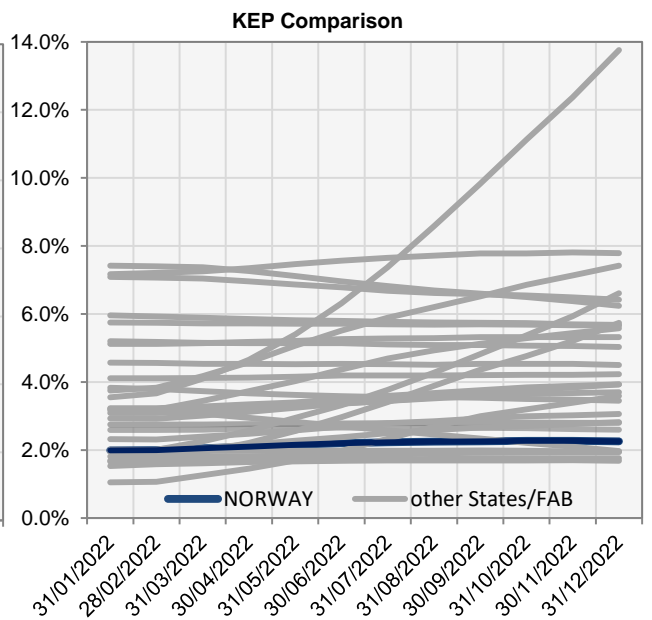
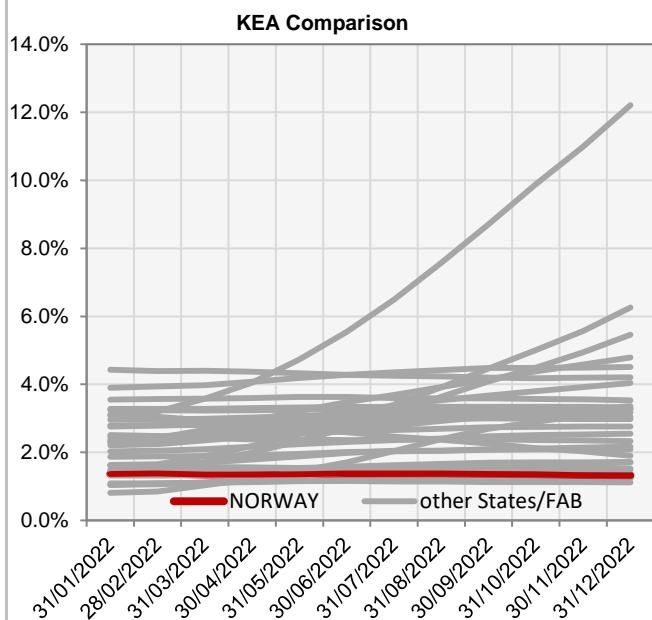
NORWAY

ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.43% | 1.55% | 1.55% | 1.55% | 1.55% |
| Actual performance | 1.52% | 1.34% | 1.32% | | |



| End of month indicators evolution in 2022 | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| KEA | 1.37% | 1.38% | 1.35% | 1.35% | 1.36% | 1.38% | 1.38% | 1.38% | 1.37% | 1.36% | 1.33% | 1.32% |
| KEP | 1.99% | 2.00% | 2.05% | 2.10% | 2.15% | 2.20% | 2.23% | 2.25% | 2.26% | 2.27% | 2.27% | 2.26% |
| KES | 1.93% | 1.94% | 2.00% | 2.05% | 2.10% | 2.16% | 2.19% | 2.22% | 2.23% | 2.25% | 2.26% | 2.26% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

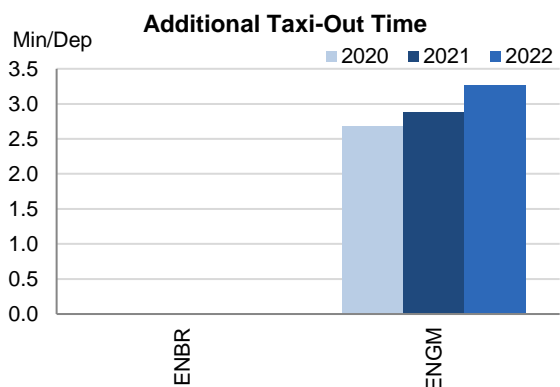
Norway has identified four airports as subject to RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Oslo (EGNM) and Bergen (ENBR)) must be monitored for additional taxi-out and ASMA times. Oslo (A-CDM implemented) is the only Norwegian airport that has finished the full implementation of the Airport Operator Data Flow required for the monitoring of additional times. As reported in RP2, it seems the ATM system is not ready to implement the APDF at Bergen. Norway's monitoring report does not provide any explanation on the measures planned to solve this situation.

Traffic at the ensemble of these four Norwegian airports in 2022 was still 10% lower than in 2019.

Additional ASMA times at Oslo remained low but the taxi operation is heavily influenced by de-icing operation in the winter months, resulting in one of the highest additional taxi-out times in the SES area.

The share of CDO flights is still in the higher range of all observed values in 2022. Norway is in the second place in terms of highest share of CDO flights when calculated by State (65.4%). All airports saw a reduction in the share of CDO flights.

2. Additional Taxi-Out Time

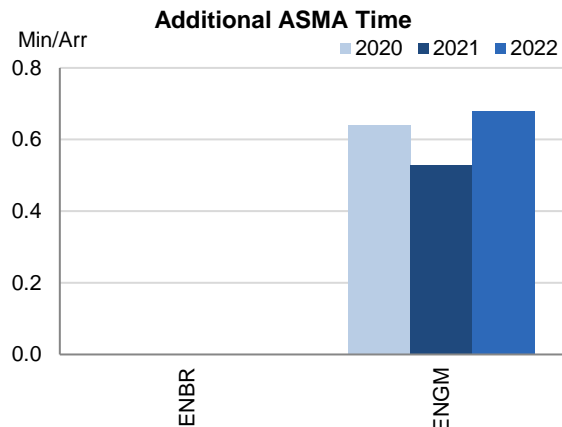


The additional taxi-out times at Oslo have slightly increased (ENGM; 2019: 3.92 min/dep.; 2020: 2.68 min/dep.; 2021: 2.87 min/dep.; 2022: 3.26 min/dep.)

The annual average is influenced by the performance during the winter months due to de-icing.

According to the Norwegian monitoring report, the reason for the missing data for the calculation of additional taxi-out time at Bergen Airport is because they have not implemented A-CDM.

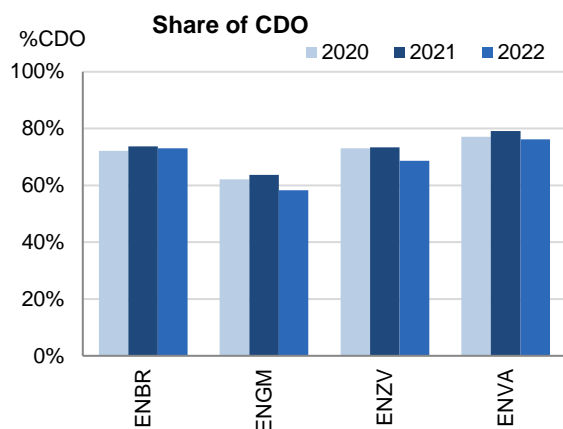
3. Additional ASMA Time



Additional ASMA times at Oslo (ENGM; 2019: 1.03 min/arr.; 2020: 0.64 min/arr.; 2021: 0.53 min/arr.; 2022: 0.68 min/arr.) increased slightly in 2022.

The Norwegian monitoring report mentions that surveillance data from the ENBR area should be good enough for the calculation additional time in TMA to be calculated and it is unknown the reason why this has not been calculated by EUROCONTROL. As explained in previous monitoring exercises, there are several indicators that require the establishment of the Airport Operator Data Flow between the airport and EUROCONTROL. This data is then merged with surveillance data for the calculation of the indicator.

4. Share of arrivals applying CDO



Although the values have reduced for all airports with respect to 2021, all airports still have very high shares of CDO flights with all airports having more than double the overall RP3 value in 2022 (29.0%). In the second half of the year, the monthly values for Oslo/Gardermoen have continuously decreased from 64.5% in July to 53.6% in December.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Bergen/Flesland-ENBR | n/a | n/a | n/a | | | n/a | n/a | n/a | | | 72% | 74% | 73% | | |
| Oslo/Gardermoen-ENGM | 2.68 | 2.87 | 3.26 | | | 0.64 | 0.53 | 0.68 | | | 62% | 64% | 58% | | |
| Stavanger/Sola-ENZV | - | - | - | | | - | - | - | | | 73% | 73% | 69% | | |
| Trondheim/Vaernes-ENVA | - | - | - | | | - | - | - | | | 77% | 79% | 76% | | |

NORWAY

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

LARA has been implemented and Civil/Military Airspace Committee maintain a continued focus on the effectiveness of the booking procedures.

The AMC procedure has been revised establishing new and larger areas in southern Norway with a design that is optimized to cater to civilian traffic flows. The civil/military airspace continually work on optimizing the airspace structure to minimize the impact of military air operations on civilian air traffic. LARA has been deployed to both civil and military users and further integration into the ATM system is ongoing.

Military - related measures implemented or planned to improve capacity

The AMC procedure has been revised establishing new and larger areas in southern Norway with a design that is optimized to cater to civilian traffic flows. The Civil/military airspace committee focus on the improvement of the booking procedures and the intention to improve the ratio between booked versus used reserved airspace.

The civil/military airspace continually work on optimizing the airspace structure to minimize the impact of military air operations on civilian air traffic. LARA has been deployed to both civil and military users and further integration into the ATM system is ongoing.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Norway | 56% | 57% | 49% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bodo | n/a | n/a | n/a | | |
| Oslo | n/a | n/a | n/a | | |
| Stavanger | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#6

No data available per ACC

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Norway | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bodo | n/a | n/a | n/a | | |
| Oslo | n/a | n/a | n/a | | |
| Stavanger | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

No data available per ACC

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Norway | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bodo | n/a | n/a | n/a | | |
| Oslo | n/a | n/a | n/a | | |
| Stavanger | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

No data available per ACC

NORWAY

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.08 | 0.06 | 0.08 | 0.11 | 0.11 | | |
| Actual performance | 0.01 | 0.00 | 0.01 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>No specific capacity issues in 2022, actual traffic in (service units) was 1,1% above the level set in the Performance Plan.</p> <p>The actual en-route ATFM delay per flight of 0,01 min./flt. was significant below the national target set to 0,08 min./flt. Actual performance is so far in RP3 much better than set in the revised Performance Plan.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Nothing reported | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>Norway has been developing ATC capacity over years, and is in position to provide more capacity than the national reference values. The cost optimum capacity for en route delay per flight for Avinor ANS is between 0,18 min./flt. and 0,11 min./flt., but for the airspace users this would be unacceptable.</p> <p>This view is based on the fact that a large portion of the overall traffic is transition flights with little leeway in terms of delays. Based on consultation meetings with the airspace users and Avinor ANS during the en route delay is set to between 0,08 min./flt and 0,11 min./flt. in RP3.</p> <p>Avinor ANS has over the last years been increasing capacity, in order to being able to shift to new technology without major operational consequences for the airspace users.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Bodo ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 37 | 41 | 42 | 42 | |
| Actual | 33 | 31 | 31 | 38 | | | |
| Oslo ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 82 | 98 | 100 | 104 | |
| Actual | 103 | 71 | 90 | 91 | | | |
| Stavanger ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 20 | 29 | 31 | 31 | |
| Actual | 30 | 19 | 27 | 29 | | | |
| Additional information relatind to Russia's war of agresion against Ukraine | | | | | | | |
| Initial drop in overflights estimated to around 20%. Some of the traffic have recovered since the initial phase. In general en route capacity has not been affected. | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Norway experienced an increase in traffic from 376k flights in 2021, with zero ATFM delay, to 529k flights in 2022 - with marginal dealy (3k minutes).</p> <p>Traffic levels were still below the 595k flights in 2019.</p> | | | | | | | |

1. Overview

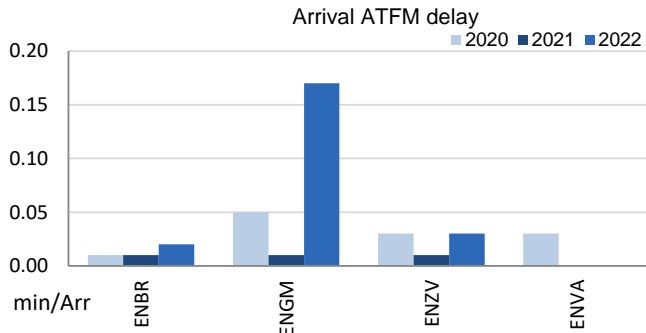
Norway has identified four airports as subject to RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Oslo (EGNM) and Bergen (ENBR)) must be monitored for pre-departure delays. Oslo (A-CDM implemented) is the only Norwegian airport that has finished the full implementation of the Airport Operator Data Flow required for the monitoring of these pre-departure delays.

Regarding the APDF implementation and the calculation of the pre-departure delays at Bergen, Norway's monitoring mentions that Avinor's IT-department is set on the case, and expected to be solved for calculating the 2023 figures.

Traffic at the ensemble of these four Norwegian airports in 2022 was still 10% lower than in 2019.

Average arrival ATFM delays in 2022 was 0.10 min/arr, compared to 0.01 min/arr in 2021. ATFM slot adherence has improved (2022: 99.3%; 2021: 98.6%).

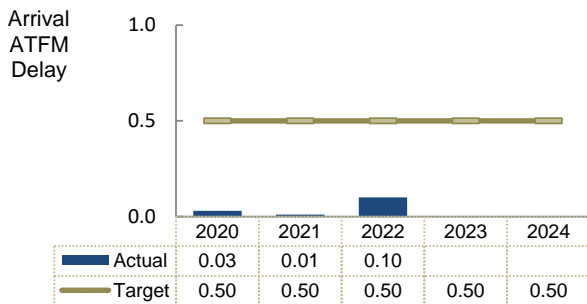
2. Arrival ATFM Delay



Arrival ATFM delays in 2021 decreased and became marginal at all Norwegian airports. However in 2022 Oslo showed a significant increase in arrival delays (ENGM; 2019: 0.31 min/arr; 2020: 0.05 min/arr; 2021: 0.01 min/arr; 2022: 0.17 min/arr) while the rest of airports registered minimum delays.

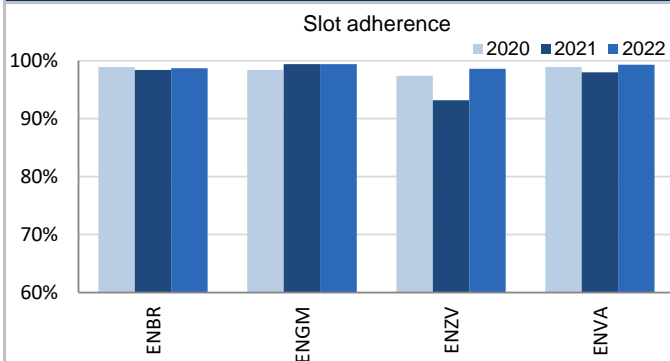
51% of the arrival ATFM delays in Norway were attributed to Weather, followed by ATC Staffing issues (39%) at Oslo.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



All Norwegian airports showed adherence above 98% and the national average was 99.3%. With regard to the 0.7% of flights that did not adhere, 0.3% was early and 0.4% was late.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.

The performance at Oslo has slightly deteriorated (ENGM; 2019: 0.14 min/dep.; 2020: 0.05 min/dep.; 2021: 0.06 min/dep.; 2022: 0.10 min/dep.)

According to the Norwegian monitoring report: *Pre-departure delay in 2022 (ENGM) is increasing compared to the two previous years during the pandemic, but still below the level before the pandemic (2017-2019).*

6. All Causes Pre-departure Delay

The calculation of the All causes pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.

The total (all causes) delay in the actual off block time at Oslo increased again in 2022 (ENGM: 2020: 5.01 min/dep.; 2021: 6.74 min/dep.; 2022: 12.74 min/dep.) but still resulting in the third lowest value among the RP3 monitored airports. The highest delays per flight were observed in December, averaging more than 20 min/dep.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Bergen/Flesland-ENBR | 0.01 | 0.01 | 0.02 | | | 98.9% | 98.4% | 98.7% | | | n/a | n/a | n/a | | | n/a | n/a | n/a | | |
| Oslo/Gardermoen-ENGM | 0.05 | 0.01 | 0.17 | | | 98.4% | 99.4% | 99.4% | | | 0.05 | 0.06 | 0.10 | | | 5.01 | 6.74 | 12.74 | | |
| Stavanger/Sola-ENZV | 0.03 | 0.01 | 0.03 | | | 97.4% | 93.2% | 98.6% | | | - | - | - | | | - | - | - | | |
| Trondheim/Vaernes-ENVA | 0.03 | 0 | 0 | | | 98.9% | 98.0% | 99.3% | | | - | - | - | | | - | - | - | | |

NORWAY: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Norway ECZ represents 1.9% of the SES en route ANS actual costs in 2022
- National currency: NOK Exchange rates (1 EUR=) 2017: 9.32776 NOK 2022: 10.0962 NOK
- Performance Plan: RP3 draft performance plan dated 23 February 2022 and found consistent as per ESA Decision 069/22/COL of 6 April 2022
The final version of the plan was adopted and published by Norway in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Norway: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|-----------------|---------------|---------------|---------------|---------------|---------------|
| En route costs (nominal NOK) | 1 062 829 022 | 1 137 252 345 | 2 200 081 367 | 1 214 521 187 | 1 237 546 593 | 1 268 465 176 |
| Inflation % | 1.2% | 2.2% | | 2.0% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 106.6 | 109.0 | | 111.2 | 113.4 | 115.6 |
| Real en route costs (NOK2017) | 1 012 905 492 | 1 067 536 208 | 2 080 441 700 | 1 120 940 259 | 1 125 662 157 | 1 136 639 931 |
| Total en route service units | 1 229 871 | 1 406 724 | 2 636 595 | 2 048 218 | 2 316 485 | 2 472 291 |
| Real en route DUC per service unit (NOK2017) | 823.59 | 758.88 | 789.06 | 547.28 | 485.94 | 459.75 |
| Real en route DUC per service unit (€2017) | 88.29 | 81.36 | 84.59 | 58.67 | 52.10 | 49.29 |
| Norway: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal NOK) | 1 062 829 022 | 1 144 598 776 | 2 207 427 797 | 1 192 168 502 | | |
| Inflation % | 1.2% | 3.9% | | 6.2% | | |
| Inflation index (100 in 2017) | 106.6 | 110.8 | | 117.7 | | |
| Real en route costs (NOK2017) | 1 012 905 492 | 1 060 231 867 | 2 073 137 358 | 1 054 297 595 | | |
| Total en route service units | 1 229 871 | 1 445 483 | 2 675 354 | 2 071 287 | | |
| Real en route AUC per service unit (NOK2017) | 823.59 | 733.48 | 774.90 | 509.01 | | |
| Real en route AUC per service unit (€2017) | 88.29 | 78.63 | 83.07 | 54.57 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal NOK) | in value | 0 | 7 346 431 | 7 346 431 | -22 352 685 | |
| | in % | - | +0.6% | +0.3% | -1.8% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.7 p.p. | | 4.2 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.8 p.p. | | 6.5 p.p. | |
| Real en route costs (NOK2017) | in value | 0 | -7 304 341 | -7 304 341 | -66 642 664 | |
| | in % | - | -0.7% | -0.4% | -5.9% | |
| Total en route service units | in value | 0 | 38 759 | 38 759 | 23 069 | |
| | in % | - | +2.8% | +1.5% | +1.1% | |
| Real en route unit cost per service unit (NOK2017) | in value | 0.00 | -25.40 | -14.16 | -38.27 | |
| | in % | - | -3.3% | -1.8% | -7.0% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -2.72 | -1.52 | -4.10 | |
| | in % | - | -3.3% | -1.8% | -7.0% | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -7.0% (or -38.27 NOK2017, -4.1 €2017) lower than the planned DUC, resulting from significantly lower than planned en route costs in real terms (-5.9%, or -66.6 MNOK2017, -7.1 M€2017) and higher than planned TSUs (+1.1%). It should be noted that actual inflation index in 2022 was +6.5 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+1.1%) falls within the $\pm 2\%$ dead band. Hence the resulting additional en route revenue is kept by the ANSPs (see items 10 to 14).

En route costs by entity

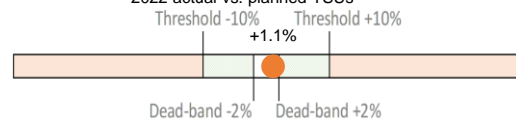
Actual real en route costs are -5.9% (-7.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Avinor (-5.9%, or -6.5 M€2017), the MET service provider (-23.7%, or -0.3 M€2017), the other ANSP (KJE, -31.9%, or -0.2 M€2017) and the NSA/EUROCONTROL (-1.0%, or -0.1 M€2017).

En route costs for the main ANSP (Avinor) at charging zone level

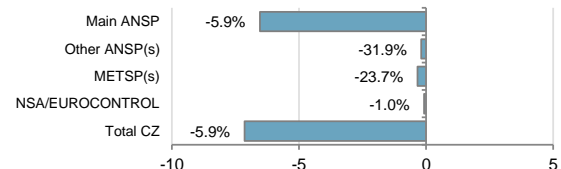
Significantly lower than planned en route costs in real terms for Avinor in 2022 (-5.9%, or -6.5 M€2017) result from the combination of:

- Significantly lower staff costs (-10.7%), mainly due to "the restructuring of the organization. The support staff costs are reduced as these recourses (HR, finance, legal, communication etc.) have been moved to the mother company Avinor AS. As a consequence, staff support costs are instead accounted as an intercompany purchase/other operating costs."
- Significantly higher other operating costs (+22.4%), due to the organizational restructuring (see above), higher energy prices and travel expenses after the end of Covid-19;
- Significantly lower depreciation (-11.3%), reported to be due to the overestimation of planned depreciation in the RP3 performance plan, which will be reimbursed to airspace users through the mechanism of costs exempted from cost sharing in 2024;
- Significantly higher cost of capital (+7.7%), "due to a higher share of the investments that is allocated to the en-route cost base than estimated in the determined costs"; and,
- Significantly higher deduction for VFR exempted flights (+64.2%).

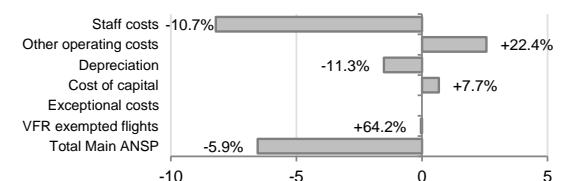
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



NORWAY: En route charging zone

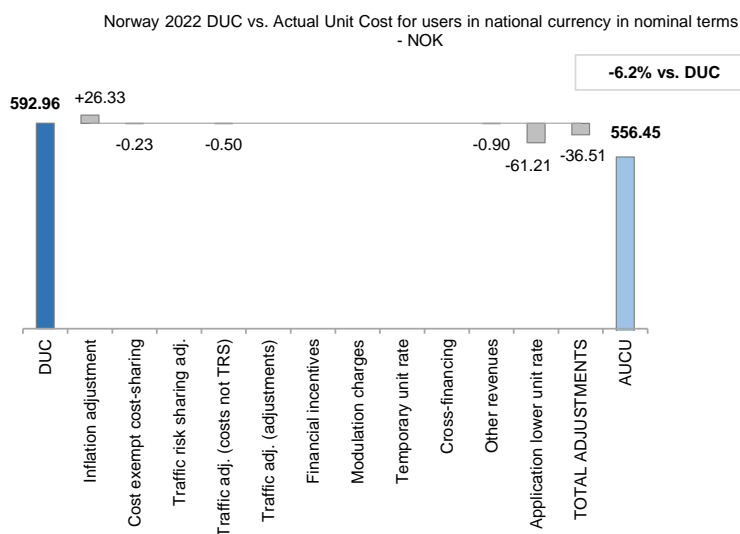
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | NOK/SU | €/SU |
|---------------------------------|---------------|--------------|
| Initial DUC charged | 592.96 | 58.73 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 592.96 | 58.73 |
| Inflation adjustment | 26.33 | 2.61 |
| Cost exempt from cost-sharing | -0.23 | -0.02 |
| Traffic risk sharing adjustment | 0.00 | 0.00 |
| Traffic adj. (costs not TRS) | -0.50 | -0.05 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -0.90 | -0.09 |
| Application of lower unit rate | -61.21 | -6.06 |
| Total adjustments | -36.51 | -3.62 |
| AUCU | 556.45 | 55.12 |
| AUCU vs. DUC | -6.2% | -6.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

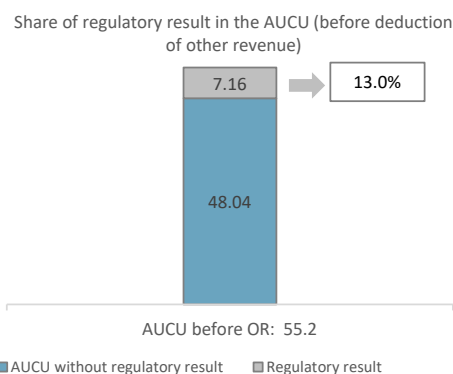
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | NOK '000 | € '000 | NOK/SU | €/SU |
|---|--|-------------|------------|--------------|--------------|
| by item | New and existing investments | -3 466 | -343 | -1.67 | -0.17 |
| | Competent authorities and qualified entities costs | -1 099 | -109 | -0.53 | -0.05 |
| | Eurocontrol costs | 311 | 31 | 0.15 | 0.01 |
| | Pension costs | 3 780 | 374 | 1.82 | 0.18 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -474 | -47 | -0.23 | -0.02 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | NOK '000 | € '000 | NOK/SU | €/SU |
|-----------------------------------|------------------|----------------|---------------|--------------|
| Avinor | 143 840 | 14 247 | 69.44 | 6.88 |
| KJE | 2 126 | 211 | 1.03 | 0.10 |
| METSP(s) | NOK '000 | € '000 | NOK/SU | €/SU |
| Norway MET | 3 689 | 365 | 1.78 | 0.18 |
| Total charging zone | 149 655 | 14 823 | 72.25 | 7.16 |
| Actual cost for users*** | 1 154 444 | 114 344 | 557.36 | 55.20 |
| Regulatory result (% AUCU) | 13.0% | 13.0% | 13.0% | 13.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (556.45 NOK or 55.12 €) is -6.2% lower than the nominal DUC (592.96 NOK or 58.73 €). The difference between these two figures (-36.51 NOK/SU or -3.62 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+26.33 NOK/SU or +2.61 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.23 NOK/SU or -0.02 €/SU);
- the deduction of the traffic adjustment (-0.50 NOK/SU or -0.05 €/SU) for the costs not subject to traffic risk sharing;
- the deduction of the other revenues (-0.90 NOK/SU or -0.09 €/SU); and
- application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-61.21 NOK/SU or -6.06 €/SU); and

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 13.0%.

NORWAY: En route main ANSP (Avinor)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 60% debt used in the RP3 PP. The actual gearing of Avinor should be reported.

Note 2: Ex-post RR should be seen in the light of the decision of the State of Norway to set the unit rate 2022 at a lower level (Art. 29(6)) than the one resulting from the RP3 PP. This decision generated losses of -127 MNOK for entities providing services in the en route charging zone (-106 MNOK for Avinor), which will be covered by the State of Norway.

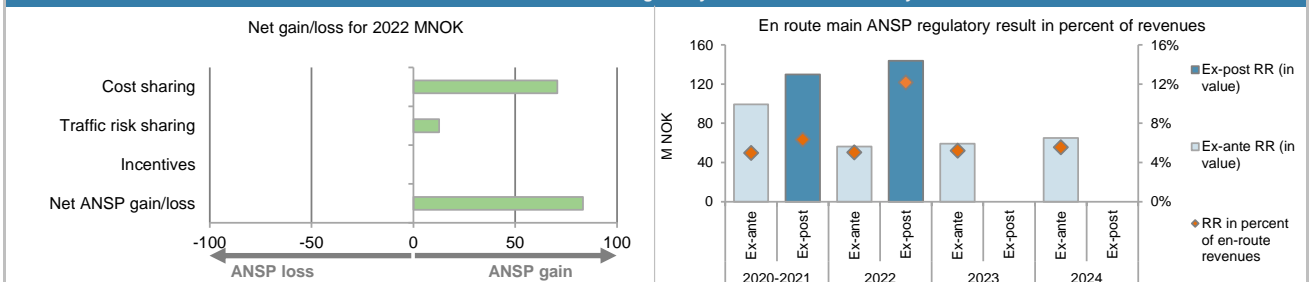
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -20 153 | 17 037 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 13 735 | 53 312 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 3 534 | 314 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -2 885 | 70 663 | | |
| Traffic risk sharing (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.5% | 1.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 2 001 581 | 1 117 358 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 29 424 | 12 585 | | |
| Incentives (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (NOK '000) | 26 539 | 83 248 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 2 612 | 8 245 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Avinor planned regulatory result (NOK '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|----------------|------------------|------------------|------------------|------------------|------------------|
| Total asset base | 1 054 273 | 1 378 474 | 2 432 746 | 1 378 597 | 1 449 380 | 1 590 886 |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | 40% | 40% |
| RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% |
| RoE (in value) | 43 014 | 56 242 | 99 256 | 56 247 | 59 135 | 64 908 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 43 014 | 56 242 | 99 256 | 56 247 | 59 135 | 64 908 |
| Revenue for the en route charging zone | 971 539 | 1 030 041 | 2 001 581 | 1 117 358 | 1 139 383 | 1 169 597 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.4% | 5.5% | 5.0% | 5.0% | 5.2% | 5.5% |
| Ex-ante RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% |
| Avinor actual regulatory result (NOK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 1 054 273 | 1 474 720 | 2 528 993 | 1 485 119 | | |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | | |
| RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | | |
| RoE (in value) | 43 014 | 60 169 | 103 183 | 60 593 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 26 539 | 26 539 | 83 248 | | |
| Ex-post regulatory result (+/-) for the en route charging zone (see Note 2) | 43 014 | 86 707 | 129 722 | 143 840 | | |
| Revenue for the en route charging zone | 971 539 | 1 076 733 | 2 048 273 | 1 183 569 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 2) | 4.4% | 8.1% | 6.3% | 12.2% | | |
| Ex-post RoE pre-tax rate (in %) | 10.2% | 14.7% | 12.8% | 24.2% | | |

13. Focus on the main ANSP regulatory result on en route activity



Avinor net gain on activity in the Norway en route charging zone in the year 2022

Avinor reported a net gain of +83.2 MNOK, as a combination of a gain of +70.7 MNOK arising from the cost sharing mechanism and a gain of +12.6 MNOK arising from the traffic risk sharing mechanism.

Avinor overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+83.2 MNOK) and the actual RoE (+60.6 MNOK) amounts to +143.8 MNOK (12.2% of the en route revenues). The resulting ex-post rate of return on equity is 24.2%. See also **Note 2** above.

NORWAY: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------|--------|------------|--------|--------|--------|
| KJE planned regulatory result (NOK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 3 827 | 6 000 | 9 827 | 6 092 | 6 184 | 6 276 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| KJE actual regulatory result (NOK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 215 | 215 | 2 126 | | |
| Revenue for the en route charging zone | 3 827 | 6 244 | 10 071 | 6 517 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 3.4% | 2.1% | 32.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Norway MET planned regulatory result (NOK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 10 239 | 14 431 | 24 670 | 14 724 | 15 019 | 15 320 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Norway MET actual regulatory result (NOK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 2 032 | 2 032 | 3 689 | | |
| Revenue for the en route charging zone | 10 239 | 14 671 | 24 910 | 15 585 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 13.9% | 8.2% | 23.7% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs planned regulatory result (NOK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 14 067 | 20 431 | 34 497 | 20 816 | 21 203 | 21 597 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (NOK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 2 247 | 2 247 | 5 814 | | |
| Revenue for the en route charging zone | 14 067 | 20 915 | 34 982 | 22 102 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 10.7% | 6.4% | 26.3% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Norway (KJE and Norway MET) amounts to a gain of +5.8 MNOK (26.3% of the en route revenues). It should be noted that KJE and Norway MET do not charge cost of capital. See also Note 2 in item 10. | | | | | | |

NORWAY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|-----------------|-----------------|--|-----------------|-----------------|
| <ul style="list-style-type: none"> Norway TCZ represents 3.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 4 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 2 Airports with more than 80,000 IFR mvmts: 2 National currency: NOK Exchange rates (1 EUR=) 2017: 9.32776 NOK 2022: 10.0962 NOK Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Norway: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal NOK) | 409 579 091 | 411 164 202 | 820 743 293 | 409 243 459 | 430 889 417 | 446 675 240 |
| Inflation % | 1.2% | 2.2% | | 2.0% | 2.0% | 2.0% |
| Inflation index (100 in 2017) | 106.6 | 109.0 | | 111.2 | 113.4 | 115.6 |
| Real terminal costs (NOK2017) | 388 508 806 | 382 988 070 | 771 496 875 | 374 977 851 | 388 790 356 | 396 881 896 |
| Total terminal service units | 134 330 | 139 240 | 273 570 | 204 803 | 240 423 | 258 338 |
| Real terminal DUC per service unit (NOK2017) | 2 892.20 | 2 750.56 | 2 820.11 | 1 830.92 | 1 617.11 | 1 536.29 |
| Real terminal DUC per service unit (€2017) | 310.06 | 294.88 | 302.34 | 196.29 | 173.37 | 164.70 |
| Norway: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal NOK) | 409 579 091 | 418 799 778 | 828 378 869 | 452 886 757 | | |
| Inflation % | 1.2% | 3.9% | | 6.2% | | |
| Inflation index (100 in 2017) | 106.6 | 110.8 | | 117.7 | | |
| Real terminal costs (NOK2017) | 388 508 806 | 385 000 690 | 773 509 496 | 394 992 626 | | |
| Total terminal service units | 134 330 | 136 797 | 271 127 | 220 067 | | |
| Real terminal AUC per service unit (NOK2017) | 2 892.20 | 2 814.39 | 2 852.94 | 1 794.88 | | |
| Real terminal AUC per service unit (€2017) | 310.06 | 301.72 | 305.85 | 192.42 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal NOK) | in value 0 | 7 635 576 | 7 635 576 | 43 643 298 | | |
| | in % - | +1.9% | +0.9% | +10.7% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.7 p.p. | | 4.2 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.8 p.p. | | 6.5 p.p. | | |
| Real terminal costs (NOK2017) | in value 0 | 2 012 620 | 2 012 620 | 20 014 775 | | |
| | in % - | +0.5% | +0.3% | +5.3% | | |
| Total terminal service units | in value 0 | -2 443 | -2 443 | 15 264 | | |
| | in % - | -1.8% | -0.9% | +7.5% | | |
| Real terminal unit cost per service unit (NOK2017) | in value 0.00 | 63.83 | 32.83 | -36.04 | | |
| | in % - | +2.3% | +1.2% | -2.0% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | 6.84 | 3.52 | -3.86 | | |
| | in % - | +2.3% | +1.2% | -2.0% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -2.0% (or -36.04 NOK2017, -3.86 €2017) lower than the planned DUC resulting from significantly higher than planned TNSUs (+7.5%) and higher than planned terminal costs in real terms (+5.3%, or +20.0 MNOK2017, +2.1 M€2017). It should be noted that actual inflation index in 2022 was +6.5 p.p. higher than planned.</p> <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+7.5%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. Hence the additional terminal revenue is shared between the ANSP and the airspace users, with the ANSP (Avinor) retaining an amount of +1.3 M€2017.</p> <p>Terminal costs by entity</p> <p>Actual real terminal costs are +5.3% (+2.1 M€2017) higher than planned. This is the result of higher costs for the main ANSP, Avinor (+5.1%, or +2.0 M€2017) and the MET service provider (+19.0%, or +0.2 M€2017) and lower costs for the NSA (-7.0%, or -0.01 M€2017).</p> <p>Terminal costs for the main ANSP (Avinor) at charging zone level</p> <p>Significantly higher than planned terminal costs in real terms for Avinor in 2022 (+5.1%, or +2.0 M€2017) result from the combination of:</p> <ul style="list-style-type: none"> - Significantly higher staff costs (+6.4%), the main driver being the significantly higher than planned traffic at Norwegian regulated airports; - Significantly higher other operating costs (+6.6%), resulting from higher than planned travel, consultancy and energy costs, and to a lesser extent, re-allocation between staff and other operating cost, linked with the organizational restructuring (see Box 4 for en route); - Lower depreciation (-2.2%), "due to the delayed capitalization of the new terminal radar at Oslo airport"; - Slightly higher cost of capital (+0.4%), due to a slightly higher asset base resulting from the higher investment level than foreseen in the performance plan for RP3; and, - Higher deduction for VFR exempted flights (+4.3%). | | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10% +7.5% Dead-band -2% Dead-band +2%</p> | | |
| <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP +5.1% Other ANSP(s) +19.0% METSP(s) -7.0% NSA -7.0% Total CZ +5.3%</p> | | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs +6.4% Other operating costs +6.6% Depreciation -2.2% Cost of capital +0.4% Exceptional costs +4.3% VFR exempted flights +4.3% Total Main ANSP +5.1%</p> | | |

NORWAY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

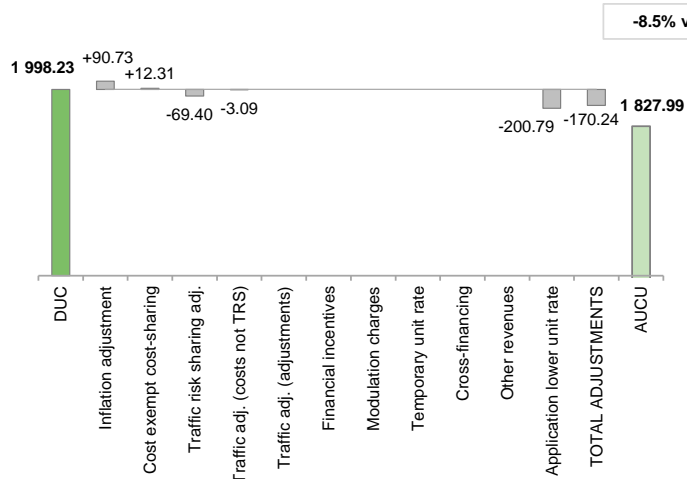
5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level

Norway 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- NOK



| Components of the AUCU | NOK/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 1 998.23 | 197.92 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 1 998.23 | 197.92 |
| Inflation adjustment | 90.73 | 8.99 |
| Cost exempt from cost-sharing | 12.31 | 1.22 |
| Traffic risk sharing adjustment | -69.40 | -6.87 |
| Traffic adj. (costs not TRS) | -3.09 | -0.31 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | 0.00 | 0.00 |
| Application of lower unit rate | -200.79 | -19.89 |
| Total adjustments | -170.24 | -16.86 |
| AUCU | 1 827.99 | 181.06 |
| AUCU vs. DUC | -8.5% | -8.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | NOK '000 | € '000 | NOK/SU | €/SU |
|---|--|--------------|------------|--------------|-------------|
| by item | New and existing investments | -660 | -65 | -3.00 | -0.30 |
| | Competent authorities and qualified entities costs | -60 | -6 | -0.27 | -0.03 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 3 430 | 340 | 15.59 | 1.54 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | 2 710 | 268 | 12.31 | 1.22 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | NOK '000 | € '000 | NOK/SU | €/SU |
|-----------------------------------|----------------|---------------|-----------------|---------------|
| Avinor | 17 198 | 1 703 | 78.15 | 7.74 |
| METSP(s) | NOK '000 | € '000 | NOK/SU | €/SU |
| Norway-MET | -1 659 | -164 | -7.54 | -0.75 |
| Total charging zone | 15 539 | 1 539 | 70.61 | 6.99 |
| Actual cost for users*** | 402 280 | 39 845 | 1 827.99 | 181.06 |
| Regulatory result (% AUCU) | 3.9% | 3.9% | 3.9% | 3.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (1 827.99 NOK or 181.06 €) is -8.5% lower than the nominal DUC (1 998.23 NOK or 197.92 €). The difference between these two figures (-170.24 NOK/SU or -16.86 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+90.73 NOK/SU or +8.99 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+12.31 NOK/SU or +1.22 €/SU);
- the deduction of the traffic risk sharing adjustments (-69.40 NOK/SU or -6.87 €/SU);
- the deduction of the traffic adjustment (-3.09 NOK/SU or -0.31 €/SU) for the costs not subject to traffic risk sharing; and
- application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-200.79 NOK/SU or -19.89 €/SU); and

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 3.9%.

NORWAY: Terminal main ANSP (Avinor)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 60% debt used in the RP3 PP. The actual gearing of Avinor should be reported.

Note 2: Ex-post RR should be seen in the light of the decision of the State of Norway to set the unit rate 2022 at a lower level (Art. 29(6)) than the one resulting from the RP3 PP. This decision generated losses of -44 MNOK for entities providing services in the terminal charging zone (-40 MNOK for Avinor), which will be covered by the State of Norway.

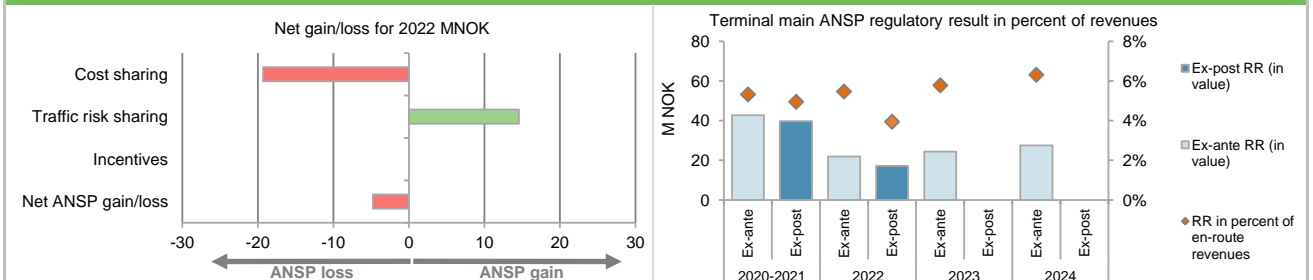
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -4 434 | -41 561 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 5 553 | 19 483 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 2 665 | 2 770 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 3 784 | -19 308 | | |
| Traffic risk sharing (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.9% | 7.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 803 043 | 400 118 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -7 171 | 14 548 | | |
| Incentives (NOK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (NOK '000) | -3 386 | -4 760 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | -333 | -471 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Avinor planned regulatory result (NOK '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 516 798 | 531 951 | 1 048 749 | 535 908 | 597 361 | 676 414 |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | 40% | 40% |
| RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% |
| RoE (in value) | 21 085 | 21 704 | 42 789 | 21 865 | 24 372 | 27 598 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 21 085 | 21 704 | 42 789 | 21 865 | 24 372 | 27 598 |
| Revenue for the terminal charging zone | 400 825 | 402 218 | 803 043 | 400 118 | 421 581 | 437 181 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.3% | 5.4% | 5.3% | 5.5% | 5.8% | 6.3% |
| Ex-ante RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% | 10.2% |
| Avinor actual regulatory result (NOK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 516 798 | 540 607 | 1 057 404 | 538 183 | | |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | | |
| RoE pre-tax rate (in %) | 10.2% | 10.2% | 10.2% | 10.2% | | |
| RoE (in value) | 21 085 | 22 057 | 43 142 | 21 958 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | -3 386 | -3 386 | -4 760 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 2) | 21 085 | 18 670 | 39 756 | 17 198 | | |
| Revenue for the terminal charging zone | 400 825 | 403 266 | 804 091 | 436 919 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 2) | 5.3% | 4.6% | 4.9% | 3.9% | | |
| Ex-post RoE pre-tax rate (in %) | 10.2% | 8.6% | 9.4% | 8.0% | | |

13. Focus on main ANSP regulatory result on terminal activity



Avinor net gain on activity in the Norway terminal charging zone in the year 2022

Avinor reported a net loss of -4.8 MNOK, as a combination of a loss of -19.3 MNOK arising from the cost sharing mechanism and a gain of +14.5 MNOK arising from the traffic risk sharing mechanism.

Avinor overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-4.8 MNOK) and the actual RoE (+22.0 MNOK) amounts to +17.2 MNOK (3.9% of the terminal revenues). The resulting ex-post rate of return on equity is 8.0%. See also **Note 2** above.

NORWAY: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|--------|------------|--------|-------|-------|
| Norway-MET planned regulatory result (NOK '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 7 930 | 8 104 | 16 034 | 8 266 | 8 431 | 8 600 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Norway-MET actual regulatory result (NOK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | -3 114 | -3 114 | -1 659 | | |
| Revenue for the terminal charging zone | 7 930 | 8 239 | 16 168 | 8 750 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -37.8% | -19.3% | -19.0% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Norway (Norway MET) corresponds to a loss of -1.7 MNOK (-19.0% of the corresponding terminal revenues). It should be noted that Norway MET does not charge cost of capital. See also Note 2 in item 10. | | | | | | |

NORWAY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|------------------|---------------|----------------|------------------|---------------|-------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Norway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Norway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Norway: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 108 590 432 | 114 447 221 | 223 037 653 | 120 172 502 | 120 678 722 | 121 855 615 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 41 650 815 | 41 058 954 | 82 709 769 | 40 200 204 | 41 680 999 | 42 548 468 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 150 241 247 | 155 506 175 | 305 747 422 | 160 372 706 | 162 359 721 | 164 404 083 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 72.3% | 73.6% | 72.9% | 74.9% | 74.3% | 74.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Norway: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 108 590 432 | 113 664 145 | 222 254 578 | 113 027 950 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 41 650 815 | 41 274 721 | 82 925 536 | 42 345 925 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 150 241 247 | 154 938 866 | 305 180 113 | 155 373 875 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 72.3% | 73.4% | 72.8% | 72.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in value | 0 | -567 309 | -567 309 | -4 998 830 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in % | 0.0% | -0.4% | -0.2% | -3.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.2 p.p. | -0.1 p.p. | -2.2 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>72%</td> <td>28%</td> </tr> <tr> <td>Actual</td> <td>72%</td> <td>28%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>74%</td> <td>26%</td> </tr> <tr> <td>Actual</td> <td>73%</td> <td>27%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>73%</td> <td>27%</td> </tr> <tr> <td>Actual</td> <td>73%</td> <td>27%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>75%</td> <td>25%</td> </tr> <tr> <td>Actual</td> <td>73%</td> <td>27%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>74%</td> <td>26%</td> </tr> <tr> <td>Actual</td> <td>74%</td> <td>26%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>74%</td> <td>26%</td> </tr> <tr> <td>Actual</td> <td>74%</td> <td>26%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 72% | 28% | Actual | 72% | 28% | 2021 | Determined | 74% | 26% | Actual | 73% | 27% | 2020-2021 | Determined | 73% | 27% | Actual | 73% | 27% | 2022 | Determined | 75% | 25% | Actual | 73% | 27% | 2023 | Determined | 74% | 26% | Actual | 74% | 26% | 2024 | Determined | 74% | 26% | Actual | 74% | 26% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 72% | 28% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 74% | 26% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 73% | 27% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 73% | 27% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 73% | 27% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 75% | 25% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 73% | 27% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 74% | 26% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 74% | 26% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 74% | 26% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 74% | 26% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -3.1% (-5.0 M€2017) lower than planned, as en route costs are lower than planned by -7.1 M€2017 and terminal costs are higher than planned by +2.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (72.7%) is lower than planned in the PP for 2022 (74.9%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In NOK '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Avinor | 78 112 | 1 517 476 | 5.1% | 161 038 | 1 620 488 | 9.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KJE | 0 | 6 092 | 0.0% | 2 126 | 6 517 | 32.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Norway MET | 0 | 22 990 | 0.0% | 2 029 | 24 335 | 8.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 78 112 | 1 546 557 | 5.1% | 165 194 | 1 651 339 | 10.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Norway covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +165.2 MNOK (+149.7 MNOK for en route and +15.5 MNOK for terminal), corresponding to 10.0% of gate-to-gate ANS revenues, compared to 5.1% included in the performance plan for RP3. See also Note 2 in items 10.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Norway gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Norway gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>5.1%</td> </tr> <tr> <td>Ex-post</td> <td>10.0%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 5.1% | Ex-post | 10.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 5.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 10.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Annual Monitoring Report 2022

Local level view

Poland

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POLAND

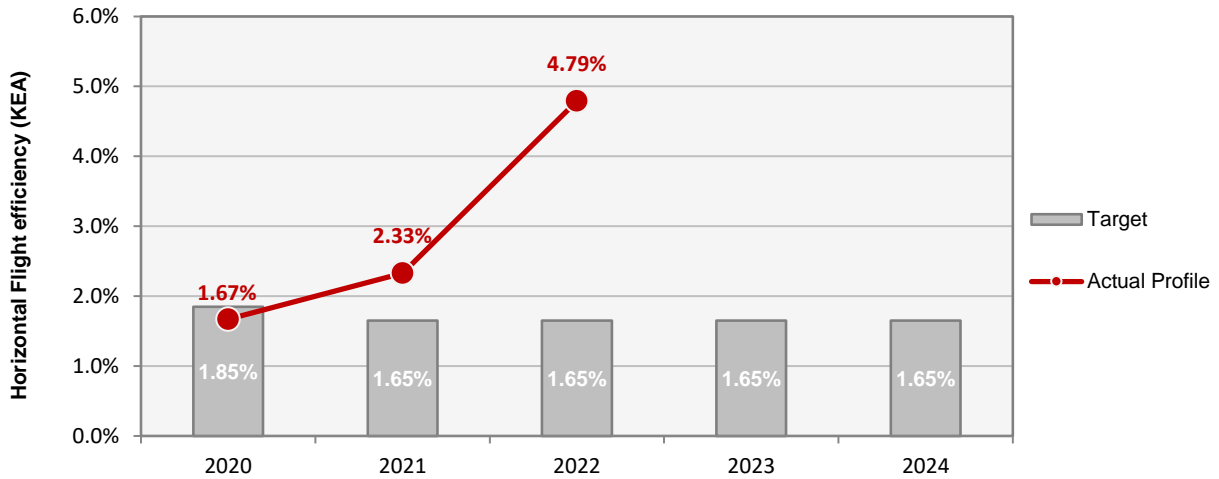
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| PANSA | 100 | D | D | D | D | D |
| Port Lotniczy Bydgoszcz S.A. | 77 | C | C | C | C | C |
| Warmia i Mazury sp. z o.o. | 79 | C | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of PANSA meet or exceed the RP3 target level. The ANSP has already achieved the maximum level of maturity.</p> <p>Four out of five EoSM components of Port Lotniczy Bydgoszcz meet the RP3 target level with only "Safety Risk Management" is below the target. Improvements in "Safety Risk Management" are still required during RP3 to achieve RP3 targets.</p> <p>Compared with 2021, in 2022 the "Safety Risk Management" component of Warmia i Mazury was improved and met the target maturity level. The ANSP achieved the RP3 target level for all five EoSM components.</p> | | | | | | |

POLAND

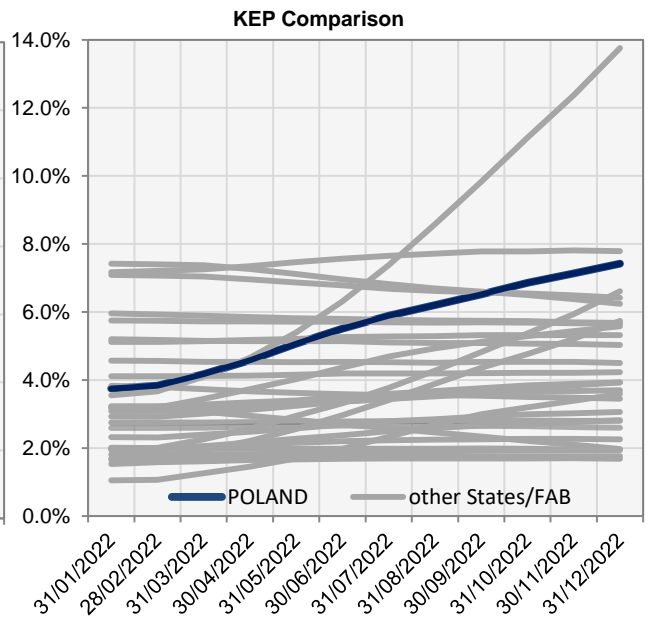
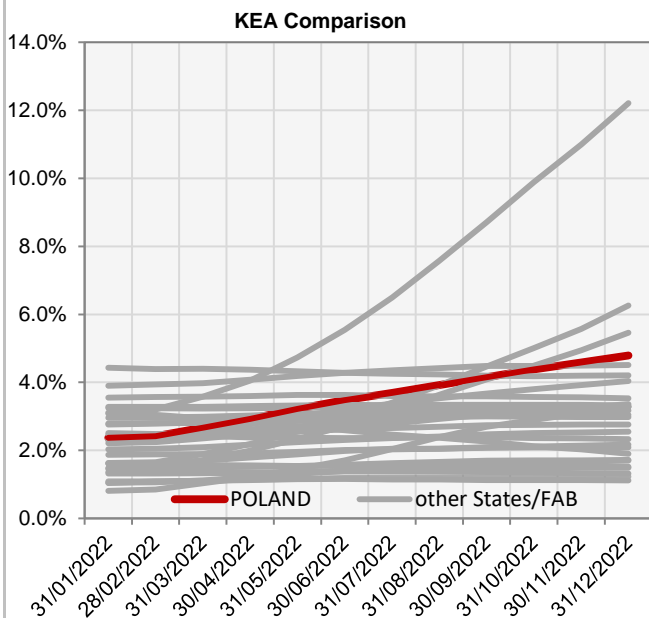
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.85% | 1.65% | 1.65% | 1.65% | 1.65% |
| Actual performance | 1.67% | 2.33% | 4.79% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.37% | 2.42% | 2.67% | 2.92% | 3.22% | 3.48% | 3.69% | 3.92% | 4.15% | 4.38% | 4.58% | 4.79% |
| KEP | 3.75% | 3.83% | 4.17% | 4.58% | 5.07% | 5.51% | 5.89% | 6.20% | 6.52% | 6.86% | 7.13% | 7.42% |
| KES | 2.82% | 2.87% | 3.19% | 3.60% | 4.10% | 4.60% | 5.03% | 5.41% | 5.79% | 6.18% | 6.51% | 6.86% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

For Poland the scope of the RP3 monitoring comprises a total of 15 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only the main airport Warsaw (EPWA) must be monitored for additional taxi-out and ASMA times.

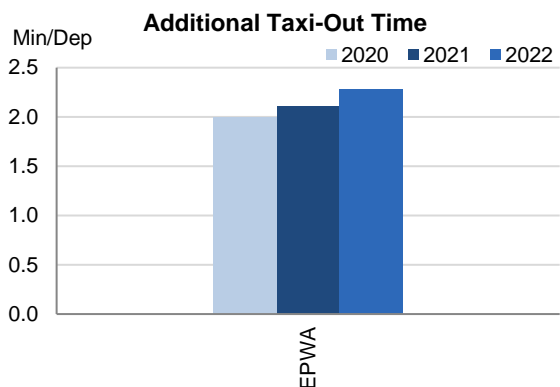
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.

Traffic at the ensemble of these 15 airports in 2022, regardless of an increase of 61% with respect to 2021, was still 14 % lower than in 2019.

Additional taxi-out times are similar to last year's, while additional ASMA times have deteriorated.

The shares of CDO flights are in general (slightly) lower than in 2021, but almost all still above the RP3 overall value.

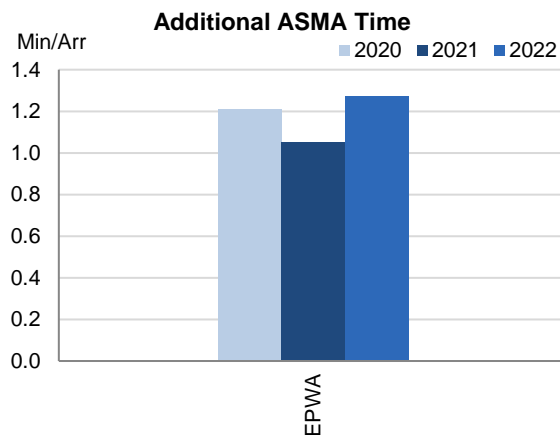
2. Additional Taxi-Out Time



Additional taxi-out times at Warsaw (EPWA; 2019: 3.43 min/dep.; 2020: 1.99 min/dep.; 2021: 2.11 min/dep.; 2022: 2.28 min/dep.) slightly increased once more, although remained under the SES average for 2022 (2.52 min/dep.)

For information on measures implemented over 2020-2021, the Polish monitoring report refers to the respective Annual Monitoring Reports. No other measured for 2022 is mentioned.

3. Additional ASMA Time

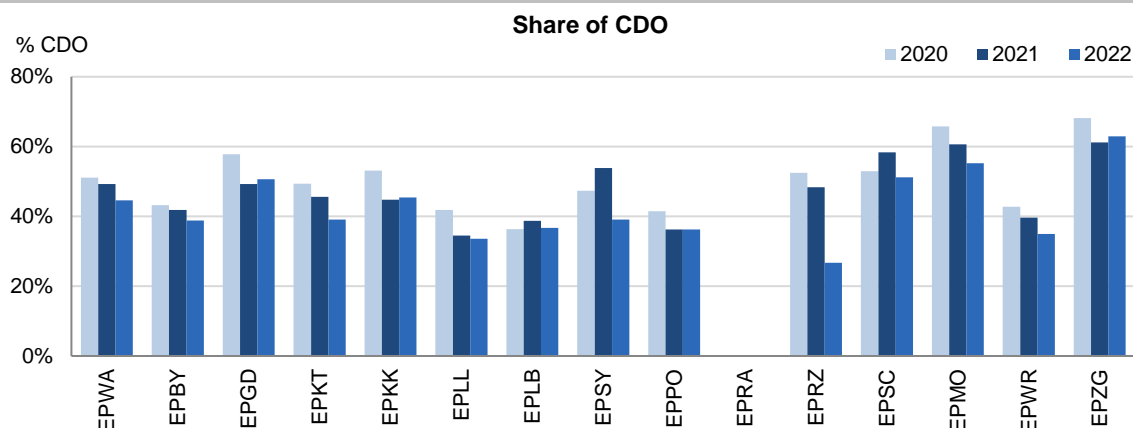


Additional times in the terminal airspace of Warsaw (EPWA; 2019: 2.09 min/arr.; 2020: 1.21 min/arr.; 2021: 1.05 min/arr.; 2022: 1.27 min/arr.) in 2022 increased exceeding the SES average of 1.06 min/arr.

For information on measures implemented over 2020-2021, the Polish monitoring report refers to the respective Annual Monitoring Reports. For 2022, the monitoring report mentions the following implementation:

RNAV 1 in TMA Operations – RNAV1 SID and STAR is implemented – 1Q 2022

4. Share of arrivals applying CDO



All airports have shares of CDO flights (well) above the overall RP3 value in 2022 (29.0%) except for Rzeszów-Jasionka (EPRZ - 26.7%).

Gdańsk im. Lecha Wałęsy, Kraków-Balice, Poznań-Ławica and Zielona Góra-Babimost had (slightly) higher values than in 2021 (EPGD: +1.3 percentage points; EPKK: +0.7 percentage points; EPPO: +0.1 percentage points; EPZG: + 1.8 percentage points) while the values for the other airports decreased (between -21.7 and -1.0 percentage points).

According to the Polish monitoring report: *For information on measures implemented over 2020-2021 please see the respective Annual Monitoring Reports.*

RNP 1 in TMA Operations - RNP-1 are already implemented for EPBY, EPRA, EPRZ, EPLL, EPLB, EPSY, EPSC (DEP&ARR) EPZG (ARR).

PANSA operational procedures allows the CCO/CDO operations in maximumal possible extent, ATCOs are trained for this kind of operations as one of the work-standards being regularly monitored and assessed.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|------------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Chopina w Warszawie-EPWA | 1.99 | 2.11 | 2.28 | | | 1.21 | 1.05 | 1.27 | | | 51% | 49% | 45% | | |
| Bydgoszcz-EPBY | - | - | - | | | - | - | - | | | 43% | 42% | 39% | | |
| Gdańsk im. Lecha Wałęsy-EPGD | - | - | - | | | - | - | - | | | 58% | 49% | 51% | | |
| Katowice-Pyrzowice-EPKT | - | - | - | | | - | - | - | | | 49% | 46% | 39% | | |
| Kraków-Balice-EPKK | - | - | - | | | - | - | - | | | 53% | 45% | 45% | | |
| Łódź-EPLL | - | - | - | | | - | - | - | | | 42% | 35% | 34% | | |
| Lublin-EPLB | - | - | - | | | - | - | - | | | 36% | 39% | 37% | | |
| Olsztyn-Mazury-EPSY | - | - | - | | | - | - | - | | | 47% | 54% | 39% | | |
| Poznań-Ławica-EPPO | - | - | - | | | - | - | - | | | 42% | 36% | 36% | | |
| Radom-Sadków-EPRA | - | - | - | | | - | - | - | | | n/a | n/a | n/a | | |
| Rzeszów-Jasionka-EPRZ | - | - | - | | | - | - | - | | | 52% | 48% | 27% | | |
| Szczecin-Goleniów-EPSC | - | - | - | | | - | - | - | | | 53% | 58% | 51% | | |
| Warszawa/Modlin-EPMO | - | - | - | | | - | - | - | | | 66% | 61% | 55% | | |
| Wrocław-Strachowice-EPWR | - | - | - | | | - | - | - | | | 43% | 40% | 35% | | |
| Zielona Góra-Babimost-EPZG | - | - | - | | | - | - | - | | | 68% | 61% | 63% | | |

POLAND

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Poland | 36% | 36% | 40% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Warsaw | 36% | | 40% | | |

Initiatives implemented or planned to improve PI#6

On strategic airspace management level, all significant exercises and permanent areas are evaluated and analysed taking into account historic civil traffic flows and civil traffic predictions.

The impact, depending on the scale, is consulted with the key stakeholders including neighbouring states, aerodrome operators, aircraft operators, ATS, military, EUROCONTROL NM.

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the time period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods.

The locations of the activities are designed not to affect the main traffic flows, ATC routes, DCTs and POLFRA connectivity. Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of the day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.

When the areas exceed the set scale they are always divided into smaller modules/segments. Each of these segments is designed in order to fit particular activities without necessity to activate the whole area to perform specific assignments. The shape of these segments is always aligned with main civil traffic flows to minimize the horizontal flight inefficiency.

Further measures include:

- update of local ASM system/radar data added to visualize military activity in segregated areas. As a result, update of coordination procedures to reduce the time required to release segregated areas back to civil traffic.

- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures (NPZ management) taking into account forecasted demand of civil traffic on segregated airspace allocation in time on the day of the operations.

Annual review of the efficiency of airspace utilization is conducted.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Poland | 60% | 82% | 81% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Warsaw | 60% | 82% | 81% | | |

Initiatives implemented or planned to improve PI#7

The available flight planning options are constantly updated to allow Aircraft Operator (AO) to plan the most horizontally effective trajectory, even when the areas are active. Except ATS network and DCTs, the AOs have the possibility to plan in the Free Route Airspace environment (POLFRA). Implementation of cross-border free route airspace operations within Lithuanian and Polish airspace (BALTIC FRA) and the cross border operations between BALTIC FRA and South East Europe FRA were implemented in 1Q 2022 which could further increase the planning opportunities.

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the time period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods.

Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of the day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.

Special procedures are prepared including dynamic change of level or segment and creation of new temporary routings for avoidance of military traffic.

Further measures include:

- update of local ASM system/radar data added to visualize military activity in segregated areas. As a result, update of coordination procedures to reduce the time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures (NPZ management) taking into account forecasted demand of civil traffic on segregated airspace allocation in time on the day of the operations.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Poland | 121% | 130% | 126% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Warsaw | 121% | 130% | 126% | | |

Initiatives implemented or planned to improve PI#8

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods.

Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of the day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.

Special procedures are prepared including dynamic change of level or area segment.

Further measures include:

- update of local ASM system/radar data added to visualize military activity in segregated areas. As a result, update of coordination procedures to reduce the time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures (NPZ management) taking into account forecasted demand of civil traffic on segregated airspace allocation in time on the day of the operations.

POLAND

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | |
|--------------------------------|------|------|------|------|------|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| National Target | 0.30 | 0.07 | 0.12 | 0.12 | 0.12 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process, and the exclusion of delays due to 'exceptional events'. |
| Actual performance | 0.00 | 0.07 | 1.09 | | | |

NSA's assessment of capacity performance

The results in the CAPACITY KPA at the end of 2022 year for Poland (PANSA) was 1,30 minutes/flight with a target of 0,12 minutes/flight. [Corrected to 1,09 minutes per flight after exclusion of delays due to 'exceptional events'.]

The aggression of the Russian Federation against Ukraine has a significant impact on the air navigation services in Poland due to the introduction of a number of restrictions in FIR Warszawa. A direct consequence of this situation are significant delays in Polish airspace, especially the en route delays rate.

The main reasons for the imposed regulations related to the war in Ukraine were:

- increased air traffic in the sectors affected by the regulations (mainly in the south-eastern part of the Warsaw FIR), related to the need to bypass the space closed for traffic in Ukraine and restrictions on operating in the space of Belarus,
- space reservations by the military,
- requirements of the new operational situation resulting from the ongoing war beyond Poland's eastern border and the growing intensity of military air operations in FIR Warszawa. The need to reduce area capacities for all sectors and reduce the occupancy value for sectors NL, JK, JKL and CL,
- additionally, the redirection of traffic flows from the border sectors with Ukraine and Belarus (sector R) resulted in increased traffic volume and complexity in the JK sector, which meant that most regulations were imposed on this sector,
- due to the reservation of space by the military for 24 hours (tactically the reservation times were changed), some of the regulations were assumed pre-tactically.

In Polish CAA opinion all above mentioned ATFM regulations/actions taken by PANSA to mitigate negative impact of the external, political situation on the traffic in Poland fulfil the definition of the exceptional events as defined in article 2 point 9 of the Commission Implementing Regulation (EU) 2019/317. However it was impossible to significantly reduce ATFM delays related to the exceptional events.

As a consequence, Poland wished to exclude the delays related to the war from the 2022 Monitoring Report.

The Polish National Supervisory Authority (NSA) proposed that en-route ATFM delays attributable to extraordinary events marked with the code "O" should not be taken into account for the en-route delay. EC did not accept this solution and presented its legal analysis .

The ATCO's industrial action in April and May 2022 had a significant impact on the KPA Capacity. Actions taken by both trade unions and PANSA management resulted in the ceasing of the crisis, but the event resulted in increasing of delays.

Monitoring process for capacity performance

The fulfilment of the Polish Performance plan was regularly monitored by the NSA. The process of continuous oversight of all ANSPs was conducted based on the Regulation (EU) 2019/317) and Regulation 2017/373.

The monitoring activities included analysis of the ANSP's business and annual plans and their consistency with the Performance Plan for RP3. They were covering, among the others, the following areas:- investment plan (CAPEX) execution:

- execution of planned costs
- use of public funding, including EU funding
- execution of employment plan
- **execution of staff training plan**
- **ATCO productivity**
- **implementation of major projects aimed at increasing capacity and enhancing flight efficiency**
- implementation of corrective measures in the safety area.

The monitoring of progress in achieving performance targets set in Performance Plan for RP3 was performed also by dedicated Polish NSA inspectors during routine inspections.

Capacity Planning

Capacity planning over 2022 focused on mid to long-term planning based on STATFOR forecasts, NM data, PANSA simulations and internal recovery plan prepared by PANSA as well as short term planning (up to 4-6 weeks) under the NOP rolling planning initiative coordinated by the Network Manager. Capacity planning, especially over 1H 2022, was challenging due to the consequences of the war in Ukraine and sanctions for air traffic flows in the Polish airspace and related uncertainty as well as military activity resulting from the geopolitical developments.

Similarly, as over 2020-2021, 2022 rostering at PANSA still had to consider implementation of measures aimed at limiting the risk of virus spread among ATCOs.

Despite the war and challenges related thereto, PANSA continued to implement initiatives aimed at improving capacity in FIR Warszawa to meet challenges related to traffic increase after the crisis as well as potential changes in traffic flows.

These included, among others, the following:

- continuation of new ATCOs training (continued training process for trainees employed before the pandemic outbreak and new recruitment process for ATCO trainees, which started in January 2022),
- continued adaptation of the air traffic management system (Pegasus_21) to operational needs and modernisation of the ATM system as well as works – under international ITEC cooperation – on new ATM system to be implemented in the future,
- development of tools supporting ATCOs and flow management optimisation (including implementation and use of Traffic Complexity Tool and update of Common Airspace Tool system),
- continued investments in infrastructure (CNS) and technology allowing for optimisation of airspace structures and optimisation of coverage in the Polish airspace as well as supporting contingency,
- preparations for implementation of the first stage of airspace three-layer vertical split (south-eastern part of the Polish airspace – JR sectors – operationally deployed in April 2023),
- reorganisation of Kraków TMA – new sectors, new SID/STAR procedures (planned to be operationally deployed in 2023),
- continued harmonisation of GAT and OAT traffic leading to implementation of EUROAT,
- refreshment trainings for current ATCOs to maintain their competence following the 2020-2021 significant traffic drop,
- continuation of flexible rostering,
- evolving ACC sector configurations and management to cope with updated traffic forecasts,
- continued FMP dynamic management and ATFCM techniques including STAM,
- improvement of comprehensive airspace management.

Following the observed negative impact of the war in Ukraine and related increased military activity on capacity, PANSA also implemented solutions aimed at minimising this negative impact, especially in the south-eastern part of the Polish airspace: level change of military areas, RAD and PTR to change EPRZ traffic profiles, new sector configurations in JKZR part since 17.06.2022, coordination with LZBB to unblock PODAN and KEFIR border points (above FL315).

PANSA implemented RAD measures and EU Restrictions that were aimed to reduce ATFCM delays within EPWW FIR sectors with limited capacity due to additional military activity.

PANSA also actively contributed to the implementation of Summer 2023 NM measures aimed at limiting delays in the mostly congested parts of the Network.

Plans for the following years of RP3 include continuation of the above listed initiatives, among others:

- further works on reorganisation of ACC Warszawa sector configuration – three layer vertical division – further stages (planned to be operationally deployed in RP4),
- continuation of training process for new ATCOs (new recruitments), with initiatives supporting increased efficiency of the recruitment and training processes,
- adaptation of the air traffic management system to operational needs and modernisation of the ATM System,
- continued investments in infrastructure (CNS) and technology allowing for optimisation of airspace structures and optimisation of coverage in the Polish airspace as well as supporting resilience, scalability and flexibility of service provision

| ATCO in OPS (FTE) | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| Warsaw ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 173 | 183 | 189 | 194 | |
| Actual | 175 | 172 | 172 | 178 | | | |
| <p>Number of additional ATCOs in OPS who have started working in the OPS room (FTEs): 13 consists of: 9 - new licenses 4 - shifts to PRU1 (ATCOs in OPS) category from other PRU categories</p> <p>Number of ATCOs in OPS who have stopped working in the OPS room (FTEs): 6,75 consists of: 3 – termination of the contract 3 – shifts from PRU1 (ATCOs in OPS) category to other PRU categories 0,75 – balance of increase and reduction of working time on the request of employee</p> | | | | | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| <p>Two main elements impacted the delay indicator over 2022 that resulted in not meeting the target:</p> <ol style="list-style-type: none"> 1. military aggression of the Russian Federation on Ukraine, 2. social tensions at PANSAs. <p>On point 1 – the Russian aggression against Ukraine resulted in the introduction of restrictions in FIR Warszawa (specifically, along Poland's eastern border), impacting availability of the airspace for civil traffic. Much wider military activities are visible, also linked to increased the number of NATO flights in eastern part of the Polish airspace. The significant portion of this part of airspace is reserved for military flights (performed H24) thus unavailable for civil traffic. An immediate consequence of the limited capacity (caused directly by the political circumstances) was significant increase of delays in the Polish airspace. The impact can be especially visible during the period of higher traffic levels (when the traffic demand exceeds the available capacity in the parts of FIR Warszawa which were impacted by the restrictions).</p> <p>On point 2 – following changes to remuneration regulations at PANSAs introduced at the end of 2021 and in 2022, social tensions were visible at ACC and some APP units, which impacted the delays. New PANSAs Management was running intensive negotiation process with the ATCO Trade Union to solve the issues.</p> <p>The war in Ukraine and related geopolitical situation is expected to impact capacity indicator for Poland also in the subsequent years of RP3.</p> <p>The situation will be deeply analysed with close cooperation with PANSAs.</p> | | | | | | | |

Additional information regarding Russia's war of aggression in Ukraine.

The biggest impact on en-route capacity performance for Poland is linked with increased military activity and related limited capacity available to civil traffic. As indicated above, much wider military activities in the Polish airspace are visible, also linked to increased number of NATO flights in eastern part of the Polish airspace.

Significant portions of this part of airspace are reserved for military flights (performed H24), thus unavailable for civil traffic. At the same time, following closure of Ukrainian airspace and very limited possible use of Belarusian airspace, additional traffic flows are observed on the north-southern axis along the eastern Poland's border. The combination of limited airspace available and traffic demand leads to increase in delays. The impact can be especially visible during the period of higher traffic levels (when the traffic demand exceeds the available capacity in the parts of FIR Warszawa which were impacted by the restrictions).

Following discussion with the Network Manager, since mid-March 2022 delays caused by the war in Ukraine have been marked as "O" (other) and thus also included in the data published by the Network Manager. Delays marked "O" are only related to the war in Ukraine and do not take into account other causes of delays. At the beginning of the war, before the code "O" started to be used, they were reported under the code "M". The delays coded "O" amounted to 419 394 minutes, while those coded "M" over February-March amounted to 5 712 minutes.

In Poland's opinion, these above mentioned delays (all delays reported under "O" as well as delays reported under "M" which were linked to the war) meet the conditions for delays resulting from exceptional events as defined in article 2 point 9 of the Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013, and therefore shall be excluded from the calculation of the route delay indicator for PANSAs in 2022.

Following the outbreak of the war, the EACCC was activated by the Network Manager. Although, for practical reasons, the EACCC was subsequently deactivated in May 2022, the circumstances triggering its activation still pertain and haven't changed.

As indicated above:

- PANSAs implemented RAD measures and EU Restrictions that were aimed to reduce ATFM delays within EPWW FIR sectors with limited capacity due to additional military activity.
- PANSAs also implemented solutions aimed at minimising this negative impact, especially in the south-eastern part of the Polish airspace: level change of military areas, RAD and PTR to change EPRZ traffic profiles, new sector configurations in JKZR part since 17.06.2022, coordination with LZBB to unblock PODAN and KEFIR border points (above FL315).
- Further improvements in the sectorisation in the south-eastern part of the Polish airspace were made through introduction of three-layer vertical split (first stage).

Summary of capacity performance

Poland experienced an increase in traffic from 473k flights in 2021 to 627k flights in 2022. However, traffic levels were still substantially below the 912k flights in 2019.

In 2022, Poland had 800k minutes of en route ATFM delay - 52% attributed to 'Other' (explained above as due to Ukraine war situation); 37% attributed to ATC staffing.

There were an additional 10k minutes of en route ATFM delay originating in the Warszawa ACC that were re-attributed to DFS (9k) and DSNAs (1k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.

A further 131k minutes of ATFM delay due to 'exceptional events' were excluded after consultation with the European Commission and the Network Manager, giving a final value of 669k minutes of en route ATFM delay.

POLAND

CAPACITY - Airports

1. Overview

For Poland the scope of the RP3 monitoring comprises a total of 15 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only the main airport Warsaw (EPWA) must be monitored for the pre-departure delay indicators.

The Airport Operator Data Flow, necessary for the monitoring of the pre-departure delays, is correctly established where required and the monitoring of these indicators can be performed.

Traffic at the ensemble of these 15 airports in 2022, regardless of an increase of 61% with respect to 2021, was still 14 % lower than in 2019.

EPRA has been closed for civil traffic due to airport extension project.

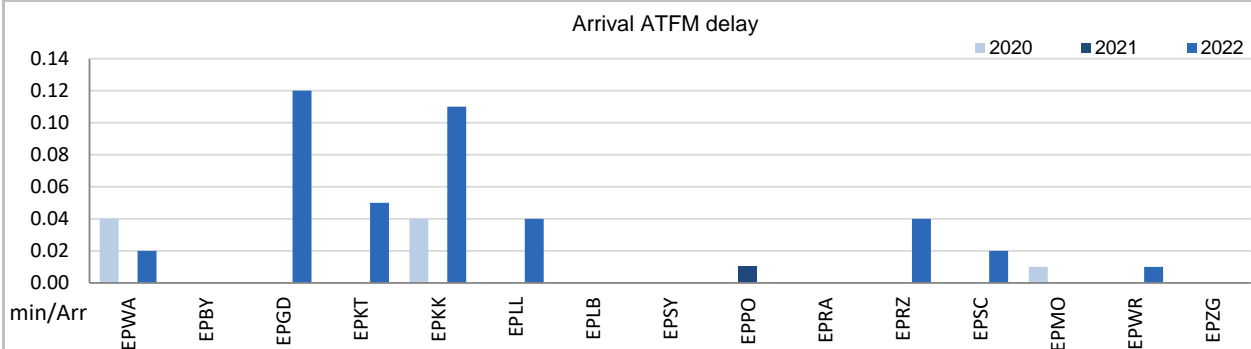
Average arrival ATFM delays in 2022 was 0.04 min/arr, compared to 0.00 min/arr in 2021.

ATFM slot adherence has improved (2022: 96.5%; 2021: 96.2%).

The Polish monitoring report mentions these measures planned to be implemented at Warsaw (EPWA) in 2022+:

- Traffic Complexity Tool (2022),
- A-SMGCS (2024).

2. Arrival ATFM Delay



Arrival ATFM delays in 2021 disappeared in 2021 at Polish airports. In 2022 some of these airports registered some delays, increasing the national average from 0.0 min/arr to 0.04 min/arr.

Warsaw registered very low delays (EPWA: 2022: 0.02 min/arr). Gdansk and Krakow observed the highest delays in average (EPGD: 2022: 0.12 min/arr; EPKK: 2022: 0.11 min/arr.) even if still low.

32% of the arrival ATFM delays in Poland were attributed to ATC Staffing issues (mostly at Gdansk) followed by 24% related to ATC Capacity and 17% due to Aerodrome Capacity issues (mostly at Krakow) and Weather (15%).

Regarding the impact of the war in Ukraine, the Polish monitoring report mentions: *The outbreak of the war in Ukraine impacted traffic to/from Rzeszów-Jasionka airport, which became kind of a transportation hub for Ukraine. As a consequence, significant traffic increase at this airport, as compared to both previous years as well as the assumptions underlying the adopted RP3 PP, was observed.*

Increased military activity in south-eastern part of Poland, following the outbreak of the war, had some impact on operations in Rzeszów airport over the period March-May 2022.

Below are the airport arrival ATFM delays for Rzeszów airport over March-May:

MAR: 100 minutes (codes: G, M),

APR: 24 minutes (code: G),

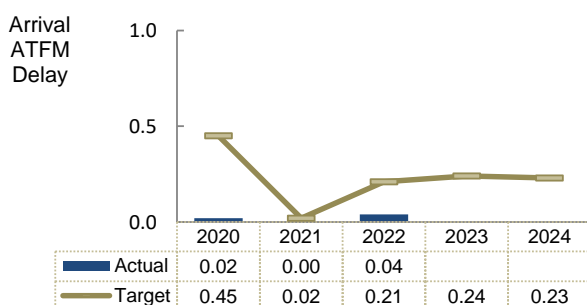
MAY: 153 minutes (code: C).

Over March-May period, the increased military activity in Eastern Poland had an impact on flights to/from Rzeszów airport.

Following introduction of RAD restrictions that aimed to improve the situation, traffic to/from Rzeszów airport was excluded from JKL sector, allowing for undisturbed traffic to/from that airport.

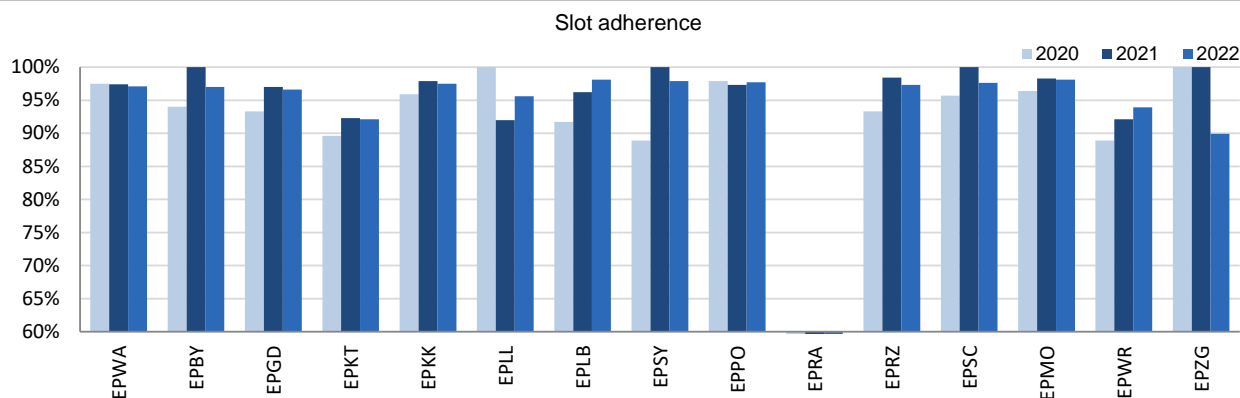
For more information, see Annex 1 of the MR

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Polish airports showed adherence between 89.9% and 98.1% and Warsaw (EPWA) reached 97.1%. The national average was 96.5%, slightly better than the previous year (96.2%). With regard to the 3.5% of flights that did not adhere, 1.7% was early and 1.8% was late.

According to the Polish monitoring report: *Performance achieved in 2022 should not be compared to previous years. Due to COVID-19 pandemic and Russia's war of aggression against Ukraine and related traffic drop, data for 2022 is not reliable and not comparable to periods before.*

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Warsaw. The quality of the airport data reported by EPWA has improved after the COVID crisis and it is possible again to calculate this indicator.

The annual value for 2022 is very similar to the observed in 2021 and lower than pre-COVID (EPWA: 2019: 0.87 min/dep; 2021: 0.59 min/dep; 2022: 0.6 min/dep)

6. All Causes Pre-departure Delay

Warsaw is the only Polish airport subject to the monitoring of this indicator.

The total (all causes) delay in the actual off block time at Warsaw significantly increased in 2022 (EPWA: 2020: 9.32 min/dep.; 2021: 12.61 min/dep.; 2022: 21.26 min/dep.). The highest delays per flight were observed in Summer, averaging more than 30 min/dep.

According to the Polish monitoring report: *Performance achieved in 2022 should not be compared to previous years. Due to COVID-19 pandemic and Russia's war of aggression against Ukraine and related traffic drop, data for 2022 is not reliable and not comparable to periods before.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|------------------------------|------------------------|------|------|------|------|----------------|--------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Chopin w Warszawie-EPWA | 0.04 | 0 | 0.02 | | | 97.5% | 97.4% | 97.1% | | | n/a | 0.59 | 0.60 | | | 9.32 | 12.61 | 21.26 | | |
| Bydgoszcz-EPBY | 0 | 0 | 0 | | | 94.0% | 100.0% | 97.0% | | | - | - | - | | | - | - | - | | |
| Gdańsk im. Lecha Wałęsy-EPGD | 0 | 0 | 0.12 | | | 93.3% | 97.0% | 96.6% | | | - | - | - | | | - | - | - | | |
| Katowice-Pyrzowice-EPKT | 0 | 0 | 0.05 | | | 89.6% | 92.3% | 92.1% | | | - | - | - | | | - | - | - | | |
| Kraków-Balice-EPKK | 0.04 | 0 | 0.11 | | | 95.9% | 97.9% | 97.5% | | | - | - | - | | | - | - | - | | |
| Łódź-EPLL | 0 | 0 | 0.04 | | | 100.0% | 92.0% | 95.6% | | | - | - | - | | | - | - | - | | |
| Lublin-EPLB | 0 | 0 | 0 | | | 91.7% | 96.2% | 98.1% | | | - | - | - | | | - | - | - | | |
| Olsztyn-Mazury-EPSY | 0 | 0 | 0 | | | 88.9% | 100.0% | 97.9% | | | - | - | - | | | - | - | - | | |
| Poznań-Ławica-EPO | 0 | 0.01 | 0 | | | 97.9% | 97.3% | 97.7% | | | - | - | - | | | - | - | - | | |
| Radom-Sadków-EPRA | 0 | n/a | n/a | | | n/a | n/a | n/a | | | - | - | - | | | - | - | - | | |
| Rzeszów-Jasionka-EPRZ | 0 | 0 | 0.04 | | | 93.3% | 98.4% | 97.3% | | | - | - | - | | | - | - | - | | |
| Szczecin-Goleniów-EPSC | 0 | 0 | 0.02 | | | 95.7% | 100.0% | 97.6% | | | - | - | - | | | - | - | - | | |
| Warszawa/Modlin-EPMO | 0.01 | 0 | 0 | | | 96.4% | 98.3% | 98.1% | | | - | - | - | | | - | - | - | | |
| Wrocław-Strachowice-EPWR | 0 | 0 | 0.01 | | | 88.9% | 92.1% | 93.9% | | | - | - | - | | | - | - | - | | |
| Zielona Góra-Babimost-EPZG | 0 | 0 | 0 | | | 100.0% | 100.0% | 89.9% | | | - | - | - | | | - | - | - | | |

POLAND: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Poland ECZ represents 2.8% of the SES en route ANS actual costs in 2022
- National currency: PLN Exchange rates (1 EUR=) 2017: 4.25483 PLN 2022: 4.67989 PLN
- Performance Plan: RP3 draft performance plan dated 04 February 2022 and found consistent as per Commission Decision (EU) 2022/779 of 13 April 2022
The final version of the plan was adopted and published by Poland in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Poland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------------|---------------|---------------|---------------|---------------|---------------|
| En route costs (nominal PLN) | 770 873 178 | 832 074 098 | 1 602 947 276 | 875 857 917 | 914 029 458 | 950 341 024 |
| Inflation % | 3.7% | 3.2% | | 2.5% | 2.5% | 2.5% |
| Inflation index (100 in 2017) | 107.1 | 110.6 | | 113.4 | 116.2 | 119.1 |
| Real en route costs (PLN2017) | 732 049 657 | 771 058 475 | 1 503 108 131 | 798 885 838 | 819 037 945 | 837 052 160 |
| Total en route service units | 2 145 811 | 2 549 306 | 4 695 117 | 3 990 970 | 4 762 963 | 5 129 508 |
| Real en route DUC per service unit (PLN2017) | 341.15 | 302.46 | 320.14 | 200.17 | 171.96 | 163.18 |
| Real en route DUC per service unit (€2017) | 80.18 | 71.09 | 75.24 | 47.05 | 40.42 | 38.35 |
| Poland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal PLN) | 770 873 178 | 632 683 487 | 1 403 556 665 | 857 681 296 | | |
| Inflation % | 3.7% | 5.2% | | 13.2% | | |
| Inflation index (100 in 2017) | 107.1 | 112.7 | | 127.6 | | |
| Real en route costs (PLN2017) | 732 049 657 | 583 327 811 | 1 315 377 467 | 720 475 683 | | |
| Total en route service units | 2 145 811 | 2 585 928 | 4 731 739 | 3 128 964 | | |
| Real en route AUC per service unit (PLN2017) | 341.15 | 225.58 | 277.99 | 230.26 | | |
| Real en route AUC per service unit (€2017) | 80.18 | 53.02 | 65.34 | 54.12 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal PLN) | in value 0 | -199 390 611 | -199 390 611 | -18 176 620 | | |
| | in % - | -24.0% | -12.4% | -2.1% | | |
| Inflation % | in p.p. 0.0 p.p. | 2.0 p.p. | | 10.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 2.1 p.p. | | 14.2 p.p. | | |
| Real en route costs (PLN2017) | in value 0 | -187 730 664 | -187 730 664 | -78 410 156 | | |
| | in % - | -24.3% | -12.5% | -9.8% | | |
| Total en route service units | in value 0 | 36 622 | 36 622 | -862 006 | | |
| | in % - | +1.4% | +0.8% | -21.6% | | |
| Real en route unit cost per service unit (PLN2017) | in value 0.00 | -76.88 | -42.15 | 30.09 | | |
| | in % - | -25.4% | -13.2% | +15.0% | | |
| Real en route unit cost per service unit (€2017) | in value 0.00 | -18.07 | -9.91 | 7.07 | | |
| | in % - | -25.4% | -13.2% | +15.0% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +15.0% (or +30.09 PLN2017, +7.07 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-21.6%) and significantly lower than planned en route costs in real terms (-9.8%, or -78.4 M€2017, -18.4 M€2017). It should be noted that actual inflation index in 2022 was +14.2 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-21.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (PANSAs) bearing a loss of -6.3 M€2017.

En route costs by entity

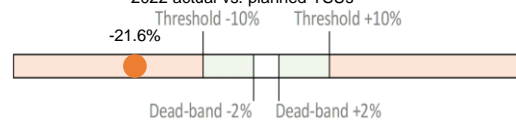
Actual real en route costs are -9.8% (-18.4 M€2017) lower than planned. This is the result of lower costs for the main ANSP, PANSAs (-11.2%, or -18.5 M€2017) and the MET service providers (-8.7%, or -0.6 M€2017) and higher costs for the NSA/EUROCONTROL (+4.6%, or +0.7 M€2017).

En route costs for the main ANSP (PANSAs) at charging zone level

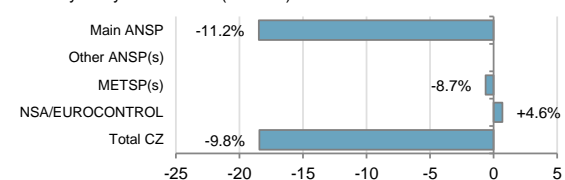
Significantly lower than planned en route costs in real terms for PANSAs in 2022 (-11.2%, or -18.5 M€2017) result from:

- Significantly lower staff costs (-8.7%), mainly due to inflation index impact (+14.2 p.p.) since in nominal terms staff costs are higher than planned by 2.7%.
- Significantly lower other operating costs (-33.2%), as a consequence of lower traffic and the review of PANSAs plan resulting in one-off cost containment initiative and postponement of some activities. This result is also impacted by higher actual inflation index (+14.2 p.p.).
- Lower depreciation (-4.5%), due to the lower execution of investment plan.
- Higher cost of capital (+4.1%), resulting from higher WACC due to the higher interest rate in 2022.
- Significantly lower deduction for VFR exempted flights (-15.6%).

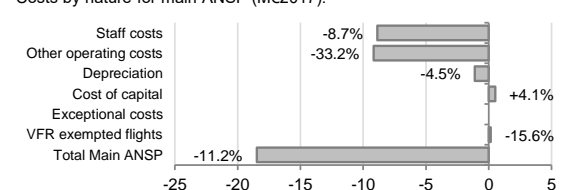
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



POLAND: En route charging zone

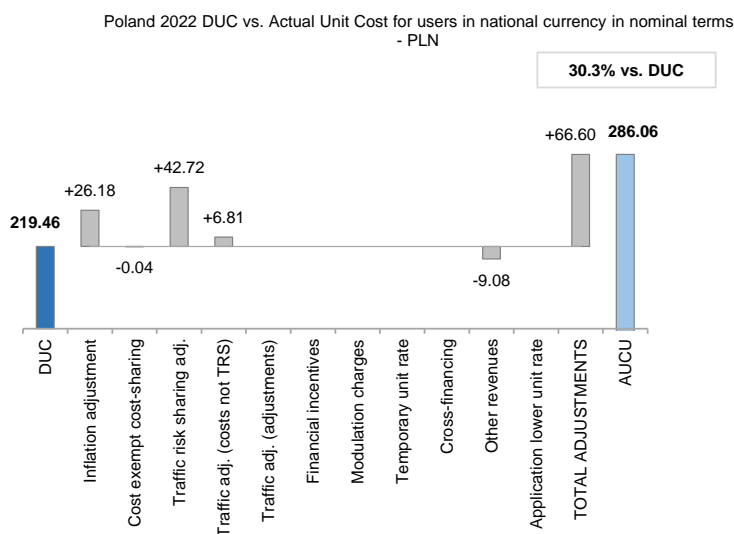
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | PLN/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 223.17 | 47.69 |
| DUC to be charged retroactively | -3.71 | -0.79 |
| DUC | 219.46 | 46.89 |
| Inflation adjustment | 26.18 | 5.60 |
| Cost exempt from cost-sharing | -0.04 | -0.01 |
| Traffic risk sharing adjustment | 42.72 | 9.13 |
| Traffic adj. (costs not TRS) | 6.81 | 1.46 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -9.08 | -1.94 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 66.60 | 14.23 |
| AUCU | 286.06 | 61.12 |
| AUCU vs. DUC | +30.3% | +30.3% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

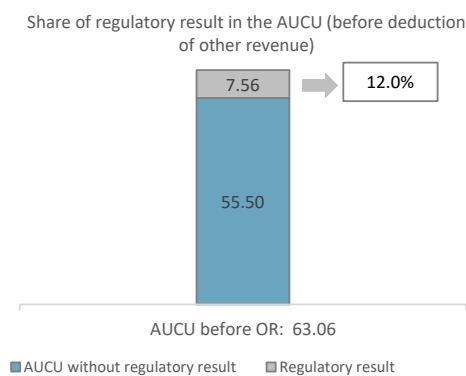
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | PLN '000 | € '000 | PLN/SU | €/SU |
|---|--|-------------|------------|--------------|--------------|
| by item | New and existing investments | -3 924 | -839 | -1.25 | -0.27 |
| | Competent authorities and qualified entities costs | 6 | 1 | 0.00 | 0.00 |
| | Eurocontrol costs | 2 916 | 623 | 0.93 | 0.20 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 883 | 189 | 0.28 | 0.06 |
| | Changes in law | 2 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -117 | -25 | -0.04 | -0.01 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | PLN '000 | € '000 | PLN/SU | €/SU |
|-----------------------------------|----------------|----------------|---------------|--------------|
| PANSA | 107 337 | 22 936 | 34.30 | 7.33 |
| METSP(s) | | | | |
| Poland-MET IMWM | 3 066 | 655 | 0.98 | 0.21 |
| Poland-MET Airport Meteo | 56 | 12 | 0.02 | 0.00 |
| Poland-MET_WIM | 119 | 25 | 0.04 | 0.01 |
| Poland-MET BYDGOSZCZ | 151 | 32 | 0.05 | 0.01 |
| Total charging zone | 110 729 | 23 661 | 35.39 | 7.56 |
| Actual cost for users*** | 923 473 | 197 328 | 295.14 | 63.06 |
| Regulatory result (% AUCU) | 12.0% | 12.0% | 12.0% | 12.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (286.06 PLN or 61.12 €) is +30.3% higher than the nominal DUC (219.46 PLN or 46.89 €). The difference between these two figures (+66.60 PLN/SU or +14.23 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+26.18 PLN/SU or +5.60 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.04 PLN/SU or -0.01 €/SU);
- the addition of the traffic risk sharing adjustments (+42.72 PLN/SU or +9.13 €/SU);
- the addition of the traffic adjustment (+6.81 PLN/SU or +1.46 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-9.08 PLN/SU or -1.94 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 12.0%.

POLAND: En route main ANSP (PANSA)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

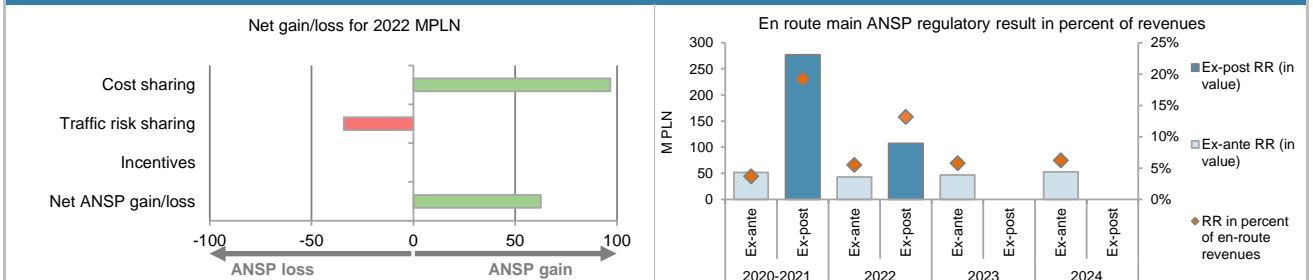
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|----------------|----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 196 768 | 21 942 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 11 683 | 77 664 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 6 445 | -2 856 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 214 896 | 96 750 | | |
| Traffic risk sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.8% | -21.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 412 687 | 777 208 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 11 019 | -34 197 | | |
| Incentives (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (PLN '000) | 225 915 | 62 553 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 49 547 | 13 366 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| PANSA planned regulatory result (PLN '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|----------------|----------------|----------------|
| Total asset base | 1 195 647 | 1 209 989 | 2 405 636 | 1 193 782 | 1 298 108 | 1 394 343 |
| Proportion of financing through equity (in %) | 97% | 84% | 90% | 74% | 71% | 73% |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| RoE (in value) | 27 697 | 23 919 | 51 616 | 42 763 | 46 868 | 52 493 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 27 697 | 23 919 | 51 616 | 42 763 | 46 868 | 52 493 |
| Revenue for the en route charging zone | 678 018 | 734 669 | 1 412 687 | 777 208 | 812 630 | 847 116 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.1% | 3.3% | 3.7% | 5.5% | 5.8% | 6.2% |
| Ex-ante RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| PANSA actual regulatory result (PLN '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 1 195 647 | 1 080 451 | 2 276 098 | 1 087 600 | | |
| Proportion of financing through equity (in %) | 97% | 91% | 94% | 85% | | |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | | |
| RoE (in value) | 27 697 | 23 149 | 50 846 | 44 785 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 225 915 | 225 915 | 62 553 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 27 697 | 249 064 | 276 761 | 107 337 | | |
| Revenue for the en route charging zone | 678 018 | 763 816 | 1 441 834 | 817 818 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.1% | 32.6% | 19.2% | 13.1% | | |
| Ex-post RoE pre-tax rate (in %) | 2.4% | 25.4% | 13.0% | 11.6% | | |

13. Focus on the main ANSP regulatory result on en route activity



PANSA net gain on activity in the Poland en route charging zone in the year 2022

PANSA reported a net gain of +62.6 MPLN, as a combination of a gain of +96.7 MPLN arising from the cost sharing mechanism, with a loss of -34.2 MPLN arising from the traffic risk sharing mechanism.

PANSA overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+62.6 MPLN) and the actual RoE (+44.8 MPLN) amounts to +107.3 MPLN (13.1% of the en route revenues). The resulting ex-post rate of return on equity is 11.6%, which is higher than the 4.9% planned in the PP.

POLAND: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| Poland-MET IMWM planned regulatory result (PLN '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 299 | 334 | 632 | 113 | 175 | 176 |
| Revenue for the en route charging zone | 29 923 | 31 768 | 61 692 | 31 893 | 33 213 | 34 696 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.0% | 1.1% | 1.0% | 0.4% | 0.5% | 0.5% |
| Ex-ante RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| Poland-MET IMWM actual regulatory result (PLN '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 299 | 799 | 1 097 | 3 066 | | |
| Revenue for the en route charging zone | 29 923 | 32 276 | 62 199 | 35 558 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.0% | 2.5% | 1.8% | 8.6% | | |
| Ex-post RoE pre-tax rate (in %) | 4.0% | 9.5% | 6.9% | 140.3% | | |
| Poland-MET Airport Meteo planned regulatory result (PLN '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 16 | 10 | 26 | 46 | 37 | 39 |
| Revenue for the en route charging zone | 299 | 320 | 619 | 324 | 1 231 | 1 188 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.3% | 3.1% | 4.1% | 14.3% | 3.0% | 3.3% |
| Ex-ante RoE pre-tax rate (in %) | 5.1% | 4.8% | 5.0% | 4.9% | 4.9% | 4.9% |
| Poland-MET Airport Meteo actual regulatory result (PLN '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 16 | 41 | 57 | 56 | | |
| Revenue for the en route charging zone | 299 | 326 | 624 | 358 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.3% | 12.5% | 9.1% | 15.5% | | |
| Ex-post RoE pre-tax rate (in %) | 5.1% | 19.7% | 10.9% | 69.2% | | |
| Poland-MET_WIM planned regulatory result (PLN '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 12 | 11 | 23 | 30 | 31 | 29 |
| Revenue for the en route charging zone | 1 636 | 1 671 | 3 307 | 1 760 | 1 807 | 1 812 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.7% | 0.7% | 0.7% | 1.7% | 1.7% | 1.6% |
| Ex-ante RoE pre-tax rate (in %) | 5.1% | 4.7% | 4.9% | 4.6% | 4.6% | 4.6% |
| Poland-MET_WIM actual regulatory result (PLN '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 12 | 0 | 12 | 119 | | |
| Revenue for the en route charging zone | 1 636 | 1 703 | 3 339 | 1 971 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.7% | 0.0% | 0.4% | 6.1% | | |
| Ex-post RoE pre-tax rate (in %) | 5.1% | 0.1% | 2.6% | 29.2% | | |
| Poland-MET BYDGOSZCZ planned regulatory result (PLN '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 52 | 48 | 100 | 53 | 53 | 47 |
| Revenue for the en route charging zone | 1 150 | 1 350 | 2 500 | 1 479 | 1 440 | 1 467 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.6% | 3.5% | 4.0% | 3.6% | 3.7% | 3.2% |
| Ex-ante RoE pre-tax rate (in %) | 6.8% | 5.7% | 6.3% | 5.0% | 4.7% | 4.6% |
| Poland-MET BYDGOSZCZ actual regulatory result (PLN '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 52 | 157 | 210 | 151 | | |
| Revenue for the en route charging zone | 1 150 | 1 372 | 2 522 | 1 652 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.6% | 11.5% | 8.3% | 9.2% | | |
| Ex-post RoE pre-tax rate (in %) | 6.8% | 18.9% | 13.1% | 17.5% | | |
| Total other ANSPs | | | | | | |
| Total other ANSPs planned regulatory result (PLN '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 379 | 402 | 781 | 242 | 295 | 292 |
| Revenue for the en route charging zone | 33 007 | 35 110 | 68 117 | 35 456 | 37 691 | 39 163 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.1% | 1.1% | 1.1% | 0.7% | 0.8% | 0.7% |
| Ex-ante RoE pre-tax rate (in %) | 4.3% | 4.2% | 4.2% | 4.4% | 4.3% | 4.3% |
| Total other ANSPs actual regulatory result (PLN '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 379 | 997 | 1 376 | 3 392 | | |
| Revenue for the en route charging zone | 33 007 | 35 677 | 68 684 | 39 539 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.1% | 2.8% | 2.0% | 8.6% | | |
| Ex-post RoE pre-tax rate (in %) | 4.3% | 10.3% | 7.5% | 95.9% | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Poland (IMWM, Airport Meteo, MET Warmia I Maury, MET Bydgoszcz) corresponds to 8.6% of the en route revenues. The ex-post RoE 95.9% is higher than planned 4.4%. | | | | | | |

POLAND ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|----------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Poland zone 1 TCZ represents 0.8% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: PLN Exchange rates (1 EUR=) 2017: 4.25483 PLN 2022: 4.67989 PLN Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Poland zone 1: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal PLN) | 33 255 751 | 48 543 917 | 81 799 669 | 48 871 242 | 50 173 711 | 52 624 872 |
| Inflation % | 3.7% | 3.2% | | 2.5% | 2.5% | 2.5% |
| Inflation index (100 in 2017) | 107.1 | 110.6 | | 113.4 | 116.2 | 119.1 |
| Real terminal costs (PLN2017) | 31 377 540 | 44 507 345 | 75 884 885 | 44 037 508 | 44 320 933 | 45 668 485 |
| Total terminal service units | 43 637 | 54 873 | 98 511 | 87 356 | 96 630 | 103 108 |
| Real terminal DUC per service unit (PLN2017) | 719.05 | 811.09 | 770.32 | 504.11 | 458.67 | 442.92 |
| Real terminal DUC per service unit (€2017) | 169.00 | 190.63 | 181.05 | 118.48 | 107.80 | 104.10 |
| Poland zone 1: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal PLN) | 33 255 751 | 34 465 013 | 67 720 764 | 51 673 666 | | |
| Inflation % | 3.7% | 5.2% | | 13.2% | | |
| Inflation index (100 in 2017) | 107.1 | 112.7 | | 127.6 | | |
| Real terminal costs (PLN2017) | 31 377 540 | 31 310 379 | 62 687 919 | 42 256 612 | | |
| Total terminal service units | 43 637 | 53 296 | 96 933 | 83 357 | | |
| Real terminal AUC per service unit (PLN2017) | 719.05 | 587.49 | 646.71 | 506.93 | | |
| Real terminal AUC per service unit (€2017) | 169.00 | 138.08 | 152.00 | 119.14 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal PLN) | in value 0 | -14 078 905 | -14 078 905 | 2 802 422 | | |
| | in % - | -29.0% | -17.2% | +5.7% | | |
| Inflation % | in p.p. 0.0 p.p. | 2.0 p.p. | | 10.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 2.1 p.p. | | 14.2 p.p. | | |
| Real terminal costs (PLN2017) | in value 0 | -13 196 966 | -13 196 966 | -1 780 896 | | |
| | in % - | -29.7% | -17.4% | -4.0% | | |
| Total terminal service units | in value 0 | -1 578 | -1 578 | -3 999 | | |
| | in % - | -2.9% | -1.6% | -4.6% | | |
| Real terminal unit cost per service unit (PLN2017) | in value 0.00 | -223.61 | -123.61 | 2.82 | | |
| | in % - | -27.6% | -16.0% | +0.6% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -52.55 | -29.05 | 0.66 | | |
| | in % - | -27.6% | -16.0% | +0.6% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs Threshold -10% Threshold +10% Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +0.6% (or +2.82 PLN2017, +0.66 €2017) higher than the planned DUC. This results from the combination of lower than planned TNSUs (-4.6%) and lower than planned terminal costs in real terms (-4.0%, or -1.8 MPLN2017, -0.4 M€2017). It should be noted that actual inflation index in 2022 was +14.2 p.p. higher than planned.</p> | | | | | | |
| Terminal charging zone 1 service units | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>The difference between actual and planned TNSUs (-4.6%) falls outside the $\pm 2\%$ dead band, but does not exceed the $\pm 10\%$ threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (PANSAs) bearing a loss of -0.2 M€2017.</p> | | | | | | |
| Terminal charging zone 1 costs by entity | | | | | | |
| <p>Actual real terminal costs are -4.0% (-0.4 M€2017) lower than planned. This is the result of lower costs for the main ANSP, PANSAs (-4.7%, or -0.05 M€2017) and the MET service provider (-10.2%, or 0.05 M€2017) and higher costs for the NSA (+28.5%, or +0.1 M€2017).</p> | | | | | | |
| Terminal charging zone 1 costs for the main ANSP (PANSAs) at charging zone level | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Lower than planned terminal costs in real terms for PANSAs in 2022 (-4.7%, or -0.5 M€2017) result from:</p> <ul style="list-style-type: none"> - Higher staff costs (+2.6%), resulting from 1) the changes in the remuneration scheme implemented in 2022 that affect also EPWA ATCOs remunerations, 2) additional costs that materialized in 2022 and represent the part of unspent budget of staff costs in 2021. This result is also impacted by higher actual inflation index (+14.2 p.p.). - Significantly lower other operating costs (-37.1%), as a consequence of lower traffic and the review of PANSAs plan resulting in one-off cost containment initiative and postponement of some activities. This result is also impacted by higher actual inflation index (+14.2 p.p.). - Lower depreciation (-2.5%), due to the postponement of some investment projects. - Higher cost of capital (+2.8%), resulting from higher WACC due to the higher interest rate in 2022. | | | | | | |

POLAND ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

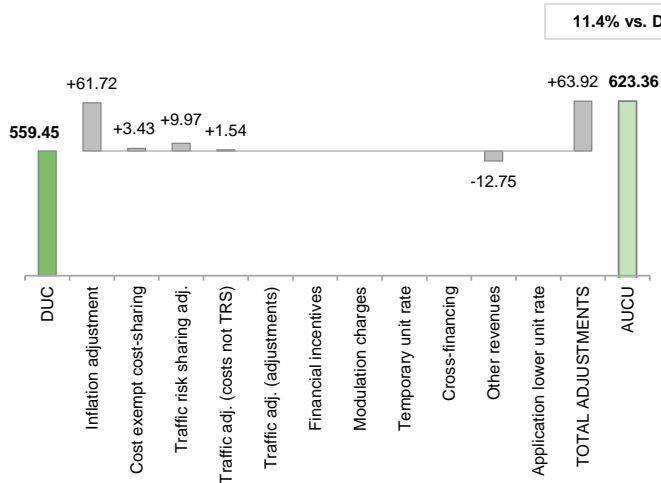
5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level

Poland zone 1 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms - PLN



| Components of the AUCU | PLN/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 566.62 | 121.08 |
| DUC to be charged retroactively | -7.17 | -1.53 |
| DUC | 559.45 | 119.54 |
| Inflation adjustment | 61.72 | 13.19 |
| Cost exempt from cost-sharing | 3.43 | 0.73 |
| Traffic risk sharing adjustment | 9.97 | 2.13 |
| Traffic adj. (costs not TRS) | 1.54 | 0.33 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -12.75 | -2.72 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 63.92 | 13.66 |
| AUCU | 623.36 | 133.20 |
| AUCU vs. DUC | 11.4% | 11.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | PLN '000 | € '000 | PLN/SU | €/SU |
|---|--|------------|-----------|-------------|-------------|
| by item | New and existing investments | -74 | -16 | -0.89 | -0.19 |
| | Competent authorities and qualified entities costs | 306 | 65 | 3.67 | 0.78 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 54 | 12 | 0.65 | 0.14 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | 286 | 61 | 3.43 | 0.73 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | PLN '000 | € '000 | PLN/SU | €/SU |
|-----------------------------------|---------------|---------------|---------------|---------------|
| PANSA | 3 022 | 646 | 36.25 | 7.75 |
| METSP(s) | PLN '000 | € '000 | PLN/SU | €/SU |
| MET IMWM | 199 | 43 | 2.39 | 0.51 |
| Total charging zone | 3 221 | 688 | 38.64 | 8.26 |
| Actual cost for users*** | 53 025 | 11 330 | 636.12 | 135.93 |
| Regulatory result (% AUCU) | 6.1% | 6.1% | 6.1% | 6.1% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (623.36 PLN or 133.20 €) is +11.4% higher than the nominal DUC (559.45 PLN or 119.54 €). The difference between these two figures (+63.92 PLN/SU or +13.66 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+61.72 PLN/SU or +13.19 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+3.43 PLN/SU or +0.73 €/SU);
- the addition of the traffic risk sharing adjustments (+9.97 PLN/SU or +2.13 €/SU);
- the addition of the traffic adjustment (+1.54 PLN/SU or +0.33 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-12.75 PLN/SU or -2.72 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 6.1%.

POLAND ZONE 1: Terminal main ANSP (PANSa)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

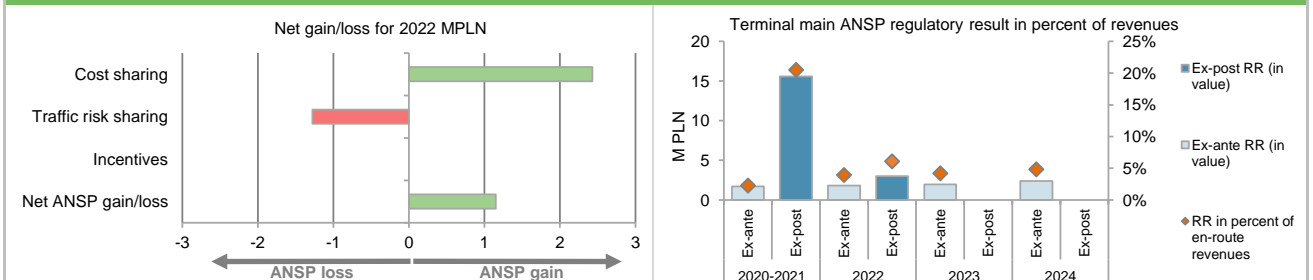
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 14 183 | -2 479 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 782 | 4 928 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 120 | -20 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 15 085 | 2 430 | | |
| Traffic risk sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -1.6% | -4.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 76 334 | 46 070 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -1 223 | -1 278 | | |
| Incentives (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (PLN '000) | 13 863 | 1 152 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 3 040 | 246 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| PANSa planned regulatory result (PLN '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 35 874 | 45 389 | 81 263 | 50 460 | 54 865 | 63 974 |
| Proportion of financing through equity (in %) | 97% | 84% | 89% | 74% | 71% | 73% |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| RoE (in value) | 831 | 897 | 1 728 | 1 808 | 1 981 | 2 408 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 831 | 897 | 1 728 | 1 808 | 1 981 | 2 408 |
| Revenue for the terminal charging zone | 30 567 | 45 767 | 76 334 | 46 070 | 47 322 | 49 697 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.7% | 2.0% | 2.3% | 3.9% | 4.2% | 4.8% |
| Ex-ante RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| PANSa actual regulatory result (PLN '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 35 874 | 41 407 | 77 281 | 45 414 | | |
| Proportion of financing through equity (in %) | 97% | 91% | 93% | 85% | | |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | | |
| RoE (in value) | 831 | 887 | 1 718 | 1 870 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 13 863 | 13 863 | 1 152 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 831 | 14 750 | 15 581 | 3 022 | | |
| Revenue for the terminal charging zone | 30 567 | 45 447 | 76 014 | 49 701 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.7% | 32.5% | 20.5% | 6.1% | | |
| Ex-post RoE pre-tax rate (in %) | 2.4% | 39.3% | 21.6% | 7.8% | | |

13. Focus on main ANSP regulatory result on terminal activity



PANSa net gain on activity in the Poland terminal charging zone 1 in the year 2022

PANSa reported a net gain of +1.2 MPLN, as a combination of a gain of +2.4 MPLN arising from the cost sharing mechanism, with a loss of -1.3 MPLN arising from the traffic risk sharing mechanism.

PANSa overall regulatory results (RR) for the terminal charging zone 1 activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.2 MPLN) and the actual RoE (+1.9 MPLN) amounts to +3.0 MPLN (6.1% of the terminal revenues). The resulting ex-post rate of return on equity is 7.8%, which is higher than the 4.9% planned in the PP.

POLAND ZONE 1: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| MET IMWM planned regulatory result (PLN '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 1 682 | 1 741 | 3 423 | 1 727 | 1 747 | 1 791 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| MET IMWM actual regulatory result (PLN '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 27 | 27 | 199 | | |
| Revenue for the terminal charging zone | 1 682 | 1 774 | 3 457 | 1 944 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 1.5% | 0.8% | 10.2% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal charging zone 1 activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Poland (MET IMWM) corresponds to 10.2% of the terminal revenues. It should be noted that MET IMWM does not charge cost of capital. | | | | | | |

POLAND ZONE 2: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|-----------------|--|-----------------|-----------------|---------------|
| Poland zone 2 TCZ represents 2.7% of the SES terminal ANS actual costs in 2022 | | | | | | |
| Number of airports in charging zone in 2022: 14 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 14 Airports with more than 80,000 IFR mvmts: 0 | | | | | | |
| National currency: PLN Exchange rates (1 EUR=) 2017: 4.25483 PLN 2022: 4.67989 PLN | | | | | | |
| Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Poland zone 2: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal PLN) | 107 007 850 | 153 280 891 | 260 288 740 | 149 058 558 | 150 166 336 | 149 863 037 |
| Inflation % | 3.7% | 3.2% | | 2.5% | 2.5% | 2.5% |
| Inflation index (100 in 2017) | 107.1 | 110.6 | | 113.4 | 116.2 | 119.1 |
| Real terminal costs (PLN2017) | 101 339 514 | 140 933 556 | 242 273 070 | 134 684 632 | 133 096 739 | 130 519 058 |
| Total terminal service units | 62 352 | 76 368 | 138 720 | 123 910 | 131 402 | 141 942 |
| Real terminal DUC per service unit (PLN2017) | 1 625.29 | 1 845.45 | 1 746.49 | 1 086.95 | 1 012.90 | 919.52 |
| Real terminal DUC per service unit (€2017) | 381.99 | 433.73 | 410.47 | 255.46 | 238.06 | 216.11 |
| Poland zone 2: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal PLN) | 107 007 850 | 115 643 459 | 222 651 309 | 166 037 344 | | |
| Inflation % | 3.7% | 5.2% | | 13.2% | | |
| Inflation index (100 in 2017) | 107.1 | 112.7 | | 127.6 | | |
| Real terminal costs (PLN2017) | 101 339 514 | 105 409 039 | 206 748 553 | 136 962 975 | | |
| Total terminal service units | 62 352 | 78 808 | 141 160 | 140 929 | | |
| Real terminal AUC per service unit (PLN2017) | 1 625.29 | 1 337.54 | 1 464.64 | 971.86 | | |
| Real terminal AUC per service unit (€2017) | 381.99 | 314.36 | 344.23 | 228.41 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal PLN) | in value 0 | -37 637 432 | -37 637 432 | 16 978 787 | | |
| | in % - | -24.6% | -14.5% | +11.4% | | |
| Inflation % | in p.p. 0.0 p.p. | 2.0 p.p. | | 10.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 2.1 p.p. | | 14.2 p.p. | | |
| Real terminal costs (PLN2017) | in value 0 | -35 524 517 | -35 524 517 | 2 278 343 | | |
| | in % - | -25.2% | -14.7% | +1.7% | | |
| Total terminal service units | in value 0 | 2 440 | 2 440 | 17 019 | | |
| | in % - | +3.2% | +1.8% | +13.7% | | |
| Real terminal unit cost per service unit (PLN2017) | in value 0.00 | -507.91 | -281.85 | -115.10 | | |
| | in % - | -27.5% | -16.1% | -10.6% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -119.37 | -66.24 | -27.05 | | |
| | in % - | -27.5% | -16.1% | -10.6% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+13.7%</p> | | | |
| <p>In 2022, the terminal AUC was -10.6% (or -115.1 PLN2017, -27.05 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TNSUs (+13.7%) and higher than planned terminal costs in real terms (+1.7%, or +2.3 MPLN2017, +0.5 ME2017). It should be noted that actual inflation index in 2022 was +14.2 p.p. higher than planned.</p> | | | | | | |
| Terminal charging zone 2 service units | | | <p>Costs by entity at TCZ level (ME2017):</p> <p>Main ANSP +3.7%</p> <p>Other ANSP(s) -2.7%</p> <p>METSP(s) -7.1%</p> <p>NSA -6.6%</p> <p>Total CZ +1.7%</p> | | | |
| <p>The difference between actual and planned TNSUs (+13.7%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (PANSA) retaining an amount of +1.0 ME2017.</p> | | | | | | |
| Terminal charging zone 2 costs by entity | | | | | | |
| <p>Actual real terminal costs are +1.7% (+0.5 ME2017) higher than planned. This is the result of higher costs for the main ANSP, PANSA (+3.7%, or +0.9 ME2017) and lower costs for the other ANSP (MODLIN, ANSP-BYDGOSZCZ and ANSP-Warmia-Mazury, -2.7%, or -0.01 ME2017), the NSA (-6.6%, or -0.1 ME2017) and the MET service providers (-7.1%, or -0.3 ME2017).</p> | | | | | | |
| Terminal charging zone 2 costs for the main ANSP (PANSA) at charging zone level | | | <p>Costs by nature for main ANSP (ME2017):</p> <p>Staff costs +6.4%</p> <p>Other operating costs -25.5%</p> <p>Depreciation +24.3%</p> <p>Cost of capital +25.7%</p> <p>Exceptional costs</p> <p>VFR exempted flights</p> <p>Total Main ANSP +3.7%</p> | | | |
| <p>Higher than planned terminal costs in real terms for PANSA in 2022 (+3.7%, or +0.9 ME2017) result from:</p> <ul style="list-style-type: none"> - Significantly higher staff costs (+6.4%), resulting from 1) the changes in the remuneration scheme implemented in 2022 that affect also regional TWR ATCOs remunerations, 2) additional costs that materialized in 2022 and represent the part of unspent budget of staff costs in 2021. This result is also impacted by higher actual inflation index (+14.2 p.p.). - Significantly lower other operating costs (-25.5%), due to the review of PANSA plan resulting in one-off cost containment initiative and postponement of some activities. This result is also impacted by higher actual inflation index (+14.2 p.p.). - Significantly higher depreciation (+24.3%), due to the higher traffic and the increase in the costs allocated to TNC-CZ2. - Significantly higher cost of capital (+25.7%), due to the higher WACC and higher asset base. | | | | | | |

POLAND ZONE 2: Terminal charging zone

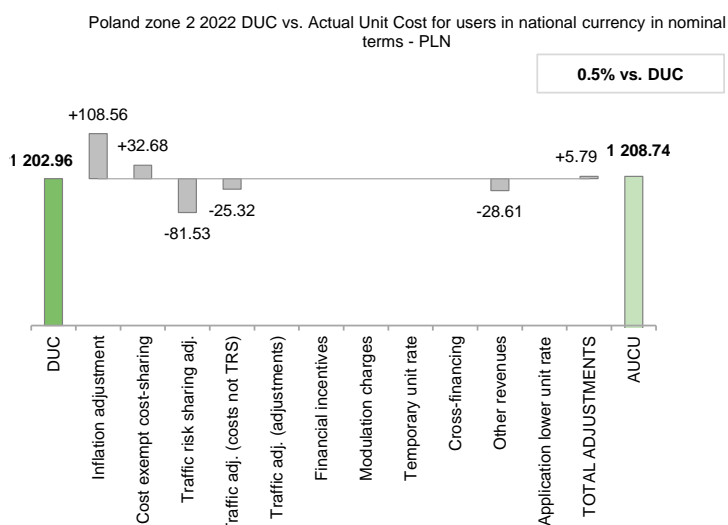
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | PLN/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 1 218.04 | 260.27 |
| DUC to be charged retroactively | -15.09 | -3.22 |
| DUC | 1 202.96 | 257.05 |
| Inflation adjustment | 108.56 | 23.20 |
| Cost exempt from cost-sharing | 32.68 | 6.98 |
| Traffic risk sharing adjustment | -81.53 | -17.42 |
| Traffic adj. (costs not TRS) | -25.32 | -5.41 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -28.61 | -6.11 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 5.79 | 1.24 |
| AUCU | 1 208.74 | 258.28 |
| AUCU vs. DUC | 0.5% | 0.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

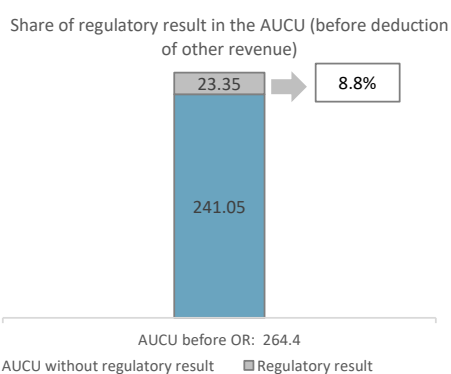
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | PLN '000 | € '000 | PLN/SU | €/SU |
|---|--|--------------|------------|--------------|-------------|
| by item | New and existing investments | 4 766 | 1 018 | 33.82 | 7.23 |
| | Competent authorities and qualified entities costs | -304 | -65 | -2.15 | -0.46 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 143 | 30 | 1.01 | 0.22 |
| | Changes in law | 1 | 0 | 0.01 | 0.00 |
| Total costs exempt from cost sharing | | 4 606 | 984 | 32.68 | 6.98 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | PLN '000 | € '000 | PLN/SU | €/SU |
|-----------------------------------|----------------|---------------|-----------------|---------------|
| PANSA | 13 555 | 2 896 | 96.18 | 20.55 |
| ANSP-BYDGOSZCZ | 241 | 51 | 1.71 | 0.36 |
| ANSP Warmia-Mazury | -42 | -9 | -0.29 | -0.06 |
| METSP(s) | PLN '000 | € '000 | PLN/SU | €/SU |
| MET IMWM | 1 215 | 260 | 8.62 | 1.84 |
| MET Airport Meteo | 19 | 4 | 0.13 | 0.03 |
| MET-BYDGOSZCZ | 334 | 71 | 2.37 | 0.51 |
| MET-Warmia-Mazury | 79 | 17 | 0.56 | 0.12 |
| Total charging zone | 15 401 | 3 291 | 109.28 | 23.35 |
| Actual cost for users*** | 174 379 | 37 261 | 1 237.35 | 264.40 |
| Regulatory result (% AUCU) | 8.8% | 8.8% | 8.8% | 8.8% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (1 208.74 PLN or 258.28 €) is +0.5% higher than the nominal DUC (1 202.96 PLN or 257.05 €). The difference between these two figures (+5.79 PLN/SU or +1.24 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+108.56 PLN/SU or +23.20 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+32.68 PLN/SU or +6.98 €/SU);
- the deduction of the traffic risk sharing adjustments (-81.53 PLN/SU or -17.42 €/SU);
- the deduction of the traffic adjustment (-25.32 PLN/SU or -5.41 €/SU) for the costs not subject to traffic risk sharings; and
- the deduction of the other revenues (-28.61 PLN/SU or -6.11 €/SU).

The share of regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 8.8%.

POLAND ZONE 2: Terminal main ANSP (PANSZA)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

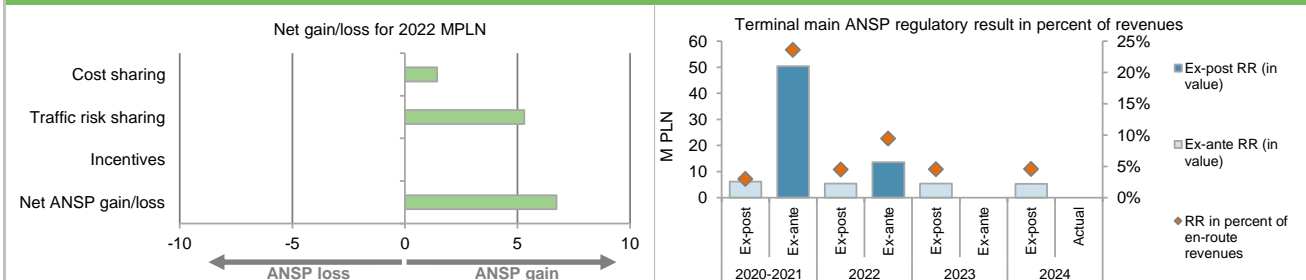
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 37 491 | -16 283 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 2 091 | 12 569 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 996 | 5 143 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 40 577 | 1 429 | | |
| Traffic risk sharing (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.8% | 13.7% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 206 915 | 120 531 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 640 | 5 303 | | |
| Incentives (PLN '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (PLN '000) | 44 217 | 6 732 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 9 697 | 1 438 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| PANSA planned regulatory result (PLN '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 137 408 | 151 116 | 288 524 | 150 544 | 148 661 | 141 373 |
| Proportion of financing through equity (in %) | 97% | 84% | 90% | 74% | 71% | 73% |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| RoE (in value) | 3 183 | 2 987 | 6 170 | 5 393 | 5 367 | 5 322 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 3 183 | 2 987 | 6 170 | 5 393 | 5 367 | 5 322 |
| Revenue for the terminal charging zone | 81 110 | 125 805 | 206 915 | 120 531 | 118 990 | 115 879 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.9% | 2.4% | 3.0% | 4.5% | 4.5% | 4.6% |
| Ex-ante RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | 5.1% | 5.2% |
| PANSA actual regulatory result (PLN '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 137 408 | 141 064 | 278 472 | 165 698 | | |
| Proportion of financing through equity (in %) | 97% | 91% | 94% | 85% | | |
| RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 4.9% | | |
| RoE (in value) | 3 183 | 3 022 | 6 205 | 6 823 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 44 217 | 44 217 | 6 732 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 3 183 | 47 239 | 50 422 | 13 555 | | |
| Revenue for the terminal charging zone | 81 110 | 132 532 | 213 642 | 143 546 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.9% | 35.6% | 23.6% | 9.4% | | |
| Ex-post RoE pre-tax rate (in %) | 2.4% | 37.0% | 19.3% | 9.6% | | |

13. Focus on main ANSP regulatory result on terminal activity



PANSA net gain on activity in the Poland terminal charging zone 2 in the year 2022

PANSA reported a net gain of +6.7 MPLN, as a combination of a gain of +1.4 MPLN arising from the cost sharing mechanism, with a gain of +5.3 MPLN arising from the traffic risk sharing mechanism.

PANSA overall regulatory results (RR) for the terminal charging zone 2 activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+6.7 MPLN) and the actual RoE (+6.8 MPLN) amounts to +13.6 MPLN (9.4% of the terminal revenues). The resulting ex-post rate of return on equity is 9.6%, which is higher than the 4.9% planned in the PP.

POLAND ZONE 2: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| BYDGOSZCZ (ANSP/MET) planned regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 84 | 77 | 161 | 89 | 128 | 203 |
| Revenue for the terminal charging zone | 1 863 | 2 068 | 3 931 | 2 684 | 2 918 | 3 673 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.5% | 3.7% | 4.1% | 3.3% | 4.4% | 5.5% |
| Ex-ante RoE pre-tax rate (in %) | 6.6% | 5.6% | 6.1% | 4.9% | 5.4% | 6.5% |
| BYDGOSZCZ (ANSP/MET) actual regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 84 | 271 | 355 | 575 | | |
| Revenue for the terminal charging zone | 1 863 | 2 114 | 3 977 | 3 028 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.5% | 12.8% | 8.9% | 19.0% | | |
| Ex-post RoE pre-tax rate (in %) | 6.6% | 19.6% | 13.4% | 40.0% | | |
| MAZURY (ANSP/MET) planned regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 55 | 53 | 107 | 70 | 68 | 130 |
| Revenue for the terminal charging zone | 2 639 | 3 019 | 5 658 | 3 196 | 3 264 | 3 827 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.1% | 1.7% | 1.9% | 2.2% | 2.1% | 3.4% |
| Ex-ante RoE pre-tax rate (in %) | 5.1% | 4.7% | 4.9% | 4.6% | 4.6% | 4.6% |
| MAZURY (ANSP/MET) actual regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 55 | 206 | 260 | 38 | | |
| Revenue for the terminal charging zone | 2 639 | 3 130 | 5 769 | 3 653 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.1% | 6.6% | 4.5% | 1.0% | | |
| Ex-post RoE pre-tax rate (in %) | 5.1% | 24.4% | 13.6% | 4.7% | | |
| MET IMWM planned regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 416 | 416 | 832 | 160 | 215 | 231 |
| Revenue for the terminal charging zone | 16 988 | 17 846 | 34 834 | 17 942 | 18 437 | 19 852 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.4% | 2.3% | 2.4% | 0.9% | 1.2% | 1.2% |
| Ex-ante RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| MET IMWM actual regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 416 | 612 | 1 028 | 1 215 | | |
| Revenue for the terminal charging zone | 16 988 | 18 095 | 35 083 | 19 739 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.4% | 3.4% | 2.9% | 6.2% | | |
| Ex-post RoE pre-tax rate (in %) | 4.0% | 5.7% | 4.9% | 38.3% | | |
| MET Airport Meteo planned regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 5 | 3 | 9 | 15 | 55 | 58 |
| Revenue for the terminal charging zone | 100 | 107 | 206 | 108 | 1 828 | 1 764 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.3% | 3.1% | 4.1% | 14.3% | 3.0% | 3.3% |
| Ex-ante RoE pre-tax rate (in %) | 5.1% | 4.8% | 5.0% | 4.9% | 4.9% | 4.9% |
| MET Airport Meteo actual regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 5 | 14 | 19 | 19 | | |
| Revenue for the terminal charging zone | 100 | 109 | 208 | 119 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.3% | 12.5% | 9.1% | 15.5% | | |
| Ex-post RoE pre-tax rate (in %) | 5.1% | 19.7% | 10.9% | 69.2% | | |
| Total other ANSPs planned regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 560 | 549 | 1 109 | 335 | 465 | 622 |
| Revenue for the terminal charging zone | 21 590 | 23 039 | 44 629 | 23 930 | 26 445 | 29 117 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.6% | 2.4% | 2.5% | 1.4% | 1.8% | 2.1% |
| Ex-ante RoE pre-tax rate (in %) | 4.4% | 4.2% | 4.3% | 4.4% | 4.5% | 4.8% |
| Total other ANSPs actual regulatory result (PLN '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 560 | 1 102 | 1 662 | 1 846 | | |
| Revenue for the terminal charging zone | 21 590 | 23 447 | 45 037 | 26 539 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.6% | 4.7% | 3.7% | 7.0% | | |
| Ex-post RoE pre-tax rate (in %) | 4.4% | 8.4% | 6.4% | 34.0% | | |
| Total other ANSPs overall regulatory result (RR) for the terminal charging zone 2 activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the terminal charging zone for Poland (ANSP-MODLIN, ANSP-BYDGOSZCZ, ANSP-Warmia-Mazury, MET IMWM, MET Airport Meteo, MET-BYDGOSZCZ, MET-Warmia-Mazury) corresponds to 7.0% of the terminal revenues. The ex-post RoE 34.0% is higher than planned 4.4%. | | | | | | |

POLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------|------------------|---------------|----------------|------------------|---------------|-------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Poland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Poland zone 1 Terminal charging zone 2: Poland zone 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 172 051 447 | 181 219 573 | 353 271 019 | 187 759 755 | 192 496 044 | 196 729 872 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 31 192 093 | 43 583 622 | 74 775 715 | 42 004 531 | 41 697 946 | 41 408 832 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 203 243 540 | 224 803 194 | 428 046 734 | 229 764 286 | 234 193 991 | 238 138 704 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.7% | 80.6% | 82.5% | 81.7% | 82.2% | 82.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 172 051 447 | 137 097 795 | 309 149 242 | 169 331 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 31 192 093 | 32 132 757 | 63 324 850 | 42 121 445 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 203 243 540 | 169 230 552 | 372 474 092 | 211 452 695 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 84.7% | 81.0% | 83.0% | 80.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 0 | -55 572 643 | -55 572 643 | -18 311 591 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 0.0% | -24.7% | -13.0% | -8.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | 0.0 p.p. | 0.4 p.p. | 0.5 p.p. | -1.6 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>Actual</td> <td>85%</td> <td>15%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>81%</td> <td>19%</td> </tr> <tr> <td>Actual</td> <td>81%</td> <td>19%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>83%</td> <td>17%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td>80%</td> <td>20%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>Actual</td> <td>82%</td> <td>18%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>Actual</td> <td>83%</td> <td>17%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 85% | 15% | Actual | 85% | 15% | 2021 | Determined | 81% | 19% | Actual | 81% | 19% | 2020-2021 | Determined | 83% | 17% | Actual | 83% | 17% | 2022 | Determined | 82% | 18% | Actual | 80% | 20% | 2023 | Determined | 82% | 18% | Actual | 82% | 18% | 2024 | Determined | 83% | 17% | Actual | 83% | 17% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 85% | 15% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 81% | 19% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 80% | 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 82% | 18% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 83% | 17% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -8.0% (-18.3 M€2017) lower than planned, as en route costs are lower than planned by -18.4 M€2017 and terminal costs are higher than planned by +0.1 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (80.1%) is lower than planned in the PP for 2022 (81.7%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In PLN '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PANSA | 49 963 | 943 809 | 5.3% | 123 914 | 1 011 065 | 12.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland zone 2-ANSP-BYDGOSZCZ | 14 | 641 | 2.1% | 241 | 748 | 32.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland zone 2-ANSP Warmia-Mazury | 48 | 1 905 | 2.5% | -42 | 2 207 | -1.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland-MET IMWM | 273 | 51 562 | 0.5% | 4 480 | 57 242 | 7.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland-MET Airport Meteo | 62 | 432 | 14.3% | 74 | 478 | 15.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland-MET_WIM | 52 | 3 051 | 1.7% | 199 | 3 417 | 5.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Poland-MET BYDGOSZCZ | 128 | 3 522 | 3.6% | 485 | 3 931 | 12.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 50 540 | 1 004 923 | 5.0% | 129 351 | 1 079 087 | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Poland covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +129.4 MPLN (+110.7 MPLN for en route and +18.6 MPLN for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 12.0% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (5.0% of gate-to-gate revenues).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Poland gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Poland gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Type</th> <th>Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>5.0%</td> </tr> <tr> <td>Ex-post</td> <td>12.0%</td> </tr> </tbody> </table> | | | | | | | Type | Result (%) | Ex-ante | 5.0% | Ex-post | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 5.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 12.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Portugal

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PORTUGAL

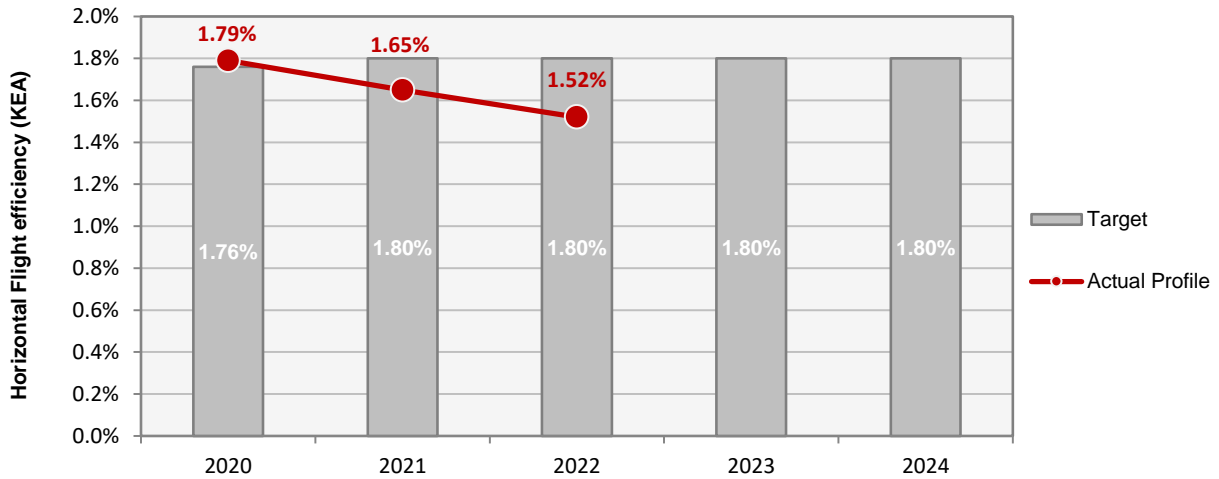
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| NAV Portugal | 99 | D | D | D | D | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet or exceed the RP3 target level. Only a single question remains to be improved in "Safety Promotion" to reach the maximum maturity level.</p> | | | | | | |

PORTUGAL

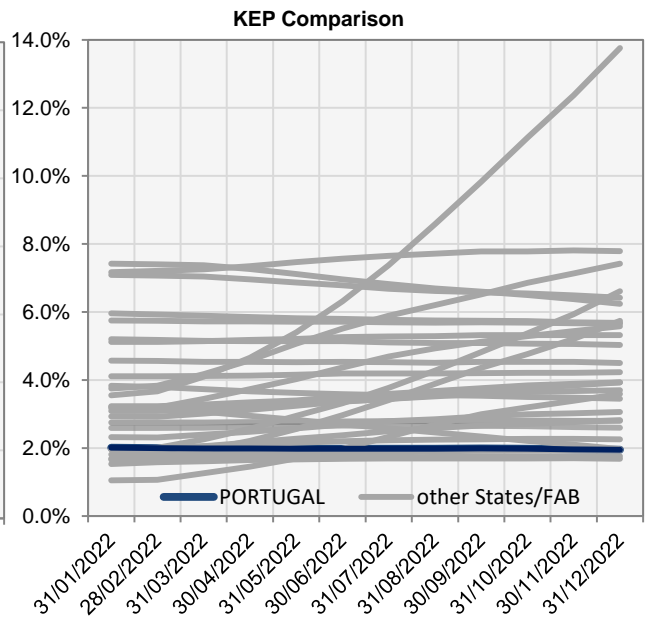
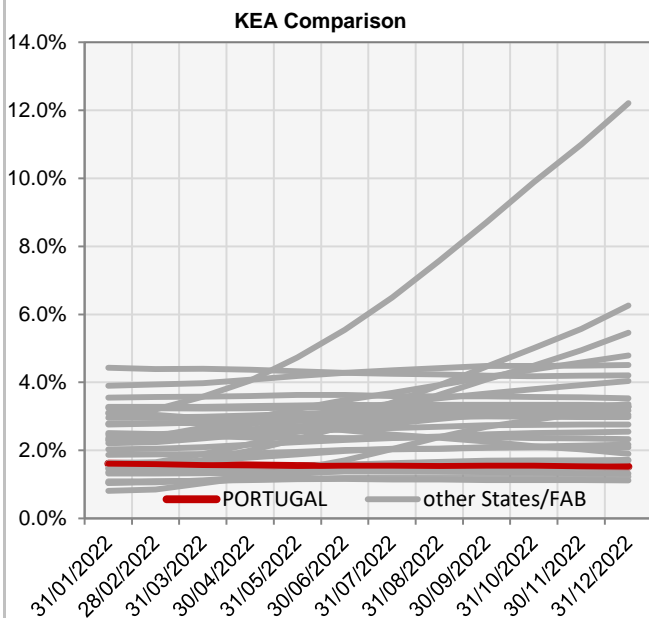
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.76% | 1.80% | 1.80% | 1.80% | 1.80% |
| Actual performance | 1.79% | 1.65% | 1.52% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.61% | 1.60% | 1.57% | 1.56% | 1.54% | 1.55% | 1.55% | 1.54% | 1.55% | 1.55% | 1.53% | 1.52% |
| KEP | 2.01% | 2.00% | 1.99% | 1.99% | 1.98% | 1.98% | 1.98% | 1.98% | 1.99% | 1.98% | 1.96% | 1.95% |
| KES | 1.82% | 1.81% | 1.81% | 1.80% | 1.79% | 1.80% | 1.81% | 1.81% | 1.82% | 1.81% | 1.80% | 1.80% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

The scope of RP3 monitoring for Portugal comprises 10 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Lisbon (LPPT) and Porto (LPPR)) must be monitored for additional taxi-out and ASMA times.

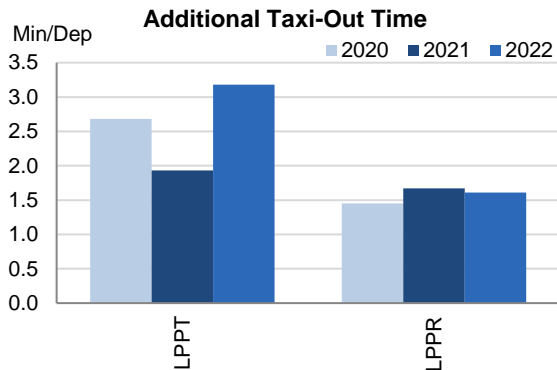
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.

Traffic at these 10 airports in 2022, after an increase of 67% versus 2021, was only 4% lower than in 2019.

With the traffic recovery, the additional times at Lisbon observed an important deterioration in 2022, while the performance at Porto was very similar to the previous year in taxi-out and slightly worse for ASMA.

The shares of CDO flights are relatively high in 2022 with most airports having a reduction in the share of CDO flights.

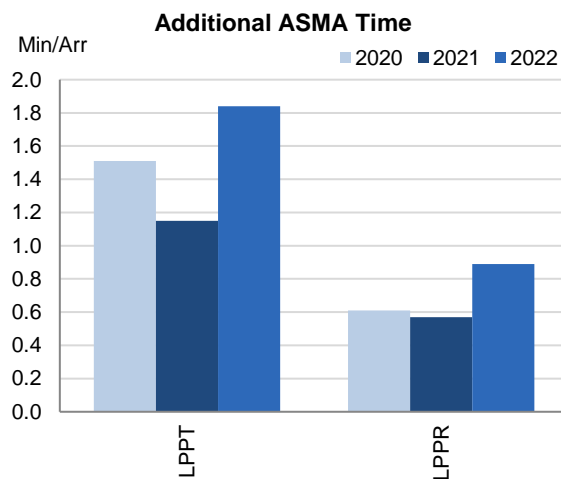
2. Additional Taxi-Out Time



Additional taxi-out times at Lisbon (LPPT; 2019: 3.96 min/dep.; 2020: 2.68 min/dep.; 2021: 1.93 min/dep.; 2022: 3.18 min/dep.) increased by 65% with respect to 2021 resulting well above the SES average of 2.52 min/dep.

According to the Portuguese monitoring report: *Regular performance and capacity reports by the ANSP are presented to the NSA in which the ENV KPI is specifically addressed.*

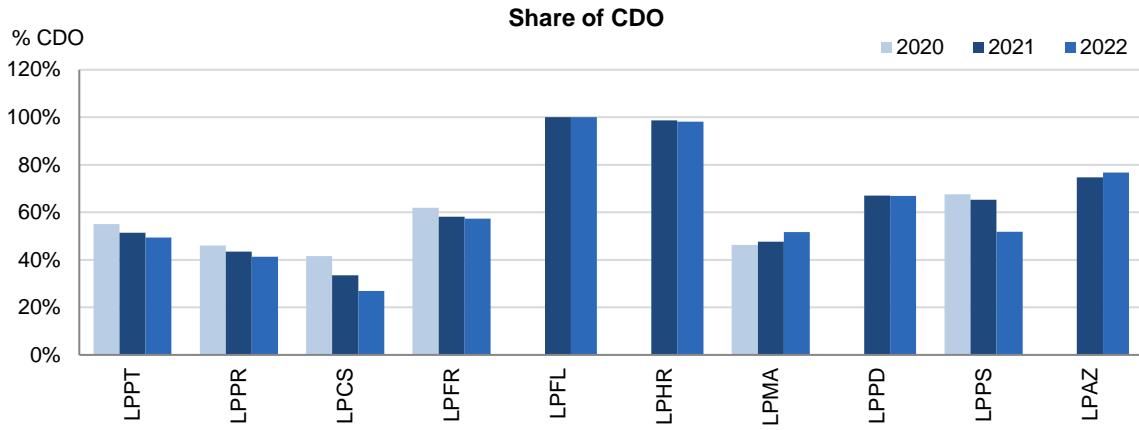
3. Additional ASMA Time



Like the additional taxi-out times, the additional times in the terminal airspace at Lisbon (LPPT; 2019: 2.75 min/arr.; 2020: 1.51 min/arr.; 2021: 1.15 min/arr.; 2022: 1.84 min/arr.) experimented an important increase in 2022 and resulted well above the SES average of 1.06 min/arr with the second highest value of all SES monitored airports.

At Porto (LPPR; 2019: 1.34 min/arr.; 2020: 0.61 min/arr.; 2021: 0.57 min/arr.; 2022: 0.89 min/arr.) the additional ASMA times also increased in 2022 but remain under 1 min. According to the Portuguese monitoring report: *Regular performance and capacity reports by the ANSP are presented to the NSA in which the ENV KPI is specifically addressed.*

4. Share of arrivals applying CDO



All airports except Cascais have shares of CDO flights well above the overall RP3 value in 2022 (29.0%), ranging from 26.9% (Cascais - LPCS) to 100.0% (Flores - LPFL). It should however be noted that Flores and Horta had a limited number of flights in 2022: respectively 1 and 215 arrivals.

Most airports have a reduction of the share of CDO flights, with a big reduction for Porto Santo by -13.6 percentage points.

According to the Portuguese monitoring report: *CDO is the basis for the arrival route structuring within Lisbon FIR. Nonetheless, most of the times a shorter route is provided to the arriving traffic. Since these shorter routes are not covered by the STARs, the resulting final CDO percentage is negatively affected, even though the traffic is flying more efficient and shorter routes.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Lisbon-LPPT | 2.68 | 1.93 | 3.18 | | | 1.51 | 1.15 | 1.84 | | | 55% | 51% | 49% | | |
| Porto-LPPR | 1.45 | 1.67 | 1.61 | | | 0.61 | 0.57 | 0.89 | | | 46% | 43% | 41% | | |
| Cascais-LPCS | - | - | - | | | - | - | - | | | 42% | 34% | 27% | | |
| Faro-LPFR | - | - | - | | | - | - | - | | | 62% | 58% | 57% | | |
| Flores-LPFL | - | - | - | | | - | - | - | | | n/a | 100% | 100% | | |
| Horta-LPHR | - | - | - | | | - | - | - | | | n/a | 99% | 98% | | |
| Madeira-LPMA | - | - | - | | | - | - | - | | | 46% | 48% | 52% | | |
| Ponta Delgada-LPPD | - | - | - | | | - | - | - | | | n/a | 67% | 67% | | |
| Porto Santo-LPPS | - | - | - | | | - | - | - | | | 68% | 65% | 52% | | |
| Santa Maria-LPAZ | - | - | - | | | - | - | - | | | n/a | 75% | 77% | | |

PORTUGAL

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Airspace design is established in accordance with the FUA principles for strategic, pre-tactical and tactical levels. The military training missions are conducted primarily within the restricted airspace associated with military aerodromes or, when necessary, at the temporary segregated airspace established at strategic level. This type of airspace usage results in direct and short transit routes to and from the established training areas. The average transit route extension between the military aerodromes and the training areas in Portugal is around 20NM.

Additionally, the average duration of the training missions, (not including the transit times) is one (1) hour, except during major exercises.

A close and active daily coordination between the military and the civil ANSP is, since long, the trademark of the Portuguese ASM. Also, the FUA coordination is supported by the Local and regional Airspace Management Tool (LARA), which enables the required level of civil military interoperability for the ASM process.

As a general assessment, the environmental impact of the military during the RP3 period is expected to be low, since the military training activity was reduced due to the pandemic, and the current airspace structure promotes the optimization of transit times between air bases and training areas, thus reducing the associated carbon footprint.

ASM is the main enabler to minimize the military impact on the capacity KPA, which is supported by the LARA tool, and is achieved through a close civil military cooperation at all the three FUA levels.

On a daily basis, the FUA level 2 and 3 is managed by the ASM cell which is jointly manned by civil and military personnel, co-located within the Lisbon ACC. This provides for a close liaison at both pre-tactical and tactical level.

Overall, the reduction of the military training activity, including exercises, should result in a low impact in capacity. Moreover, the activation of airspace under the FUA principle should not be included in any type of capacity reduction, since, in the current operational arrangements between the Portuguese civil ANSP and the military, the required blocks of airspace are only active between the actual time the military aircraft enter the area until the moment they vacate it, thus increasing capacity.

The current trend by some ANSP to include the use of FUA by the military as a "capacity reduction factor", is not only contrary to the principles contained in Regulation 2150/2005, it is also detrimental to the effort put by the military in the mission planning phase when establishing the airspace daily requirements.

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Portugal | | | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lisbon | | | | | |

Initiatives implemented or planned to improve PI#6

Implementation of the A_FUA functionality as per regulation 2021/116 will improve the use of airspace by both the civil and the military. Also with the implementation of the LARA tool more accurate statistic reports will be available to evaluate the FUA performance.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Portugal | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lisbon | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

LARA interfaces and associated statistic tools are in the final stages of implementation by the ANSP.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Portugal | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Lisbon | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

LARA interfaces and associated statistic tools are in the final stages of implementation by the ANSP.

PORTUGAL

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--------------------------------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.23 | 0.09 | 0.13 | 0.13 | 0.13 | |
| Actual performance | 0.25 | 0.07 | 0.67 | | | |

NSA's assessment of capacity performance

2022 was the much expected recovery year from the covid-19 pandemic. Traffic levels recovered to levels close to 2019, especially in the summer and year-end. Specifically, in Lisbon FIR, traffic recovered by 76%, when compared to 2021, but remained 6,3% below 2019 levels.

Further to the recovery in traffic, in Portugal ANS was marked by the change in the ATM System, that after some delays due to the COVID pandemic, was finally ready by October 2022. The transition to the new ATM system, was planned with the objective of maintaining the highest traffic levels that could be managed safely . As such, capacity reduction was kept to a minimum, with a direct impact in terms of delays.

The capacity KPI for en-route was highly affected by the implementation of the new ATM system in October, and the preparatory work that came with it. The new system implementation was carefully planned and prepared with 2 key objectives, assuring all the safety conditions, and at the same time minimize the impact at the network level and on users.

Unfortunately, the process had a significant toll in terms of delays in the Lisbon FIR, and at the Lisbon airport, which were the most affected by the process, leading to a non-compliance of both en-route and terminal delay targets

Monitoring process for capacity performance

NAV Portugal and ANAC have a capacity monitoring process in place that consists of quarterly reports and follow-up meetings to monitor and present corrective measures whenever necessary.

In particular in 2022, ANAC closely supervised the implementation of the new ATM System (TopSky), the measures taken to insure safety, and to minimize its impact in the overall system.

Capacity Planning

Regarding the ATFM En Route delay, the KPI's performance was particularly affected by the implementation of the new TOPSKY system, in NAV Portugal, which influenced the final value of the KPI (0.63min/flight)- well above the target for 2022 (0.13min/flight).

Nevertheless, discounting the causes associated with the implementation of TOPSKY, the ATFM en-route delay would have been approx. 0.15min/flight. Finally, It must be mentioned that the all process of TOPSKY's implementation has been coordinated with the most critical stakeholders like the: NM, Airspace users, Airports and NSA in order to minimize the impact of this transition at network and local level.

| ATCO in OPS (FTE) | | | | | | | Observations |
|---------------------|------|------|------|------|------|------|--------------|
| Lisbon ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 153 | 163 | 175 | 182 | |
| Actual | 146 | 148 | 147 | 150 | | | |

The current gap between the number of ATCOs planned and those that actually entered is mainly the result of two factors. The first, still relates with the impact of COVID which forced the interruption of the training cycle and as such delayed the entry of new ATCOs in 2022. As such it was not possible to reduce this gap.

The second factor has its origin in the implementation of the new TOPSKY system in 6 different units, which forced NAV Portugal to carry out a delay period of almost an year, in the admission of new ATCOs, so that when they entered they have already been trained for the new system.

Application of Corrective Measures for Capacity (if applicable)

The implementation process of the new ATM system (TOPSKY), namely during the months of July, October and November, originated capacity constraints and consequently additional delays that significantly degraded this indicator. It should be noted that the entire operation in 2022 was impacted by the TOPSKY implementation process, which required a very strict management of resources in order to respond as efficiently as possible to the training needs of Air Traffic Controllers (ATCO), the customization and parameterization of the system and the daily operation in the various ATC units.

The implementation of the TOPSKY system, previously scheduled for the month of March, was initially postponed to 26 September after talks with the Network Manager (NM), in order to minimize the impacts on the European network (EATMN), due to the overlap with the implementation of the 4FLIGHT ATM system in Reims (France). In this way it was possible to mitigate the impacts on the European network during the summer period.

However, the adverse side effect of this decision was the need to prolong the shadow operation in order to keep the ATCOs in a state of readiness adequate for the final phase of the ATM system transition, with the consequent challenges referred to above.

The transition plan was duly coordinated by the ANSP with ANAC, the air operators and the NM, with the latter highlighting NAV Portugal's availability to accommodate the new planning.

It should be noted in this regard that this new plan, scheduled to begin on September the 26th, contemplated 8 weeks for the final transition, a very demanding and ambitious period, compared to other identical processes. As an example, the transition to the 4FLIGHT system in Reims involved 6 months of air traffic restrictions and the implementation of TOPSKY in Prague 8 months of restrictions.

However, also this second plan suffered changes at the request of several air operators, especially those operating from Lisbon. Once again, the ANSP, trying as much as possible to minimize the impacts of ATM system transition, delayed the beginning of the final phase of transition by three weeks, to October 18th, bringing it as close as possible to IATA winter and, additionally, shortening it by two weeks, proposing to carry out the final phase of transition in only 6 weeks, with increments of capacity in each week.

Additionally, throughout the final phase of transition, in order to mitigate the impacts of a significant capacity decrease in the Lisbon FIR, all ATCOs were mobilized for the operation in order to allow the opening of the maximum number of sectors, accommodating higher traffic demand and reducing the need for restrictions.

Finally, it should be noted that the transition to a new ATM system is a highly complex process that requires the management of a wide set of variables and it is not possible to shorten the steps and time required to build confidence in the system, nor is it possible to offer more capacity than can be provided while ensuring the safety of air operations.

Other measures were implemented, including the issuing of a Ministerial Order derogating temporarily and to a limited extent, the restrictions to Lisbon airport operations between 00H00/02H00 and 05H00/06H00 (night curfew), during the critical period of reduction in the capacity derived from the final transition phase to the new ATM system.

As this was a one-off situation, there are no specific recommendations to the ANSP.

Summary of capacity performance

Portugal experienced an increase in traffic from 345k flights in 2021 to 610k flights in 2022. However, traffic levels were still below the 651k flights in 2019.

In 2022, Lisboa ACC had 404k minutes of en route ATFM delay 79% of which were attributed to 'Special event' & 'Other' - the implementation of TOPSKY ATM system. 17% of ATFM delays were attributed to ATC capacity and the remaining 4% of ATFM delays were attributed to ATC equipment.

The en route delay figures reported above include circa 20k minutes of en route ATFM delay, re-attributed from ENAIRE, under the NM post operations relay attribution process, due to capacity constraints, in Spain, stemming from the implementation of the TOPSKY project in Portugal.

PORTUGAL

CAPACITY - Airports

1. Overview

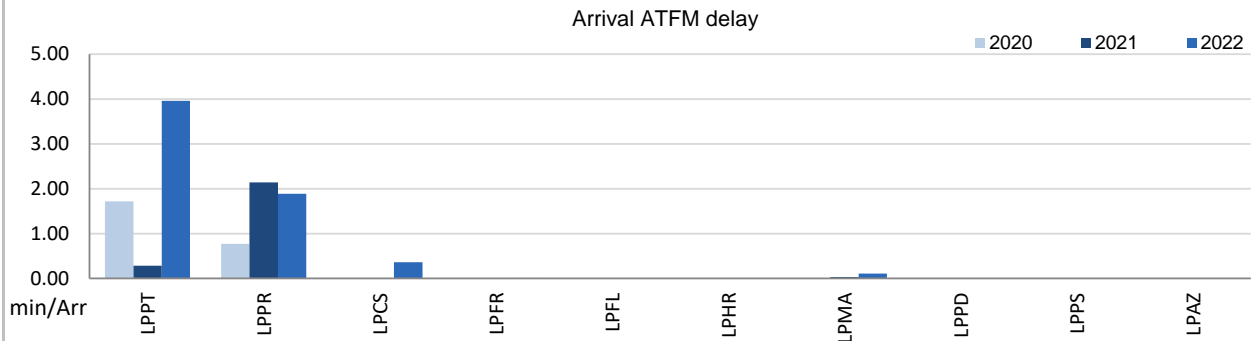
The scope of RP3 monitoring for Portugal comprises 10 airports in 2020. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Lisbon (LPPT) and Porto (LPPR)) must be monitored for pre-departure delays. The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly established where required and the monitoring of all capacity indicators can be performed.

Traffic at these 10 airports in 2022, after an increase of 67% versus 2021, was only 4% lower than in 2019.

Average arrival ATFM delays in 2022 was 2.31 min/arr, compared to 0.58 min/arr in 2021.

ATFM slot adherence has not changed and remains at 96,1% in 2022.

2. Arrival ATFM Delay

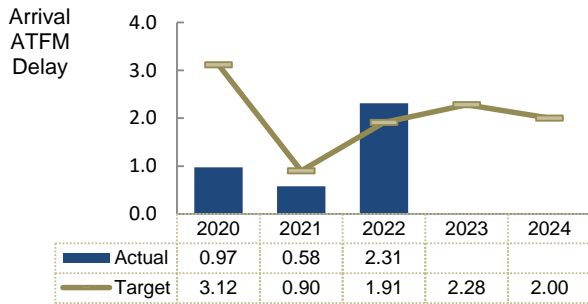


The national average arrival ATFM delay at Portuguese airports in 2022 was 2.31 min/arr, significantly higher than the 0.58 min/arr of 2021. This is driven by the deterioration of performance at Lisbon (LPPT; 2019: 4.13 min/arr; 2020: 1.72 min/arr; 2021: 0.28 min/arr; 2022: 3.96 min/arr). 33% of these delays were attributed to Aerodrome Capacity issues, 31% to Special Event (in relation to the TOPSKY implementation) and 25% to Weather.

At Porto (LPPR; 2019: 3.09 min/arr; 2020: 0.77 min/arr; 2021: 2.14 min/arr; 2022: 1.89 min/arr) delays have slightly decreased and 74% of them were attributed to weather.

According to the Portuguese monitoring report: ATFM arrival delay followed the same behaviour as the ATFM en Route delay, with several causes affecting at airport level. One of the main causes that affected Porto and Lisbon airport in 2022 was the implementation of the TOPSKY ATC system in Lisbon FIR. In the case of Lisbon the implementation of the new ATC system was responsible for 31% of all delay causes, with Weather and Aerodrome Capacity responsible for 68%. In the case of Porto, the implementation of the new ATC system contributed for 16% of all delay causes while Aerodrome capacity and weather contributed with 83%. One last remark for Madeira with 0,11 min/flight delay caused by Weather (0,10 min/flight) and the TOPSKY transition (0,01 min/flight) and Cascais with 0,36 min/flight caused by ATC capacity due to capacity restriction in Lisbon TMA since summer 2022.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

According to the Portuguese monitoring report: *As in the case of en-route, the implementation of the TopSky influenced significantly the performance at the Lisbon airport, where 1,22 minutes of delay/flight were due to the implementation of the new system. As for Porto airport, 1, 4 minutes of delay were associated to weather, or 75% of the delays registered.*

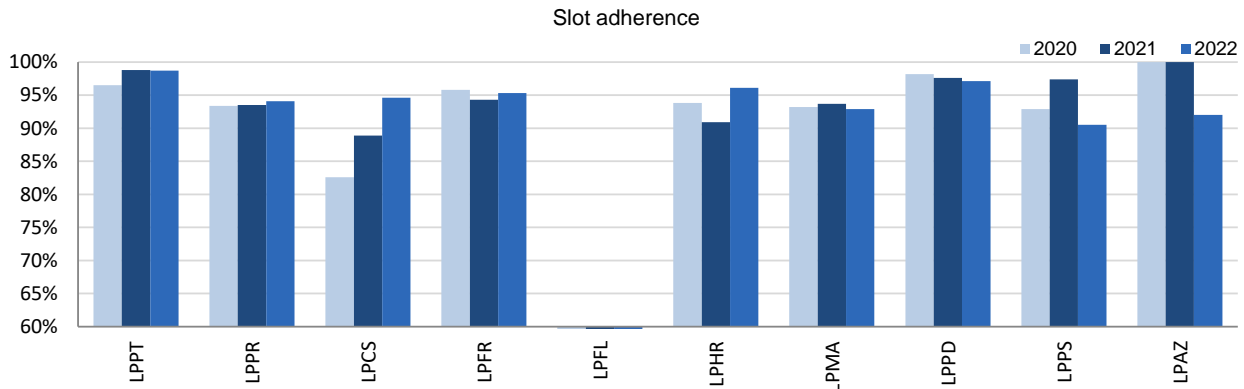
Considering the reasons for the incompliance with the capacity targets in these airports, ANAC along 2023 is monitoring performance more closely, especially taking into account the extraordinary recovery in traffic, which is already surpassing 2029 levels.

The monitoring report mentions the following remedial measures: *The recovery in traffic levels expected to occur in the summer of 2023 to levels above the ones registered in 2019, and the level of congestion of the Lisbon airport, together pose a risk to the proposed performance targets. At the present moment weekly traffic is already above the figures of 2019. These risks have been identified and are being managed by NAV Portugal through several actions.*

It is planned the implementation of the Point Merge System for Lisbon Airport, in the Winter 23/24 (training expected between October and November 2023 and implementation by February 2024), which will offer more flexibility to accommodate the traffic arriving to Lisbon during peak periods. Despite this, it should be emphasized that most of the delays at airport level in Lisbon are due to Aerodrome capacity since the airport infrastructure is at its limit.

The NSA has been supervising closely NAV Portugal's operation, and is hosting since February a working group to work on the operational restrictions of the Lisbon airport, in order to minimize the impact of congestion.

4. ATFM Slot Adherence



All Portuguese airports showed adherence around or above 90%.

The national average was 96.1%. With regard to the 3.9% of flights that did not adhere, 3% was early and 0.9% was late.

5. ATC Pre-departure Delay

The performance at Lisbon deteriorated with respect to the previous years as RP3 but remained below the delays of 2019 (LPPT; 2019: 4.16 min/dep.; 2020: 2.13 min/dep.; 2021: 1.22 min/dep.; 2022: 3.22 min/dep.) Nevertheless, like in previous years this delay is still the highest in the SES area.

The quality of the airport data reported by Porto has improved, allowing the calculation of this indicator for this airport in 2022 and resulting in 0.44 min/dep.

According to the Portuguese monitoring report: *ATC pre-departure delay Performance Indicator follows exactly the same trend as traffic growth. As traffic starts to increase in the main airports - Lisbon and Porto - ATC pre-departure delay starts to increase due to the fact that more traffic needs to be managed at ground level to keep an efficient operation at airport level. If we look back to 2019 figures, for the same period, this performance indicator shows 4,06 and 0,74 respectively for Lisbon and Porto Airport.*

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time significantly increased in 2022 at both Lisbon (LPPT: 2020: 12.02 min/dep.; 2021: 11.03 min/dep.; 2022: 25.21 min/dep.) and Porto (LPPR: 2020: 9.15 min/dep.; 2021: 10.70 min/dep.; 2022: 18,40 min/dep.)

According to the Portuguese monitoring report: *This performance indicator refers to all causes affecting a flight at airport level before its departure. Several causes contribute to the performance of this indicator. According EUROCONTROL -CODA in 2022, the main contributively causes for this indicator in Lisbon were reactionary and airline delay (both 68%) and ATC (En route and Airport) 24%. Compared with 2019 figures (19,6 min/departure), the last comparable year in teams of traffic, the main increase was in reactionary and airline component, from 12,1 min/departure to 17,0 min/departure. Concerning Porto, the trend is exactly the same. Main causes are Reactionary and Airline delay responsible for 82% for all departure delay. ATC is responsible for 17% of delay (2,9 min/departure). Compared with 2019 (15,7 min/departure) ,the main increase was at reactionary and airline delay component, from 11,2 min/departure to 13,0 min/departure. On the other way around, ATC delay has a small decrease from 3,1 min/departure in 2019 to 2,9min/departure in 2022.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------------|------------------------|------|------|------|------|----------------|--------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Lisbon-LPPT | 1.72 | 0.28 | 3.96 | | | 96.5% | 98.8% | 98.7% | | | 2.13 | 1.22 | 3.22 | | | 12.02 | 11.03 | 25.21 | | |
| Porto-LPPR | 0.77 | 2.14 | 1.89 | | | 93.4% | 93.5% | 94.1% | | | n/a | n/a | 0.44 | | | 9.15 | 10.70 | 18.40 | | |
| Cascais-LPCS | 0 | 0 | 0.36 | | | 82.6% | 88.9% | 94.6% | | | - | - | - | | | - | - | - | | |
| Faro-LPFR | 0 | 0 | 0.01 | | | 95.8% | 94.3% | 95.3% | | | - | - | - | | | - | - | - | | |
| Flores-LPFL | 0 | 0 | 0 | | | n/a | n/a | n/a | | | - | - | - | | | - | - | - | | |
| Horta-LPHR | 0 | 0 | 0 | | | 93.8% | 90.9% | 96.1% | | | - | - | - | | | - | - | - | | |
| Madeira-LPMA | 0 | 0.03 | 0.11 | | | 93.2% | 93.7% | 92.9% | | | - | - | - | | | - | - | - | | |
| Ponta Delgada-LPPD | 0 | 0 | 0 | | | 98.2% | 97.6% | 97.1% | | | - | - | - | | | - | - | - | | |
| Porto Santo-LPPS | 0 | 0 | 0 | | | 92.9% | 97.4% | 90.5% | | | - | - | - | | | - | - | - | | |
| Santa Maria-LPAZ | 0 | 0 | 0 | | | 100.0% | 100.0% | 92.0% | | | - | - | - | | | - | - | - | | |

PORTUGAL CONTINENTAL: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Portugal Continental ECZ represents 2.0% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 17 November 2021 and found consistent as per Commission Decision (EU) 2022/767 of 13 April 2022
The final version of the plan was adopted and published by Portugal in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Portugal Continental: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 115 523 007 | 117 279 296 | 232 802 303 | 139 106 168 | 150 290 389 | 154 572 715 |
| Inflation % | 0.0% | 0.9% | | 1.2% | 1.3% | 1.4% |
| Inflation index (100 in 2017) | 101.5 | 102.4 | | 103.6 | 104.9 | 106.4 |
| Real en route costs (€2017) | 114 095 861 | 115 019 714 | 229 115 575 | 135 200 935 | 144 619 857 | 147 095 309 |
| Total en route service units | 1 556 016 | 1 924 895 | 3 480 911 | 3 315 551 | 3 582 357 | 3 884 376 |
| Real en route DUC per service unit (€2017) | 73.33 | 59.75 | 65.82 | 40.78 | 40.37 | 37.87 |

| Portugal Continental: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 115 523 007 | 118 446 123 | 233 969 130 | 129 974 499 | | |
| Inflation % | 0.0% | 0.9% | | 8.1% | | |
| Inflation index (100 in 2017) | 101.5 | 102.4 | | 110.7 | | |
| Real en route costs (€2017) | 114 095 861 | 116 103 545 | 230 199 406 | 119 500 762 | | |
| Total en route service units | 1 556 016 | 1 988 333 | 3 544 349 | 3 695 099 | | |
| Real en route AUC per service unit (€2017) | 73.33 | 58.39 | 64.95 | 32.34 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-----------------|-------------|--------------|--------------|---------------|------|------|
| En route costs (nominal €) | in value | 0 | 1 166 827 | 1 166 827 | -9 131 669 | | |
| | in % | - | +1.0% | +0.5% | -6.6% | | |
| Inflation % | in p.p. | 0.0 p.p. | 0.0 p.p. | | 6.9 p.p. | | |
| | in p.p. | 0.0 p.p. | 0.0 p.p. | | 7.1 p.p. | | |
| Real en route costs (€2017) | in value | 0 | 1 083 831 | 1 083 831 | -15 700 173 | | |
| | in % | - | +0.9% | +0.5% | -11.6% | | |
| Total en route service units | in value | 0 | 63 438 | 63 438 | 379 548 | | |
| | in % | - | +3.3% | +1.8% | +11.4% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -1.36 | -0.87 | -8.44 | | |
| | in % | - | -2.3% | -1.3% | -20.7% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -20.7% (or -8.44 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-11.6%, or -15.7 M€2017) and significantly higher than planned TSUs (+11.4%). It should be noted that actual inflation index in 2022 was +7.1 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+11.4%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSPs and the airspace users, with the main ANSP (NAV Portugal) retaining an amount of +4.7 M€2017.

En route costs by entity

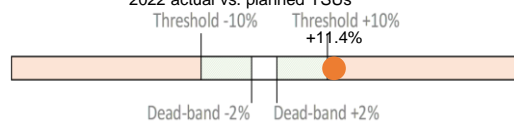
Actual real en route costs are -11.6% (-15.7 M€2017) lower than planned reflecting lower than planned costs in real terms for all the reporting entities: main ANSP, NAV Portugal (-12.5%, or -14.4 M€2017), the NSA/EUROCONTROL (-9.9%, or -0.9 M€2017), other ANSP (SAR provider, 6.8%, or -0.4 M€2017) and the MET service provider (-0.3%). It should be noted that, in nominal terms, the costs for the MET service provider were above the plan.

En route costs for the main ANSP (NAV Portugal) at charging zone level

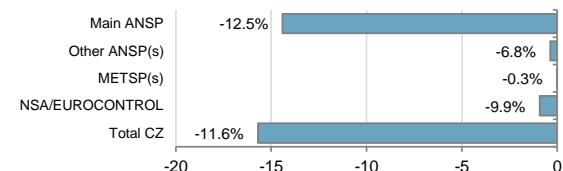
Significantly lower than planned en route costs in real terms for NAV Portugal in 2022 (-12.5%, or -14.4 M€2017) result from:

- Significantly lower staff costs (-11.3%) resulting from the performance of defined benefit pension plans.
- Significantly lower other operating costs (-9.5%) driven by savings on specialist services and travel.
- Significantly lower depreciation (-20.8%) reflecting the postponement of the implementation of the new ATM system.
- Significantly lower cost of capital (-23.0%) reflecting a significantly lower than planned asset base.

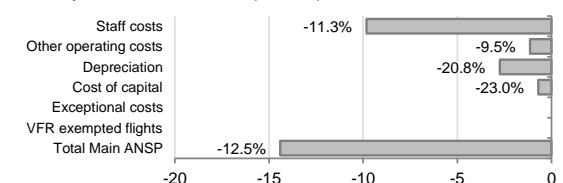
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



PORTUGAL CONTINENTAL: En route charging zone

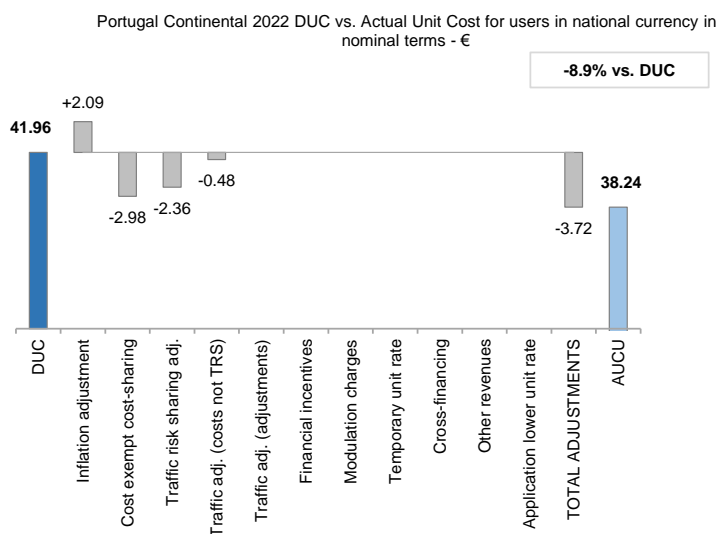
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 41.96 |
| DUC to be charged retroactively | 0.00 |
| DUC | 41.96 |
| Inflation adjustment | 2.09 |
| Cost exempt from cost-sharing | -2.98 |
| Traffic risk sharing adjustment | -2.36 |
| Traffic adj. (costs not TRS) | -0.48 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -3.72 |
| AUCU | 38.24 |
| AUCU vs. DUC | -8.9% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

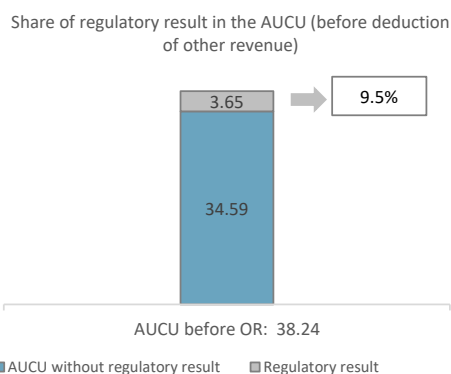
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|----------------|--------------|
| New and existing investments | -3 884 | -1.05 |
| Competent authorities and qualified entities costs | -80 | -0.02 |
| Eurocontrol costs | -840 | -0.23 |
| Pension costs | -6 192 | -1.68 |
| Interest on loans | 0 | 0.00 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | -10 996 | -2.98 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| NAV Portugal (Continental) | 13 242 | 3.58 |
| Portugal Continental SAR | 625 | 0.17 |
| METSP(s) | € '000 | €/SU |
| Portugal Continental MET | -383 | -0.10 |
| Total charging zone | 13 484 | 3.65 |
| Actual cost for users*** | 141 290 | 38.24 |
| Regulatory result (% AUCU) | 9.5% | 9.5% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (38.24 €) is -8.9% lower than the nominal DUC (41.96 €). The difference between these two figures (-3.72 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+2.09 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-2.98 €/SU);
- the deduction of the traffic risk sharing adjustments (-2.36 €/SU); and,
- the deduction of the traffic adjustment (-0.48 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 9.5%.

PORTUGAL CONTINENTAL: En route main ANSP (NAV Portugal)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

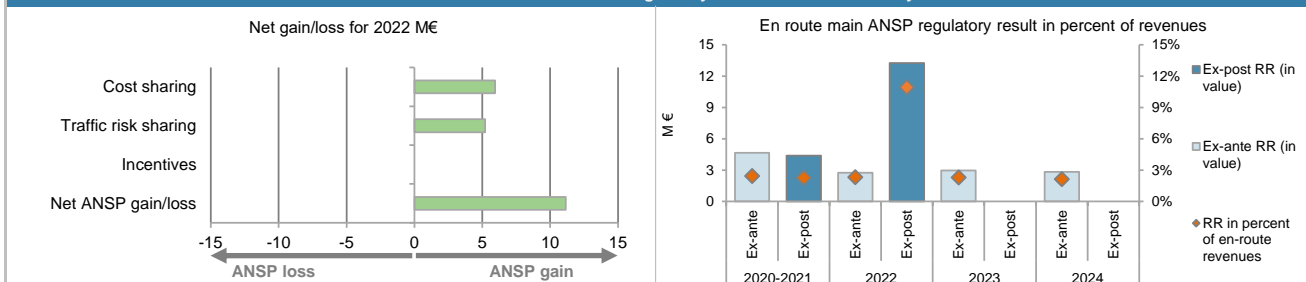
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -1 773 | 8 529 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 0 | 7 048 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -982 | -9 640 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -2 755 | 5 936 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.8% | 11.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 190 994 | 118 222 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 481 | 5 202 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 726 | 11 138 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| NAV Portugal (Continental) planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|----------------|----------------|----------------|----------------|
| Total asset base | 41 220 | 69 774 | 110 994 | 106 102 | 114 796 | 109 724 |
| Proportion of financing through equity (in %) | 70% | 70% | 70% | 61% | 61% | 61% |
| RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | 4.2% | 4.2% |
| RoE (in value) | 1 728 | 2 925 | 4 653 | 2 733 | 2 959 | 2 828 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 728 | 2 925 | 4 653 | 2 733 | 2 959 | 2 828 |
| Revenue for the en route charging zone | 95 572 | 96 616 | 192 188 | 118 833 | 129 814 | 133 840 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.8% | 3.0% | 2.4% | 2.3% | 2.3% | 2.1% |
| Ex-ante RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | 4.2% | 4.2% |
| NAV Portugal (Continental) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 41 220 | 45 915 | 87 134 | 81 682 | | |
| Proportion of financing through equity (in %) | 70% | 70% | 70% | 61% | | |
| RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | | |
| RoE (in value) | 1 728 | 1 925 | 3 653 | 2 104 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 726 | 726 | 11 138 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 728 | 2 651 | 4 379 | 13 242 | | |
| Revenue for the en route charging zone | 95 572 | 99 115 | 194 687 | 121 442 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.8% | 2.7% | 2.2% | 10.9% | | |
| Ex-post RoE pre-tax rate (in %) | 6.0% | 8.2% | 7.2% | 26.7% | | |

13. Focus on the main ANSP regulatory result on en route activity



NAV Portugal net gain on activity in the Portugal Continental en route charging zone in the year 2022

NAV Portugal reported a net gain of +11.1 M€, as a combination of a gain of +5.9 M€ arising from the cost sharing mechanism, with a gain of +5.2 M€ arising from the traffic risk sharing mechanism.

NAV Portugal overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+11.1 M€) and the actual RoE (+2.1 M€) amounts to +13.2 M€ (10.9% of the en route revenues). The resulting ex-post rate of return on equity is 26.7%, which is higher than the 4.2% planned in the PP.

PORTUGAL CONTINENTAL: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| Portugal Continental SAR planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 5 725 | 5 791 | 11 516 | 5 506 | 5 545 | 5 632 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Portugal Continental SAR actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 199 | 199 | 625 | | |
| Revenue for the en route charging zone | 5 725 | 6 001 | 11 726 | 6 093 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 3.3% | 1.7% | 10.3% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Portugal Continental MET planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 139 | 148 | 287 | 144 | 146 | 149 |
| Revenue for the en route charging zone | 5 524 | 5 610 | 11 134 | 5 489 | 5 593 | 5 719 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.5% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| Portugal Continental MET actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 139 | 115 | 254 | -383 | | |
| Revenue for the en route charging zone | 5 524 | 5 610 | 11 134 | 5 397 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.5% | 2.1% | 2.3% | -7.1% | | |
| Ex-post RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | -23.8% | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 139 | 148 | 287 | 144 | 146 | 149 |
| Revenue for the en route charging zone | 11 249 | 11 401 | 22 650 | 10 995 | 11 138 | 11 351 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.2% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 139 | 314 | 453 | 242 | | |
| Revenue for the en route charging zone | 11 249 | 11 611 | 22 860 | 11 490 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.2% | 2.7% | 2.0% | 2.1% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone Portugal Continental (SAR and MET providers) corresponds to 2.1% of the en route revenues. It should be noted that the SAR provider does not charge cost of capital. | | | | | | |

PORTUGAL: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|-----------------|---------------|---|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Portugal TCZ represents 2.9% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 10 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 8 Airports with more than 80,000 IFR mvmts: 2 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Portugal: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 34 829 936 | 33 103 732 | 67 933 668 | 39 079 710 | 42 067 274 | 43 963 676 |
| Inflation % | 0.0% | 0.9% | | 1.2% | 1.3% | 1.4% |
| Inflation index (100 in 2017) | 101.5 | 102.4 | | 103.6 | 104.9 | 106.4 |
| Real terminal costs (€2017) | 34 377 977 | 32 423 922 | 66 801 899 | 37 864 473 | 40 318 956 | 41 656 556 |
| Total terminal service units | 122 723 | 155 162 | 277 885 | 252 079 | 269 126 | 287 502 |
| Real terminal DUC per service unit (€2017) | 280.13 | 208.97 | 240.39 | 150.21 | 149.81 | 144.89 |
| Portugal: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 34 829 936 | 34 283 768 | 69 113 704 | 37 880 661 | | |
| Inflation % | 0.0% | 0.9% | | 8.1% | | |
| Inflation index (100 in 2017) | 101.5 | 102.4 | | 110.7 | | |
| Real terminal costs (€2017) | 34 377 977 | 33 584 305 | 67 962 282 | 34 576 971 | | |
| Total terminal service units | 122 723 | 160 329 | 283 052 | 280 660 | | |
| Real terminal AUC per service unit (€2017) | 280.13 | 209.47 | 240.11 | 123.20 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | 1 180 036 | 1 180 036 | -1 199 048 | |
| | in % | - | +3.6% | +1.7% | -3.1% | |
| Inflation % | in p.p. | 0.0 p.p. | 0.0 p.p. | | 6.9 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 0.0 p.p. | | 7.1 p.p. | |
| Real terminal costs (€2017) | in value | 0 | 1 160 383 | 1 160 383 | -3 287 502 | |
| | in % | - | +3.6% | +1.7% | -8.7% | |
| Total terminal service units | in value | 0 | 5 166 | 5 166 | 28 581 | |
| | in % | +0.00% | +3.3% | +1.9% | +11.3% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | 0.50 | -0.29 | -27.01 | |
| | in % | -0.0% | +0.2% | -0.1% | -18.0% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -18.0% (or -27.01 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TNSUs (+11.3%) and significantly lower than planned terminal costs in real terms (-8.7%, or -3.3 M€2017). It should be noted that actual inflation index in 2022 was +7.1 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>+11.3%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+11.3%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (NAV Portugal) retaining an amount of +1.5 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP -8.9%</p> <p>Other ANSP(s) -6.8%</p> <p>METSP(s) -4.5%</p> <p>NSA -6.8%</p> <p>Total CZ -8.7%</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -8.7% (-3.3 M€2017) lower than planned. This is the result of lower than planned costs for all the reporting entities: ANSP, NAV Portugal (-8.9%, or -3.2 M€2017), the MET service provider (-4.5%, or -0.1 M€2017) and the NSA (-6.8%, or -0.02 M€2017). It should be noted that, in nominal terms, the costs for the MET service provider were above the plan.</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -9.4%</p> <p>Other operating costs -6.9%</p> <p>Depreciation -4.4%</p> <p>Cost of capital -9.5%</p> <p>Exceptional costs -9.5%</p> <p>VFR exempted flights -9.5%</p> <p>Total Main ANSP -8.9%</p> | | | |
| <p>Terminal costs for the main ANSP (NAV Portugal) at charging zone level</p> <p>Lower than planned terminal costs in real terms for NAV Portugal in 2022 (-8.9%, or -3.2 M€2017) result from:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-9.4%) resulting from the performance of defined benefit pension plans; - Significantly lower other operating costs (-6.9%) driven by savings on specialist services and travel; - Lower depreciation (-4.4%); and, - Significantly lower cost of capital (-9.5%) reflecting a significantly lower than planned asset base. | | | | | | |

PORTUGAL: Terminal charging zone

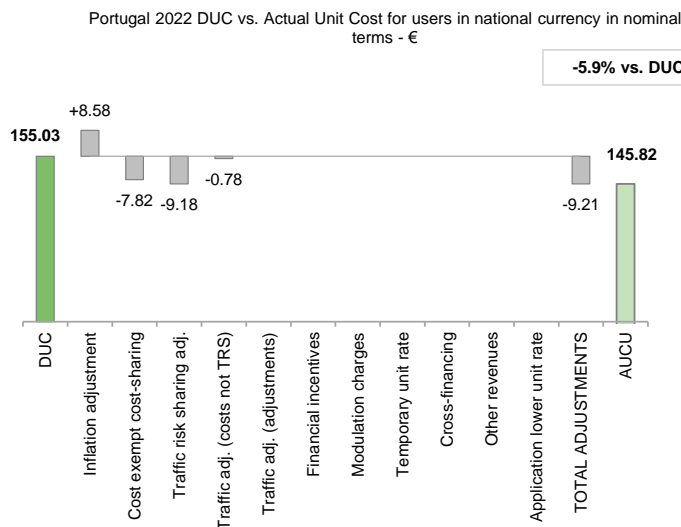
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 155.03 |
| DUC to be charged retroactively | 0.00 |
| DUC | 155.03 |
| Inflation adjustment | 8.58 |
| Cost exempt from cost-sharing | -7.82 |
| Traffic risk sharing adjustment | -9.18 |
| Traffic adj. (costs not TRS) | -0.78 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -9.21 |
| AUCU | 145.82 |
| AUCU vs. DUC | -5.9% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

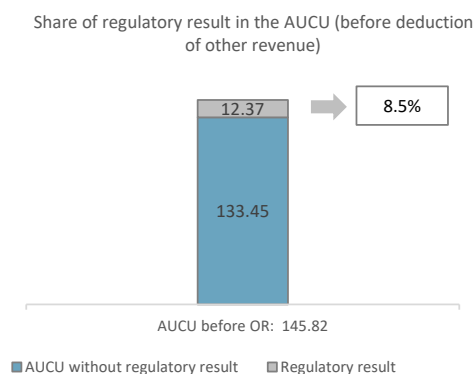
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| by item | € '000 | €/SU |
|--|---------------|--------------|
| New and existing investments | -288 | -1.03 |
| Competent authorities and qualified entities costs | -24 | -0.09 |
| Eurocontrol costs | 0 | 0.00 |
| Pension costs | -1 882 | -6.71 |
| Interest on loans | 0 | 0.00 |
| Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | -2 194 | -7.82 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|---------------|
| NAV Portugal (Continental) | 3 510 | 12.51 |
| METSP(s) | € '000 | €/SU |
| Portugal-MET | -38 | -0.14 |
| Total charging zone | 3 472 | 12.37 |
| Actual cost for users*** | 40 927 | 145.82 |
| Regulatory result (% AUCU) | 8.5% | 8.5% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (145.82 €) is -5.9% lower than the nominal DUC (155.03 €). The difference between these two figures (-9.21 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+8.58 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-7.82 €/SU);
- the deduction of the traffic risk sharing adjustments (-9.18 €/SU); and
- the deduction of the traffic adjustment (-0.78 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 8.5%.

PORTUGAL: Terminal main ANSP (NAV Portugal)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

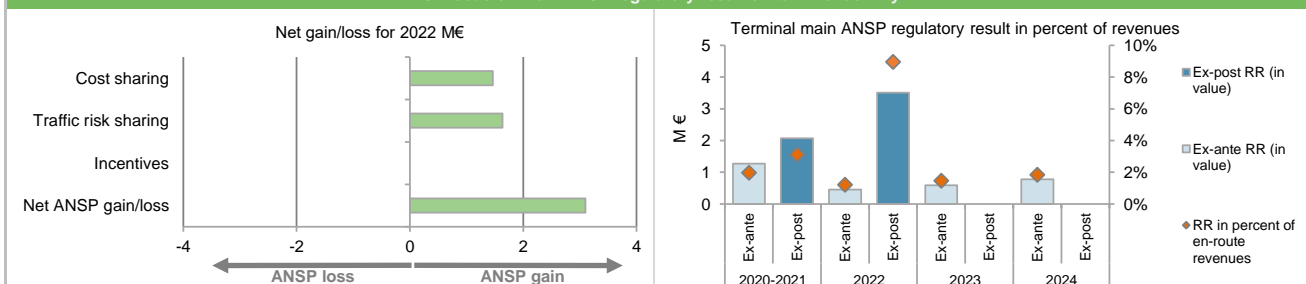
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -1 191 | 1 202 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 0 | 2 327 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 576 | -2 064 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -615 | 1 465 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.9% | 11.3% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 64 185 | 37 140 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 193 | 1 634 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 579 | 3 099 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| NAV Portugal (Continental) planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 15 774 | 14 545 | 30 319 | 17 634 | 23 044 | 30 207 |
| Proportion of financing through equity (in %) | 70% | 70% | 70% | 61% | 61% | 61% |
| RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | 4.2% | 4.2% |
| RoE (in value) | 661 | 610 | 1 271 | 454 | 593 | 777 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 661 | 610 | 1 271 | 454 | 593 | 777 |
| Revenue for the terminal charging zone | 33 223 | 31 442 | 64 665 | 37 377 | 40 329 | 42 191 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.0% | 1.9% | 2.0% | 1.2% | 1.5% | 1.8% |
| Ex-ante RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | 4.2% | 4.2% |
| NAV Portugal (Continental) actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 15 774 | 19 933 | 35 707 | 15 960 | | |
| Proportion of financing through equity (in %) | 70% | 70% | 70% | 61% | | |
| RoE pre-tax rate (in %) | 6.0% | 6.0% | 6.0% | 4.2% | | |
| RoE (in value) | 661 | 836 | 1 497 | 411 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 579 | 579 | 3 099 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 661 | 1 414 | 2 076 | 3 510 | | |
| Revenue for the terminal charging zone | 33 223 | 33 212 | 66 434 | 39 275 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.0% | 4.3% | 3.1% | 8.9% | | |
| Ex-post RoE pre-tax rate (in %) | 6.0% | 10.1% | 8.3% | 36.2% | | |

13. Focus on main ANSP regulatory result on terminal activity



NAV Portugal net gain on activity in the Portugal terminal charging zone in the year 2022

NAV Portugal reported a net gain of +3.1 M€, reflecting a combination of a gain of +1.5 M€ arising from the cost sharing mechanism and a gain of +1.6 M€ arising from the traffic risk sharing mechanism.

NAV Portugal overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+3.1 M€) and the actual RoE (+0.4 M€) amounts to +3.5 M€ (8.9% of the terminal revenues). The resulting ex-post rate of return on equity is 36.2%, which is significantly higher than the 4.2% planned in the PP.

PORTUGAL: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|---|-------|-------|------------|--------|-------|-------|
| Portugal-MET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 33 | 35 | 67 | 35 | 36 | 37 |
| Revenue for the terminal charging zone | 1 300 | 1 320 | 2 620 | 1 348 | 1 377 | 1 406 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.5% | 2.6% | 2.6% | 2.6% | 2.6% | 2.6% |
| Ex-ante RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |
| Portugal-MET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 33 | 27 | 60 | -38 | | |
| Revenue for the terminal charging zone | 1 300 | 1 320 | 2 620 | 1 322 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.5% | 2.1% | 2.3% | -2.9% | | |
| Ex-post RoE pre-tax rate (in %) | 4.0% | 4.0% | 4.0% | -10.0% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone Portugal (MET service provider) corresponds to -2.9% of the terminal revenues. The ex-post RoE of -10.0% is lower than planned 4.0%. | | | | | | |

PORTUGAL CONTINENTAL: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|----------------|---------------|---|----------------|---------------|-------------|------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Portugal Continental | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Portugal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portugal Continental: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 114 095 861 | 115 019 714 | 229 115 575 | 135 200 935 | 144 619 857 | 147 095 309 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 34 377 977 | 32 423 922 | 66 801 899 | 37 864 473 | 40 318 956 | 41 656 556 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 148 473 837 | 147 443 636 | 295 917 473 | 173 065 408 | 184 938 813 | 188 751 865 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 76.8% | 78.0% | 77.4% | 78.1% | 78.2% | 77.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portugal Continental: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 114 095 861 | 116 103 545 | 230 199 406 | 119 500 762 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 34 377 977 | 33 584 305 | 67 962 282 | 34 576 971 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 148 473 837 | 149 687 850 | 298 161 687 | 154 077 733 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 76.8% | 77.6% | 77.2% | 77.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 0 | 2 244 214 | 2 244 214 | -18 987 675 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 0.0% | 1.5% | 0.8% | -11.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in p.p. | | 0.0 p.p. | -0.4 p.p. | -0.2 p.p. | -0.6 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>77%</td> <td>23%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>78%</td> <td>22%</td> </tr> <tr> <td>Actual</td> <td>78%</td> <td>22%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>77%</td> <td>23%</td> </tr> <tr> <td>Actual</td> <td>77%</td> <td>23%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>78%</td> <td>22%</td> </tr> <tr> <td>Actual</td> <td>78%</td> <td>22%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>78%</td> <td>22%</td> </tr> <tr> <td>Actual</td> <td>78%</td> <td>22%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>78%</td> <td>22%</td> </tr> <tr> <td>Actual</td> <td>78%</td> <td>22%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 77% | 23% | Actual | 77% | 23% | 2021 | Determined | 78% | 22% | Actual | 78% | 22% | 2020-2021 | Determined | 77% | 23% | Actual | 77% | 23% | 2022 | Determined | 78% | 22% | Actual | 78% | 22% | 2023 | Determined | 78% | 22% | Actual | 78% | 22% | 2024 | Determined | 78% | 22% | Actual | 78% | 22% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 77% | 23% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 78% | 22% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -11.0% (-19.0 M€2017) lower than planned, as en route and terminal costs are below plans (-15.7 M€2017 and -3.3 M€2017 respectively).</p> <p>The actual share of en route in gate-to-gate ANS costs (77.6%) is slightly lower than planned in the PP for 2022 (78.1%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In € '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Ex-ante | | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NAV Portugal (Continental) | 3 187 | 156 210 | 2.0% | 16 752 | 160 716 | 10.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portugal Continental SAR | 0 | 5 506 | 0.0% | 625 | 6 093 | 10.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Portugal Continental MET | 179 | 6 837 | 2.6% | -421 | 6 719 | -6.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 3 366 | 168 553 | 2.0% | 16 956 | 173 528 | 9.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Portugal covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +17.0 M€ (+13.5 M€ for en route and +3.5 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 9.8% of gate-to-gate ANS revenues.</p> <p>This is significantly higher than the return planned for the year (2.0% of gate-to-gate revenues).</p> | | | | <p>Portugal Continental gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Portugal Continental gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>2.0%</td> </tr> <tr> <td>Ex-post</td> <td>9.8%</td> </tr> </tbody> </table> | | | Result Type | Percentage | Ex-ante | 2.0% | Ex-post | 9.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Percentage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 2.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 9.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Romania

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ROMANIA

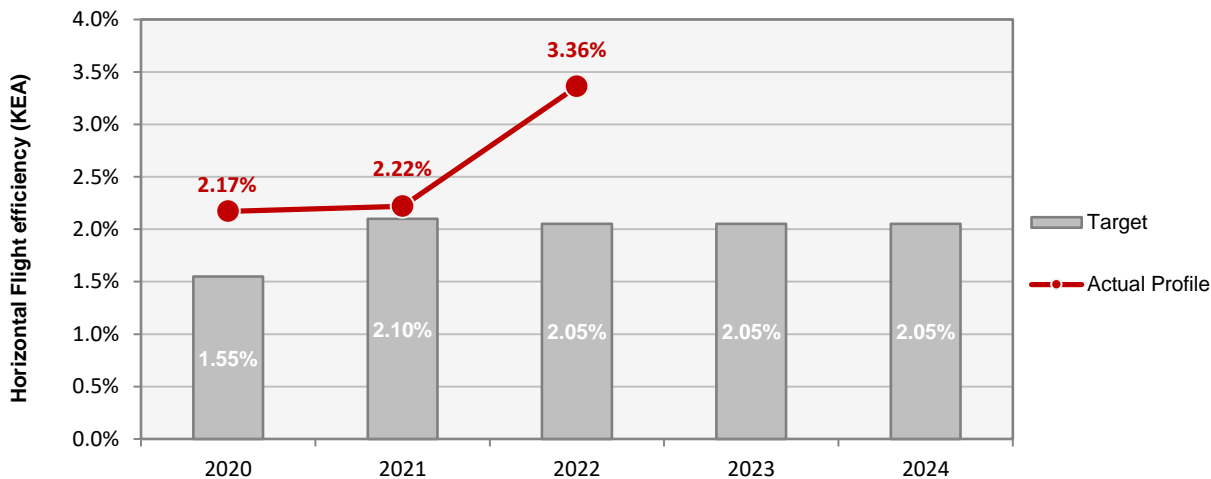
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Romatsa | 97 | D | C | D | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of the ANSP meet or exceed already the RP3 target level. Compared with 2021, in 2022 a decrease of maturity was observed for two questions in “Safety Assurance” and “Safety Promotion” components reducing the maturity from level D to the level C. The ANSP continues however to achieve the RP3 target level.</p> | | | | | | |

ROMANIA

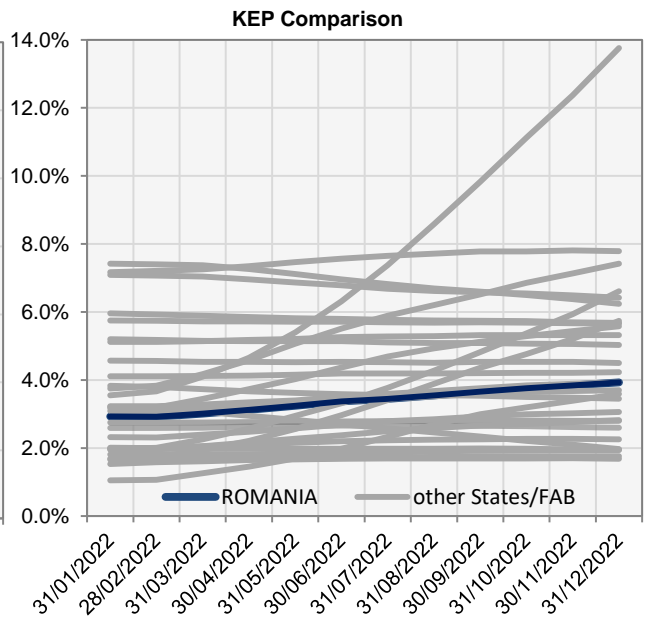
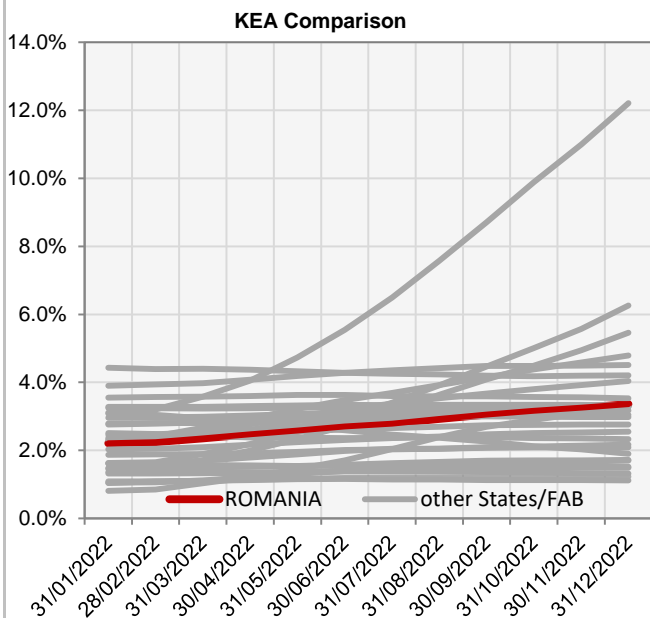
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.55% | 2.10% | 2.05% | 2.05% | 2.05% |
| Actual performance | 2.17% | 2.22% | 3.36% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.21% | 2.24% | 2.35% | 2.47% | 2.58% | 2.70% | 2.79% | 2.92% | 3.05% | 3.16% | 3.26% | 3.36% |
| KEP | 2.93% | 2.92% | 3.01% | 3.12% | 3.24% | 3.37% | 3.45% | 3.55% | 3.66% | 3.76% | 3.84% | 3.93% |
| KES | 2.17% | 2.20% | 2.34% | 2.50% | 2.70% | 2.93% | 3.08% | 3.27% | 3.44% | 3.59% | 3.71% | 3.84% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

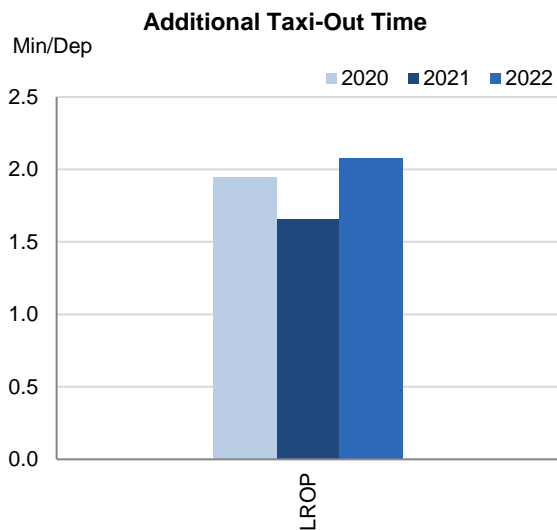
Romania includes 2 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Bucharest/Otopeni (LROP) must be monitored for additional taxi-out and ASMA times. The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly implemented where required and the monitoring of all environment indicators can be performed.

Traffic at these 2 airports in 2022 was still 16% lower than in 2019, regardless of a 39% increase with respect to 2021.

Additional taxi-out times increased in 2022 while the additional ASMA times showed similar levels as in 2021.

Both airports have shares of CDO flights that reduced slightly with respect to 2021 with Bucharest/Băneasa having a share of CDO flights just below the overall RP3 value of 29.0%.

2. Additional Taxi-Out Time



Additional taxi-out times at Bucharest/Otopeni (LROP; 2019: 2.67 min/dep.; 2020: 1.95 min/dep.; 2021: 1.66 min/dep.; 2022: 2.08 min/dep.) increased in 2022.

In the Romanian monitoring report, ROMATSA mentions the same measures or initiatives as last year, although no dates are provided:

a) *Implemented:*

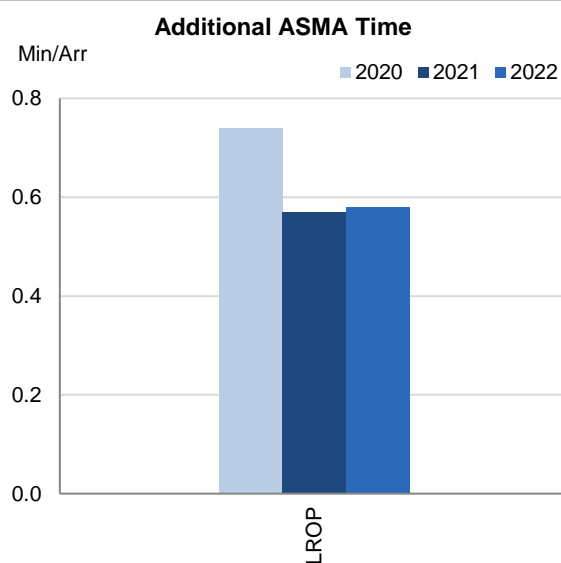
- clearance delivery position;
- A-SMGCS Level 1 at Otopeni TWR - advance surface management ground control system;
- Common procedure between Bucharest Airports National Company and TWR Otopeni for repairing works periods on the manoeuvring area, i.e. pre-established alternative standard taxi routes;
- Common procedure regarding ATFM (according to EU Reg 255/2010) regarding the regulation of traffic in situations that may influence the airport's capacity.

b) *Planned:*

- Modernisation ASMGCS - Implementation of Advanced Tower Messaging (ongoing);
- AMAN at Bucuresti TMA - Arrival Manager.

The NSA reports that they do *specific monitoring of data on EUROCONTROL portal and oversight activities*

3. Additional ASMA Time



Additional ASMA times at Bucharest/Otopeni (LROP; 2019: 0.75 min/arr.; 2020: 0.74 min/arr.; 2021: 0.57 min/arr.; 2022: 0.58 min/arr.) showed in 2022 the same level as the year before with low additional times.

In the Romanian monitoring report, ROMATSA mentions the same measures or initiatives as last year, although no dates are provided:

a) *Implemented:*

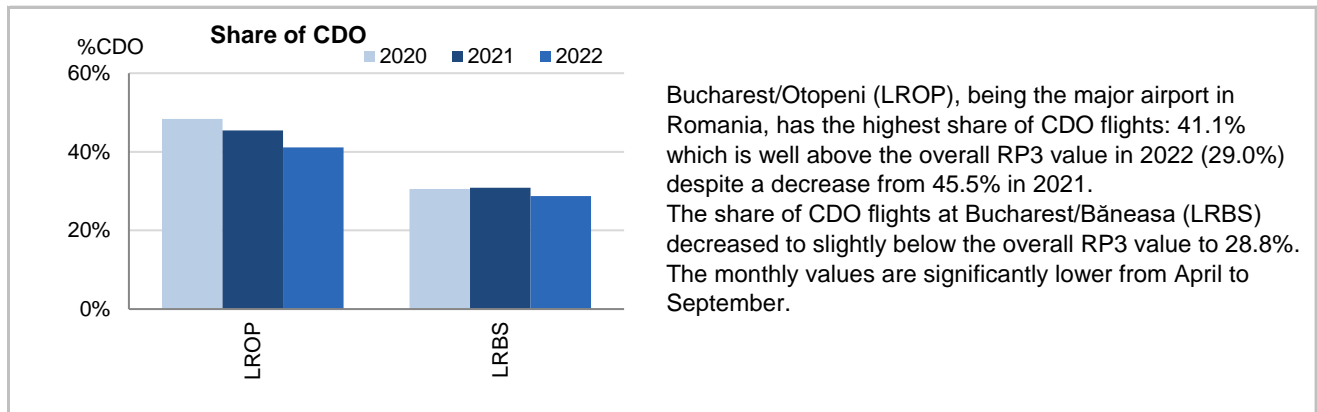
- SID / STAR RNAV 1;
- as current practice, vectorizations for shortening the trajectories when the traffic is of low complexity (DIRECT TO);
- Bucharest TMA resectorisation - implementation of new sector: DIRECTOR.

b) *Planned:*

- implementation of AMAN - Arrival Manager;
- implementation of RNP (required navigation performance) approach procedures.

The NSA reports that they do *specific monitoring of data on EUROCONTROL portal and oversight activities*.

4. Share of arrivals applying CDO



According to the Romanian monitoring report: ROMATSA: *Resumption of AIP Romania amendment process, chap. 2.21 Noise abatement procedures with the following specific provisions for aircraft operating at Otopeni Airport:*

"In order to reduce aircraft noise and emissions, ATC gives clearances allowing continuous descent (CD) traffic situation permitting. Continuous descent can be planned based on track distance information of the STAR or, when vectored, on estimated track distance provided by ATC. "

NSA: NSA is monitoring this indicator through LSSIP

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|-----------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Otopeni-Intl.-LROP | 1.95 | 1.66 | 2.08 | | | 0.74 | 0.57 | 0.58 | | | 48% | 45% | 41% | | |
| Bucharest AUREL VLAICU-LRBS | - | - | - | | | - | - | - | | | 31% | 31% | 29% | | |

ROMANIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

The FUA Concept is fully implemented in Romania at all specific levels, as follows: at Level 1 through National Air Space Management Council, at Level 2 through AMC, as civil-military body and at Level 3 through civil-military coordination offices collocated. At FAB level, an Air Space Policy Body is defined for strategic coordination between Romania and Bulgaria. Furthermore, Romanian operational procedures allow the crossing of most military training zones by civil aircraft with a prior coordination.

There has been an increase in military activity with ad-hoc MIL Areas and TSAs, leading to increased complexity in Bucuresti FIR. The geopolitical situation at Romania's borders and NATO's 2022 Strategic Concept adopted at the Madrid Summit that identifies the Russian Federation as "the most significant and direct threat to Allies' security and to peace and stability in the Euro-Atlantic area" lead to an increased military activity, on a permanent basis.

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Romania | 83% | 86% | 87% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bucharest | | | | | |

Initiatives implemented or planned to improve PI#6

ROMATSA: The FUA Concept is fully implemented in Romania at all specific levels, as follows: at Level 1 through National Air Space Management Council, at Level 2 through AMC, as civil-military body and at Level 3 through civil-military coordination offices collocated. At FAB level, an Air Space Policy Body is defined for strategic coordination between Romania and Bulgaria. Furthermore, Romanian operational procedures allow the crossing of most military training zones by civil aircraft with a prior coordination.

NSA: continuous oversight

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Romania | n/a | n/a | n/a | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bucharest | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7**PI#8 Rate of using available airspace structures - national level**

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Romania | n/a | n/a | n/a | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bucharest | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

ROMANIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | Observations |
|--|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | |
| National Target | 0.14 | 0.02 | 0.04 | 0.04 | 0.04 | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | |
| NSA's assessment of capacity performance | | | | | | |
| <p>The year 2022 has been deeply impacted, both economically and operationally, by the war in Ukraine. The Russian invasion and the subsequent restrictions and sanctions imposed have determined traffic flows that were already circumnavigating the conflict area following the events in 2014 to be pushed further to Romania's south-western part.</p> <p>Furthermore, new traffic flows prefer to cross atypically the Romanian airspace in this geopolitical context. Average distance/flight has increased compared to 2019 and this is visible also in the service units evolution that has outpaced the IFR movements trend in comparison with 2019. These, combined with the increased military activity, including ad-hoc activity focused not only in the NE part of Romania, but in the entirety of the airspace, have generated an increase in complexity.</p> <p>Romania/ANSP ROMATSA has achieved the Capacity targets in 2022. Although traffic has rebounded swiftly in Romanian airspace, coming close to pre-pandemic levels (88% of 2019 IFR movements with average around 95% for August-December 2022) and complexity has increased due to re-routings and higher military activity due to the war in Ukraine, ROMATSA has achieved 0 delay due to ATC.</p> | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>ROMATSA provided regularly inputs on capacity availability in the context of NOP Rolling Seasonal Plan implemented by the Network manager at European network level.</p> <p>The expected en-route performance was and is regularly evaluated by the NM for each ACC, including Bucuresti ACC, in terms of planned/maximum sector openings in relation with the estimated traffic demand.</p> | | | | | | |
| Capacity Planning | | | | | | |
| <p>The capacity as previously planned and published within an annual NOP (Network Operations Plan) has been adapted accordingly by adoption of capacity plans under a NOP Rolling Seasonal Plan format, including periods of 6 weeks, based on the expected traffic demand regularly provided by the Network Manager. These plans refer to:</p> <ul style="list-style-type: none"> - sector openings; - maximum possible sector openings; - availability of support of operational staff; - special events and projects, etc. <p>Bucuresti ACC ensured a stable sector opening plan with no sector capacity reduction, with the possibility to increase the number of sectors when traffic increased.</p> <p>Traffic values have increased in the aftermath of the COVID-19 pandemic and due to the re-routings caused by the war in Ukraine and the restrictions imposed. Traffic flows that were already circumnavigating the conflict area following the events in 2014 have been pushed further to Romania's south-western part.</p> <p>Furthermore, new traffic flows prefer to cross atypically the Romanian airspace in this geopolitical context. Average distance/flight has increased compared to 2019 and this is visible also in the service units evolution. From April 2023, the number of daily IFR movements in Romanian airspace has surpassed 2019 levels. These, combined with the increased military activity have generated an increase in complexity.</p> <p>Another risk is generated by ROMATSA's ageing ATCO personnel, especially in ACC Bucharest, where more than 1/3 of ATCOs are over 50 years old and will be over age 55 at the end of RP3. It takes between 3 to 5 years to fully train and authorize an ATCO for ACC, therefore a recruitment process was started in 2017 to guarantee proper staffing levels to ensure safety and capacity.</p> | | | | | | |

| ATCO in OPS (FTE) | | | | | | | Observations |
|--|------|------|------|------|------|------|--------------|
| Bucharest ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 219 | 239 | 244 | 262 | |
| Actual | 233 | 225 | 219 | 238 | | | |
| <p>ROMATSA has continued its recruitment process as planned to replace ageing ATCOs from ACC Bucharest. 24 ATCOs entered the OPS room, initially recruited in 2019 and who completed their training and authorization process during 2022. Another ATCO who had previously taken a management position, returned to the OPS room at a normal shift program. In the same time there were 6 ATCOs leaving the OPS room, of which 3 retired and 3 lost their licence due to medical conditions.</p> | | | | | | | |
| Additional information regarding Russia's war of aggression in Ukraine. | | | | | | | |
| <p>Traffic flows that were already circumnavigating the conflict area following the events in 2014 have been pushed further to Romania's south-western part (Examples of traffic flows: Russian Federation – Turkey, Turkey - Sweden, Poland - Israel, Lithuania - Turkey, Romania - Poland, Turkey - Finland, Russian Federation - Egypt, Poland - Qatar, United Kingdom - Romania; Turkey - Norway).</p> <p>Furthermore, new traffic flows prefer to cross atypically the Romanian airspace in this geopolitical context (Examples of the most affected flows : Russia-Turkey, United Kingdom – India, Republic of Korea – Germany, Australia - United Kingdom, Kazakhstan – Hungary, Qatar – Sweden, Pakistan - United Kingdom). These, combined with the increased military activity, scheduled or ad-hoc, focused not only in the NE part of Romania, but in the entirety of the airspace, have generated an increase in complexity.</p> <p>In 2022, as traffic values were still below the pre-pandemic level, ROMATSA managed to maintain a high-level of performance for en route capacity. However, the 2023 summer season, with traffic values forecasted well above the 2019 level and the reduction of available airspace due to military activity can prove more challenging for accommodating civilian air traffic at the required performance.</p> <p>Through application of FUA principles, civil-military coordination helped mitigate any possible impacts on en-route capacity performance.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Romania experienced an increase in traffic from 454k flights in 2021, to 656k flights in 2022, again with zero ATFM delay. Annual traffic levels were still below the 747k flights in 2019.</p> | | | | | | | |

ROMANIA

CAPACITY - Airports

1. Overview

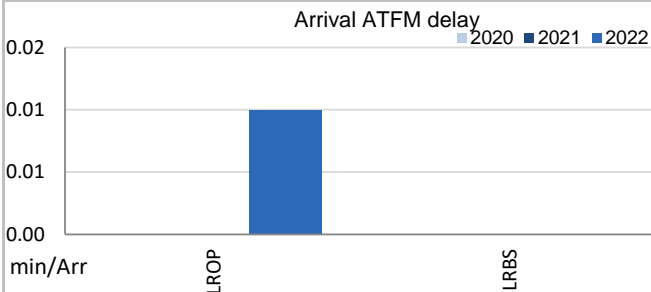
Romania includes 2 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Bucharest/Otopeni (LROP) must be monitored for the pre-departure delay indicators. The Airport Operator Data Flow, necessary for the monitoring of these delays, is correctly implemented where required and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting from Bucharest does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at these 2 airports in 2022 was still 16% lower than in 2019, regardless of a 39% increase with respect to 2021.

Average arrival ATFM delay in 2022 was 0.01 min/arr, compared to 0 min/arr in 2021.

ATFM slot adherence has improved (2022: 99.4%; 2021: 98.2%).

2. Arrival ATFM Delay



ROMATSA did not observe any airport ATFM delays at any of the Romanian airports under monitoring in 2020 and 2021.

In 2022, 294 min of delay in total were observed at Bucharest Otopeni (LROP: 2019: 0.01 min/arr; 2020: 0 min/arr.;2021: 0 min/arr.; 2022: 0.01 min/arr.) related to Aerodrome Capacity

According to the Romanian monitoring report: *ROMATSA and Bucharest Airports National Company continue to work together to ensure optimum capacity level at terminal level as this impacts the entire network. On one hand ROMATSA has implemented at Otopeni TWR a different ATM system with A-SMGCS Level 1 component, composed of a surveillance subsystem (operational for over three years) and an electronic flight strips subsystem (transferred into operations on April 8th 2019), interfaced via OLDI with the System covering the rest of the ATS units.*

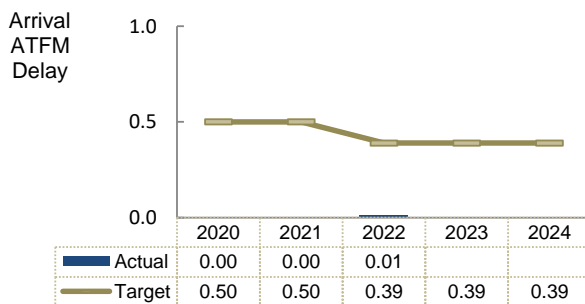
There is in place also a common procedure between Bucharest Airports National Company and TWR Otopeni for repairing works periods on the manoeuvring area, i.e. pre-established alternative standard taxi routes.

According to EU Reg 255/2010, a common procedure regarding ATFM for the regulation of traffic in situations that may influence the airport's capacity is in place.

Implementation of AMAN at Bucharest TMA is foreseen also during RP3 and also the upgrade of A-SMGCS Level 1 to include Advance Tower Messaging is ongoing.

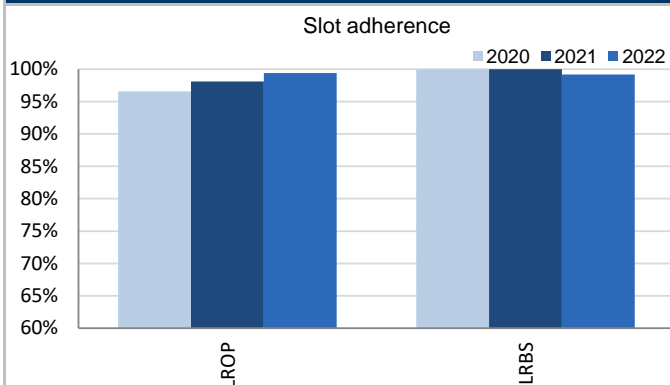
Regarding the impact of the war in Ukraine, the monitoring report mentions: *In the first weeks of Russia's war of aggression against Ukraine, there were a large number of repatriation flights to/from Romanian Airports.*

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



The national average, driven by Bucharest/Otopeni, was 99.4%, an improvement with respect to 2021's performance (98.2%). With regard to the 0.6% of flights that did not adhere, 0.4% was early and 0.1% was late.

The Romanian NSA reports: *Performance improved compared to 2021. According to EU Reg 255/2010 a common procedure regarding ATFM for the regulation of traffic in situations that may influence the airport's capacity is in place between Bucharest Airports National Company and ROMATSA.*

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Bucharest/Otopeni (the only Romanian airport subject to monitoring of this indicator).

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

Bucharest/Otopeni (LROP) had proper reporting before March 2020, but the share of unidentified delay rose well above 40% since the pandemic (preventing the calculation of this indicator) due to the special traffic composition. In 2022 the share of unidentified delay was above the 40% threshold for 5 months in the year.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Bucharest/Otopeni increased in 2022 (LROP: 2020: 10.22 min/dep.; 2021: 12.45 min/dep.; 2022: 22.67 min/dep.), with the highest delays observed in Summer.

According to the Romanian monitoring report: *In 2022 departure delays at LROP were due to aerodrome capacity. ROMATSA and Bucharest Airports National Company continue to work together to ensure optimum capacity level at terminal level as this impacts the entire network. On one hand ROMATSA has implemented at Otopeni TWR a different ATM system with ASMGCS component, composed of a surveillance subsystem (operational for over three years) and an electronic flight strips subsystem (transferred into operations on April 8th 2019), interfaced via OLDI with the System covering the rest of the ATS units. An upgrade to the system will be finalised in 2023 to include Advance Tower Messaging.*

There is in place also a common procedure between Bucharest Airports National Company and TWR Otopeni for repairing works periods on the manoeuvring area, i.e. pre-established alternative standard taxi routes.

According to EU Reg 255/2010, a common procedure regarding ATFM for the regulation of traffic in situations that may influence the airport's capacity is in place.

Implementation of AMAN at Bucuresti TMA is foreseen also during RP3.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|-----------------------------|------------------------|------|------|------|------|----------------|--------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Otopeni-Intl.-LROP | 0 | 0 | 0.01 | | | 96.6% | 98.1% | 99.4% | | | n/a | n/a | n/a | | | 10.22 | 12.45 | 22.67 | | |
| Bucharest AUREL VLAICU-LRBS | 0 | 0 | 0 | | | 100.0% | 100.0% | 99.2% | | | - | - | - | | | - | - | - | | |

ROMANIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|---|----------------------|---------------|---------------|--|---------------|---------------|
| <ul style="list-style-type: none"> Romania ECZ represents 3.0% of the SES en route ANS actual costs in 2022 National currency: RON Exchange rates (1 EUR=) 2017: 4.56629 RON 2022: 4.92795 RON Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2424 of 5 December 2022 The final version of the plan was adopted and published by Romania in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Romania: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal RON) | 829 103 803 | 862 516 826 | 1 691 620 629 | 999 844 521 | 1 137 701 999 | 1 208 532 282 |
| Inflation % | 2.3% | 2.8% | | 9.3% | 4.0% | 3.0% |
| Inflation index (100 in 2017) | 110.6 | 113.7 | | 125.9 | 130.9 | 134.8 |
| Real en route costs (RON2017) | 762 460 146 | 774 836 449 | 1 537 296 595 | 822 771 096 | 904 168 391 | 934 279 954 |
| Total en route service units | 2 245 622 | 2 898 081 | 5 143 703 | 4 583 000 | 5 531 000 | 5 825 000 |
| Real en route DUC per service unit (RON2017) | 339.53 | 267.36 | 298.87 | 179.53 | 163.47 | 160.39 |
| Real en route DUC per service unit (€2017) | 74.36 | 58.55 | 65.45 | 39.32 | 35.80 | 35.13 |
| Romania: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal RON) | 829 103 803 | 873 701 122 | 1 702 804 925 | 1 032 704 449 | | |
| Inflation % | 2.3% | 4.1% | | 12.0% | | |
| Inflation index (100 in 2017) | 110.6 | 115.2 | | 129.0 | | |
| Real en route costs (RON2017) | 762 460 146 | 775 923 757 | 1 538 383 903 | 829 979 488 | | |
| Total en route service units | 2 245 622 | 2 869 907 | 5 115 528 | 4 770 304 | | |
| Real en route AUC per service unit (RON2017) | 339.53 | 270.37 | 300.73 | 173.99 | | |
| Real en route AUC per service unit (€2017) | 74.36 | 59.21 | 65.86 | 38.10 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal RON) | in value 0 | 11 184 295 | 11 184 295 | 32 859 927 | | |
| | in % - | +1.3% | +0.7% | +3.3% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.3 p.p. | | 2.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.5 p.p. | | 3.1 p.p. | | |
| Real en route costs (RON2017) | in value 0 | 1 087 308 | 1 087 308 | 7 208 392 | | |
| | in % - | +0.1% | +0.1% | +0.9% | | |
| Total en route service units | in value 0 | -28 174 | -28 174 | 187 304 | | |
| | in % - | -1.0% | -0.5% | +4.1% | | |
| Real en route unit cost per service unit (RON2017) | in value 0.00 | 3.00 | 1.86 | -5.54 | | |
| | in % - | +1.1% | +0.6% | -3.1% | | |
| Real en route unit cost per service unit (€2017) | in value 0.00 | 0.66 | 0.41 | -1.21 | | |
| | in % - | +1.1% | +0.6% | -3.1% | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the en route AUC was -3.1% (or -5.54 RON2017, -1.21 €2017) lower than the planned DUC. This results from the combination of higher than planned TSUs (+4.1%) and slightly higher than planned en route costs in real terms (+0.9%, or +7.2 MRON2017, +1.6 M€2017). It should be noted that the actual inflation index in 2022 was +3.1 p.p. higher than planned.</p> <p>En route service units</p> <p>The difference between actual and planned TSUs (+4.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ROMATSA) retaining an amount of +4.0 M€2017.</p> <p>En route costs by entity</p> <p>The 2022 actual real en route costs are +0.9% (+1.6 M€2017) higher than planned. This is the result of higher than planned costs for the main ANSP, ROMATSA (+1.5%, or +2.5 M€2017) and lower than planned costs for the NSA/EUROCONTROL (-7.3%, or -0.9 M€2017).</p> <p>En route costs for the main ANSP (ROMATSA) at charging zone level</p> <p>Higher than planned en route costs in real terms for ROMATSA in 2022 (+1.5%, or +2.5 M€2017) result from:</p> <ul style="list-style-type: none"> - Higher than planned staff costs (+4.3%, or +5.7 M€2017), mainly due to higher than planned pension costs (+38.6% in nominal terms), compensation for inflation, 24 additional ATCOs in OPS to anticipate forthcoming retirements and "non-recurring amounts for the higher than planned traffic"; - Significantly lower than planned other operating costs (-14.3%, or -2.5 M€2017) reported to be mainly due to delays in procurement procedures; - Slightly higher than planned depreciation costs (+0.4%) reported to be due to investment put into operation earlier than planned; - Significantly lower than planned cost of capital (-8.7%, or -0.7 M€2017) reported to be due to delayed investments and procurement procedures and partially offset by increasing interest rate. The total asset base is also lower than planned (-11.3% in nominal terms). <p>Note: It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.</p> | | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>Costs by entity at ECZ level (M€2017):</p> <p>Costs by nature for main ANSP (M€2017):</p> | | |

ROMANIA: En route charging zone

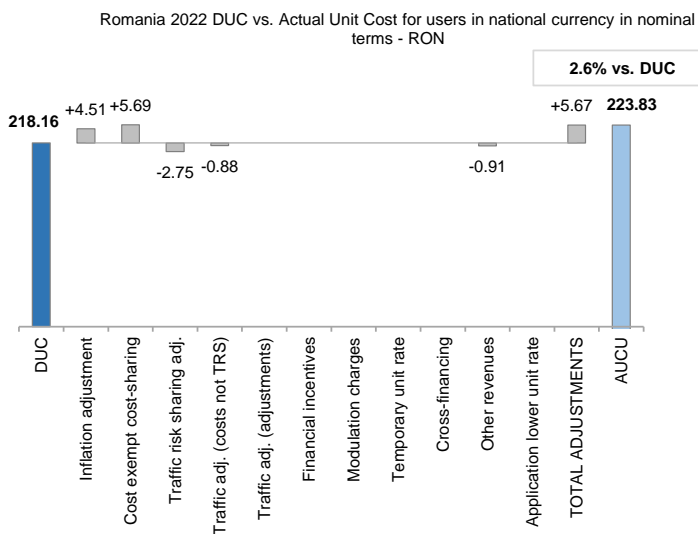
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | RON/SU | €/SU |
|---------------------------------|---------------|--------------|
| Initial DUC charged | 216.95 | 44.02 |
| DUC to be charged retroactively | 1.22 | 0.25 |
| DUC | 218.16 | 44.27 |
| Inflation adjustment | 4.51 | 0.91 |
| Cost exempt from cost-sharing | 5.69 | 1.16 |
| Traffic risk sharing adjustment | -2.75 | -0.56 |
| Traffic adj. (costs not TRS) | -0.88 | -0.18 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -0.91 | -0.18 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 5.67 | 1.15 |
| AUCU | 223.83 | 45.42 |
| AUCU vs. DUC | +2.6% | +2.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

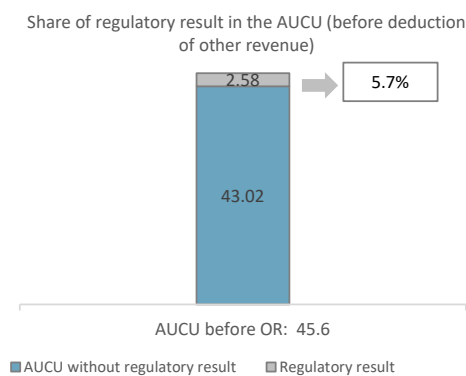
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | RON '000 | € '000 | RON/SU | €/SU |
|---|--|---------------|--------------|-------------|-------------|
| by item | New and existing investments | -1 033 | -210 | -0.22 | -0.04 |
| | Competent authorities and qualified entities costs | -3 036 | -616 | -0.64 | -0.13 |
| | Eurocontrol costs | -965 | -196 | -0.20 | -0.04 |
| | Pension costs | 32 057 | 6 505 | 6.72 | 1.36 |
| | Interest on loans | 134 | 27 | 0.03 | 0.01 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | 27 157 | 5 511 | 5.69 | 1.16 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | RON '000 | € '000 | RON/SU | €/SU |
|-----------------------------------|------------------|----------------|---------------|--------------|
| ROMATSA | 60 741 | 12 326 | 12.73 | 2.58 |
| METSP(s) | | | | |
| | | | | |
| Total charging zone | 60 741 | 12 326 | 12.73 | 2.58 |
| Actual cost for users*** | 1 072 069 | 217 549 | 224.74 | 45.60 |
| Regulatory result (% AUCU) | 5.7% | 5.7% | 5.7% | 5.7% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (223.83 RON or 45.42 €) is +2.6% higher than the nominal DUC (218.16 RON or 44.27 €). The difference between these two figures (+5.67 RON/SU or +1.15 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+4.51 RON/SU or +0.91 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+5.69 RON/SU or +1.16 €/SU);
- the deduction of the traffic risk sharing adjustments (-2.75 RON/SU or -0.56 €/SU);
- the deduction of the traffic adjustment (-0.88 RON/SU or -0.18 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.91 RON/SU or -0.18 €/SU).

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is 5.7%.

ROMANIA: En route main ANSP (ROMATSA)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

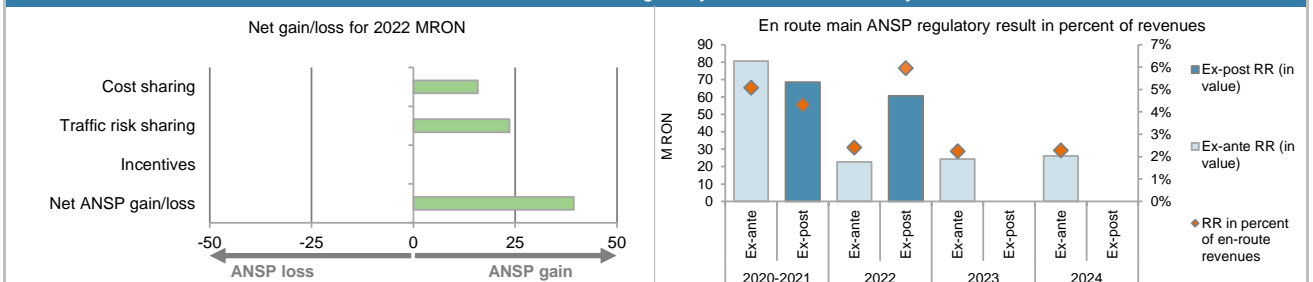
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|----------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -17 013 | -36 861 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 9 543 | 21 504 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -52 | 31 158 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -7 522 | 15 801 | | |
| Traffic risk sharing (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -0.5% | 4.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 507 906 | 897 303 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -8 259 | 23 564 | | |
| Incentives (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (RON '000) | -15 782 | 39 365 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | -3 209 | 7 988 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ROMATSA planned regulatory result (RON '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|------------------|------------------|------------------|
| Total asset base | 534 225 | 526 173 | 1 060 398 | 584 892 | 651 607 | 670 123 |
| Proportion of financing through equity (in %) | 93% | 57% | 75% | 50% | 48% | 53% |
| RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.1% | 7.8% | 7.8% | 7.4% |
| RoE (in value) | 45 310 | 35 264 | 80 574 | 22 727 | 24 285 | 26 173 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 45 310 | 35 264 | 80 574 | 22 727 | 24 285 | 26 173 |
| Revenue for the en route charging zone | 779 258 | 809 552 | 1 588 810 | 945 254 | 1 083 590 | 1 152 229 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.8% | 4.4% | 5.1% | 2.4% | 2.2% | 2.3% |
| Ex-ante RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.1% | 7.8% | 7.8% | 7.4% |
| ROMATSA actual regulatory result (RON '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 534 225 | 522 628 | 1 056 853 | 519 000 | | |
| Proportion of financing through equity (in %) | 93% | 64% | 78% | 53% | | |
| RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.2% | 7.8% | | |
| RoE (in value) | 45 310 | 38 972 | 84 282 | 21 377 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | -15 782 | -15 782 | 39 365 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 45 310 | 23 190 | 68 501 | 60 741 | | |
| Revenue for the en route charging zone | 779 258 | 810 783 | 1 590 042 | 1 021 480 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.8% | 2.9% | 4.3% | 5.9% | | |
| Ex-post RoE pre-tax rate (in %) | 9.1% | 7.0% | 8.3% | 22.1% | | |

13. Focus on the main ANSP regulatory result on en route activity



ROMATSA net gain on activity in the Romania en route charging zone in the year 2022

ROMATSA reported a net gain of +39.4 MRON, as a combination of a gain of +15.8 MRON arising from the cost sharing mechanism, with a gain of +23.6 MRON arising from the traffic risk sharing mechanism.

ROMATSA overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+39.4 MRON) and the actual RoE (+21.4 MRON) amounts to +60.7 MRON (5.9% of the en route revenues). The resulting ex-post rate of return on equity is 22.1%, which is higher than the 7.8% planned in the PP.

ROMANIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|----------------------|-----------------|-----------------|--|-----------------|-----------------|
| <ul style="list-style-type: none"> Romania TCZ represents 1.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 2 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 1 Airports with more than 80,000 IFR mvmts: 1 National currency: RON Exchange rates (1 EUR=) 2017: 4.56629 RON 2022: 4.92795 RON Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Romania: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal RON) | 76 128 704 | 88 591 319 | 164 720 024 | 97 263 290 | 109 965 411 | 113 486 715 |
| Inflation % | 2.3% | 2.8% | | 9.3% | 4.0% | 3.0% |
| Inflation index (100 in 2017) | 110.6 | 113.7 | | 125.9 | 130.9 | 134.8 |
| Real terminal costs (RON2017) | 69 727 232 | 79 065 826 | 148 793 058 | 78 876 018 | 86 224 223 | 86 638 794 |
| Total terminal service units | 31 587 | 47 000 | 78 587 | 67 000 | 71 000 | 74 000 |
| Real terminal DUC per service unit (RON2017) | 2 207.47 | 1 682.25 | 1 893.35 | 1 177.25 | 1 214.43 | 1 170.79 |
| Real terminal DUC per service unit (€2017) | 483.43 | 368.41 | 414.64 | 257.81 | 265.95 | 256.40 |
| Romania: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal RON) | 76 128 704 | 85 147 248 | 161 275 952 | 105 047 407 | | |
| Inflation % | 2.3% | 4.1% | | 12.0% | | |
| Inflation index (100 in 2017) | 110.6 | 115.2 | | 129.0 | | |
| Real terminal costs (RON2017) | 69 727 232 | 75 167 703 | 144 894 934 | 83 012 410 | | |
| Total terminal service units | 31 587 | 43 395 | 74 982 | 63 333 | | |
| Real terminal AUC per service unit (RON2017) | 2 207.47 | 1 732.19 | 1 932.40 | 1 310.73 | | |
| Real terminal AUC per service unit (€2017) | 483.43 | 379.34 | 423.19 | 287.04 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal RON) | in value 0 | -3 444 071 | -3 444 071 | 7 784 116 | | |
| | in % - | -3.9% | -2.1% | +8.0% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.3 p.p. | | 2.7 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.5 p.p. | | 3.1 p.p. | | |
| Real terminal costs (RON2017) | in value 0 | -3 898 123 | -3 898 123 | 4 136 392 | | |
| | in % - | -4.9% | -2.6% | +5.2% | | |
| Total terminal service units | in value 0 | -3 605 | -3 605 | -3 667 | | |
| | in % - | -7.7% | -4.6% | -5.5% | | |
| Real terminal unit cost per service unit (RON2017) | in value 0.00 | 49.93 | 39.05 | 133.48 | | |
| | in % - | +3.0% | +2.1% | +11.3% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | 10.94 | 8.55 | 29.23 | | |
| | in % - | +3.0% | +2.1% | +11.3% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was +11.3% (or +133.48 RON2017, +29.23 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-5.5%) and significantly higher than planned terminal costs in real terms (+5.2%, or +4.1 MRON2017, +0.9 M€2017). It should be noted that the actual inflation index in 2022 was +3.1 p.p. higher than planned.</p> | | | | | | |
| <p>Terminal service units</p> <p>The difference between the 2022 actual and planned TNSUs (-5.5%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ROMATSA) bearing a loss of -0.5 M€2017.</p> | | | | | | |
| <p>Terminal costs by entity</p> <p>The 2022 actual real terminal costs are +5.2% (or +0.9 M€2017) higher than planned. This is results from higher than planned costs for the main ANSP, ROMATSA (+5.6%, or +1.0 M€2017) and lower than planned costs for the NSA (-33.1%, or -0.1 M€2017).</p> | | | | | | |
| <p>Terminal costs for the main ANSP (ROMATSA) at charging zone level</p> <p>The 2022 actual real terminal costs for ROMATSA in 2022 are higher than planned (+5.6%, or +1.0 M€2017); this results from:</p> <ul style="list-style-type: none"> Slightly higher than planned staff costs (+1.8%, or +0.2 M€2017) due to higher than planned pension costs and staff compensation for inflation, Significantly higher than planned other operating costs (+44.1%, or +1.0 M€2017) due to a provision for risk of customers insolvency; Slightly lower than planned depreciation (-0.9%), due to one investment slightly delayed, Significantly lower than planned cost of capital (-15.1%, or -0.1 M€2017) reported to be mainly due to delayed investment; Significantly lower than planned deduction for VFR exempted flights (-67.8%) but the impact in value is limited. <p>Note: It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.</p> | | | | | | |
| | | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>-5.5%</p> <p>Dead-band -2% Dead-band +2%</p> | | |
| | | | | <p>Costs by entity at TCZ level (M€2017):</p> <p>Main ANSP +5.6%</p> <p>Other ANSP(s)</p> <p>METSP(s)</p> <p>NSA -33.1%</p> <p>Total CZ +5.2%</p> | | |
| | | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs +1.8%</p> <p>Other operating costs +44.1%</p> <p>Depreciation -0.9%</p> <p>Cost of capital -15.1%</p> <p>Exceptional costs</p> <p>VFR exempted flights -67.8%</p> <p>Total Main ANSP +5.6%</p> | | |

ROMANIA: Terminal charging zone

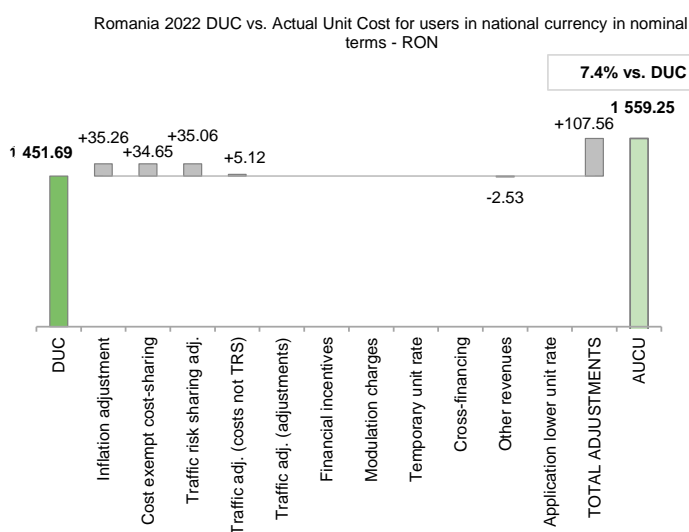
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | RON/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 1 336.89 | 271.29 |
| DUC to be charged retroactively | 114.80 | 23.30 |
| DUC | 1 451.69 | 294.58 |
| Inflation adjustment | 35.26 | 7.15 |
| Cost exempt from cost-sharing | 34.65 | 7.03 |
| Traffic risk sharing adjustment | 35.06 | 7.11 |
| Traffic adj. (costs not TRS) | 5.12 | 1.04 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -2.53 | -0.51 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 107.56 | 21.83 |
| AUCU | 1 559.25 | 316.41 |
| AUCU vs. DUC | 7.4% | 7.4% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

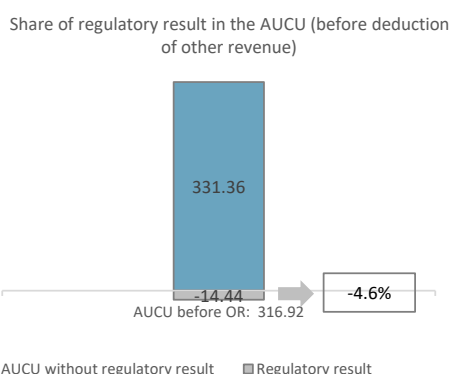
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | RON '000 | € '000 | RON/SU | €/SU |
|---|--|-------------|------------|--------------|-------------|
| by item | New and existing investments | -386 | -78 | -6.09 | -1.24 |
| | Competent authorities and qualified entities costs | -236 | -48 | -3.72 | -0.76 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 2805 | 569 | 44.29 | 8.99 |
| | Interest on loans | 11 | 2 | 0.17 | 0.03 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | 2195 | 445 | 34.65 | 7.03 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | RON '000 | € '000 | RON/SU | €/SU |
|-----------------------------------|---------------|---------------|-----------------|---------------|
| ROMATSA | -4506 | -914 | -71.15 | -14.44 |
| METSP(s) | | | | |
| | | | | |
| Total charging zone | -4506 | -914 | -71.15 | -14.44 |
| Actual cost for users*** | 98 912 | 20 072 | 1 561.78 | 316.92 |
| Regulatory result (% AUCU) | -4.6% | -4.6% | -4.6% | -4.6% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 13)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of the activities performed in 2022 (1 559.25 RON or 316.41 €) is +7.4% higher than the nominal DUC (1 451.69 RON or 294.58 €). The difference between these two figures (+107.56 RON/SU or +21.83 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+35.26 RON/SU or +7.15 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+34.65 RON/SU or +7.03 €/SU);
- the addition of the traffic risk sharing adjustments (+35.06 RON/SU or +7.11 €/SU);
- the addition of the traffic adjustment (+5.12 RON/SU or +1.04 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-2.53 RON/SU or -0.51 €/SU).

The share of the regulatory result (see items 10 to 13) in the AUCU (before the deduction of other revenues) is -4.6%.

ROMANIA: Terminal main ANSP (ROMATSA)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

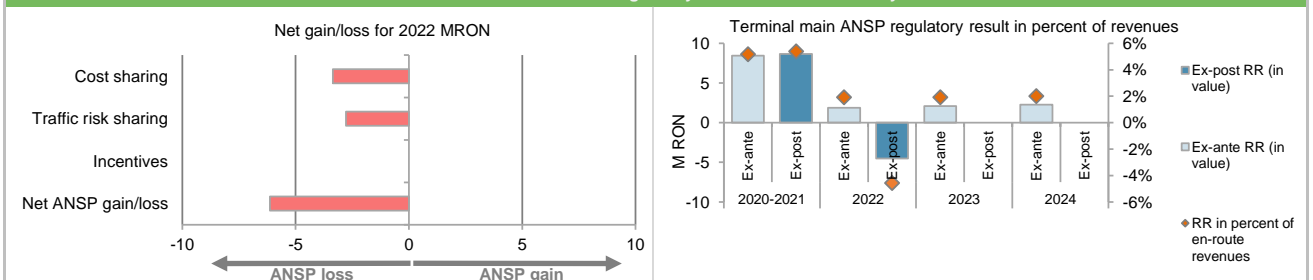
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 3 200 | -8 020 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 037 | 2 233 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -7 | 2 430 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 4 229 | -3 357 | | |
| Traffic risk sharing (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | -4.6% | -5.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 154 732 | 91 337 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | -4 296 | -2 778 | | |
| Incentives (RON '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (RON '000) | -67 | -6 135 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | -14 | -1 245 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ROMATSA planned regulatory result (RON '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|---|---------------|---------------|----------------|---------------|----------------|----------------|
| Total asset base | 56 199 | 55 115 | 111 314 | 47 930 | 56 290 | 57 937 |
| Proportion of financing through equity (in %) | 93% | 57% | 75% | 50% | 48% | 53% |
| RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.1% | 7.8% | 7.8% | 7.4% |
| RoE (in value) | 4 767 | 3 694 | 8 460 | 1 862 | 2 102 | 2 267 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 4 767 | 3 694 | 8 460 | 1 862 | 2 102 | 2 267 |
| Revenue for the terminal charging zone | 75 560 | 87 987 | 163 547 | 96 551 | 109 197 | 112 583 |
| Ex-ante regulatory result (+/-) in percent of revenues | 6.3% | 4.2% | 5.2% | 1.9% | 1.9% | 2.0% |
| Ex-ante RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.1% | 7.8% | 7.8% | 7.4% |
| ROMATSA actual regulatory result (RON '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 56 199 | 53 018 | 109 216 | 39 537 | | |
| Proportion of financing through equity (in %) | 93% | 64% | 79% | 53% | | |
| RoE pre-tax rate (in %) | 9.1% | 11.7% | 10.1% | 7.8% | | |
| RoE (in value) | 4 767 | 3 955 | 8 721 | 1 628 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | -67 | -67 | -6 135 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone | 4 767 | 3 888 | 8 654 | -4 506 | | |
| Revenue for the terminal charging zone | 75 560 | 84 720 | 160 280 | 98 436 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 6.3% | 4.6% | 5.4% | -4.6% | | |
| Ex-post RoE pre-tax rate (in %) | 9.1% | 11.5% | 10.1% | -21.5% | | |

13. Focus on main ANSP regulatory result on terminal activity



ROMATSA net gain on activity in the Romania terminal charging zone in the year 2022

ROMATSA reported a net loss of -6.1 MRON, as a combination of a loss of -3.4 MRON arising from the cost sharing mechanism, with a loss of -2.8 MRON arising from the traffic risk sharing mechanism.

ROMATSA overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-6.1 MRON) and the actual RoE (+1.6 MRON) amounts to -4.5 MRON (4.6% of the terminal revenues).

ROMANIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|---|---------------|------------------|---------------|---------------|------------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Romania | | | | | | | |
| Terminal charging zone 1: Romania | | | | | | | |
| Romania: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 166 975 848 | 169 686 211 | 336 662 059 | 180 183 715 | 198 009 411 | 204 603 727 |
| Real terminal costs (€2017) | | 15 269 996 | 17 315 113 | 32 585 109 | 17 273 546 | 18 882 774 | 18 973 564 |
| Real gate-to-gate costs (€2017) | | 182 245 845 | 187 001 324 | 369 247 168 | 197 457 261 | 216 892 185 | 223 577 291 |
| En route share (%) | | 91.6% | 90.7% | 91.2% | 91.3% | 91.3% | 91.5% |
| Romania: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 166 975 848 | 169 924 327 | 336 900 176 | 181 762 325 | | |
| Real terminal costs (€2017) | | 15 269 996 | 16 461 439 | 31 731 435 | 18 179 399 | | |
| Real gate-to-gate costs (€2017) | | 182 245 845 | 186 385 766 | 368 631 611 | 199 941 725 | | |
| En route share (%) | | 91.6% | 91.2% | 91.4% | 90.9% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | in value | 0 | -615 558 | -615 558 | 2 484 464 | |
| | | in % | 0.0% | -0.3% | -0.2% | 1.3% | |
| En route share | | in p.p. | 0.0 p.p. | 0.4 p.p. | 0.2 p.p. | -0.3 p.p. | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are +1.3% (+2.5 M€2017) higher than planned, as the en route costs are +1.6 M€2017 higher than planned and the terminal costs are +0.9 M€2017 higher than planned.</p> <p>The actual share of en route in gate-to-gate ANS costs in 2022 (90.9%) is comparable to the share in teh PP (91.3%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In RON '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| ROMATSA | 24 589 | 1 041 805 | 2.4% | 56 235 | 1 119 916 | 5.0% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| | | | | | | | |
| Total | 24 589 | 1 041 805 | 2.4% | 56 235 | 1 119 916 | 5.0% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Romania covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +56.2 MRON (+60.7 MRON for en route and -4.5 MRON for terminal - see boxes 10 to 13 for the detailed analysis at charging zones level), corresponding to 5.0% of gate-to-gate ANS revenues.</p> <p>This is lower than the return planned for the year 2022 (2.4% of gate-to-gate revenues).</p> | | | | | | | |
| <p>Romania gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Slovakia

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SLOVAKIA

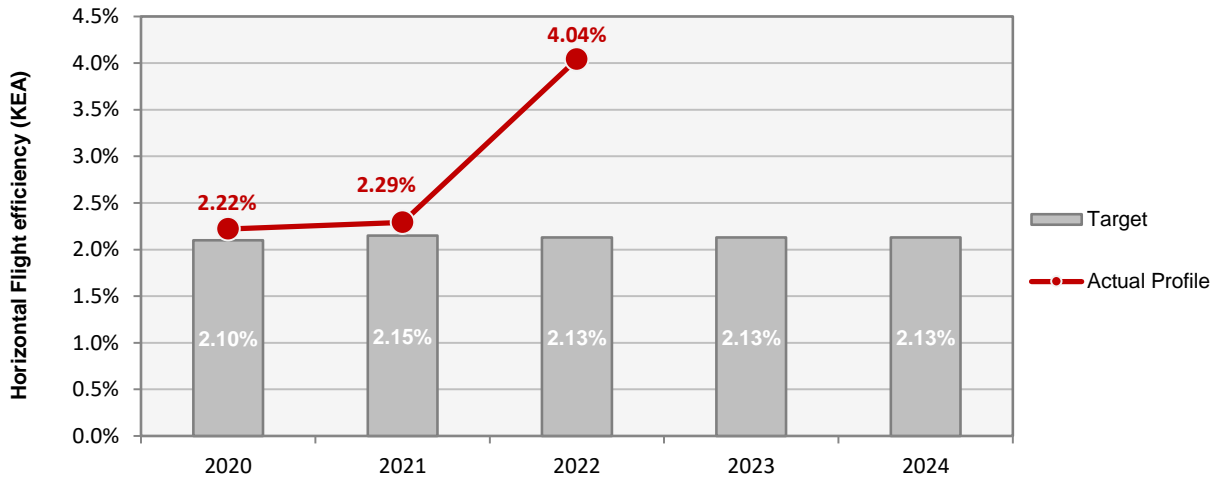
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| LPS SR | 86 | C | C | D | B | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>Four EoSM components of the ANSP meet, already the RP3 target level. Compared with 2021, in 2022 some degradation was observed for three questions in "Safety Assurance" reducing component maturity from level C to level B, and consequently the ANSP no longer achieves the RP3 target for this component.</p> | | | | | | |

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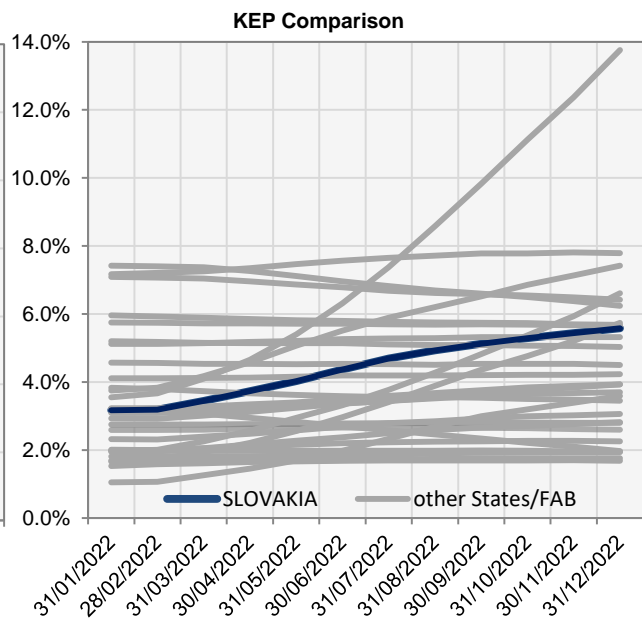
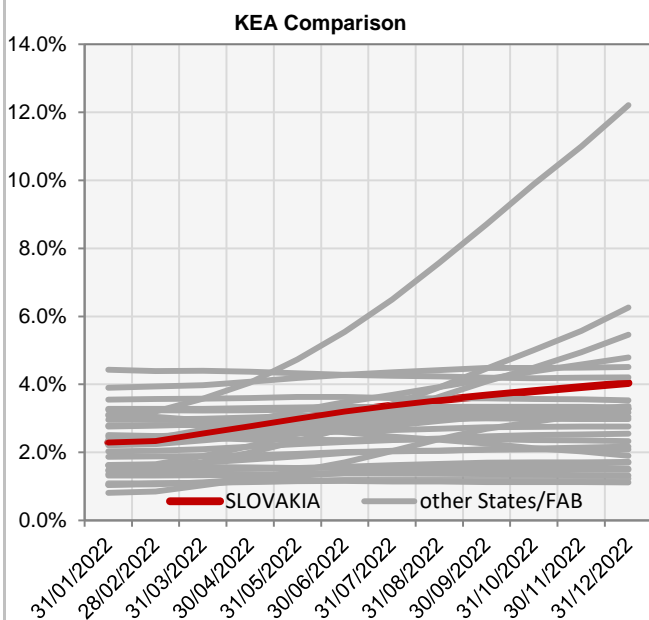
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 2.10% | 2.15% | 2.13% | 2.13% | 2.13% |
| Actual performance | 2.22% | 2.29% | 4.04% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 2.29% | 2.33% | 2.56% | 2.77% | 2.99% | 3.20% | 3.38% | 3.53% | 3.67% | 3.80% | 3.92% | 4.04% |
| KEP | 3.17% | 3.19% | 3.45% | 3.73% | 4.03% | 4.37% | 4.69% | 4.93% | 5.12% | 5.29% | 5.44% | 5.58% |
| KES | 2.64% | 2.67% | 2.95% | 3.26% | 3.62% | 3.99% | 4.34% | 4.61% | 4.82% | 5.01% | 5.17% | 5.32% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

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ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Closure of Ukrainian airspace and to establishment of military transit corridors has caused a significant shift of traffic flows to the west with the extraordinate de-tour impacting of KEA indicator.

Additional information related to Russia's war of aggression against Ukraine

Due to unavailability of Ukrainian and Russian airspace, traffic originally planned to fly via Ukraine and long-haul flights to Asia moved to eastern part of FIR Bratislava. In 2022 average delay per flight was below target limit, mainly because of opening more sectors than originally planned.

Due to establishment of military transit corridors, capacity below FL335 was reduced by 30%.

Military - related measures implemented or planned to improve capacity

N/A

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovakia | 42% | 49% | 61% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bratislava | 53% | 56% | 48% | | |

Initiatives implemented or planned to improve PI#6

PRISMIL CURA was fully implemented

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovakia | | | 96% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bratislava | | | 96% | | |

Initiatives implemented or planned to improve PI#7

PRISMIL CURA was fully implemented

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovakia | | | 86% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Bratislava | | | 86% | | |

Initiatives implemented or planned to improve PI#8

PRISMIL CURA was fully implemented

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CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | |
|--|------|------|------|------|------|--|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations | |
| National Target | 0.60 | 0.05 | 0.07 | 0.08 | 0.07 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>In terms of IFR movements, the actual level of traffic exceeded the forecasted level by approximately 10%. With traffic level exceeding forecasted volume LPS SR, š. p. was set to start recovering from the pandemic-caused crisis in economic terms.</p> <p>Target has been met with a recorded delay of 0.03 minutes per flight (0.07 min/flight required).</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| Analysis on strategical, pretactical and post ops level is being done on regular basis using Eurocontrol's 6 weeks traffic forecast, NMIR Tool, Eurocontrol's ACC Dashboard and our internal rostering tool to monitor and ensure that provided capacity meets traffic demand. | | | | | | | |
| Capacity Planning | | | | | | | |
| During the period of 2018-2022 ATFM delay per flight was always below target limit and we expect this trend to continue in next years. No capacity issues are foreseen for RP3 in the baseline traffic growth scenario. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Bratislava ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 58 | 60 | 62 | 63 | |
| Actual | 54 | 62 | 60 | 65 | | | |
| Additional information regarding Russia's war of aggression in Ukraine. | | | | | | | |
| <p>Due to unavailability of Ukrainian and Russian airspace, traffic originally planned to fly via Ukraine and long-haul flights to Asia moved to eastern part of FIR Bratislava. In 2022 average delay per flight was below target limit, mainly because of opening more sectors than originally planned.</p> <p>Due to establishment of military transit corridors, capacity below FL335 was reduced by 30%.</p> <p>Shifts were boosted by adding more personnel, thus we were able to keep more sectors opened during the day and late evening. This was only possible due to air traffic controllers accepting working extra hours and hugely improved covid situation.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Slovakia experienced an increase in traffic from 271k flights in 2021 to 470k flights in 2022.</p> <p>12k minutes of en route ATFM delay originating in the Bratislava ACC were re-attributed to DFS (10k) and DSNA (2k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.</p> <p>Following the above reattribution of delays, Bratislava ACC had almost zero remaining ATFM delays in 2022.</p> | | | | | | | |

SLOVAKIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Slovakia ECZ represents 0.8% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 15 December 2021 and found consistent as per Commission Decision (EU) 2022/768 of 13 April 2022
The final version of the plan was adopted and published by Slovakia in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Slovakia: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| En route costs (nominal €) | 44 945 003 | 47 600 378 | 92 545 382 | 59 383 508 | 62 056 434 | 63 498 702 |
| Inflation % | 2.0% | 1.2% | | 1.9% | 2.0% | 2.1% |
| Inflation index (100 in 2017) | 107.5 | 108.8 | | 110.9 | 113.1 | 115.5 |
| Real en route costs (€2017) | 42 646 113 | 44 628 382 | 87 274 495 | 54 676 787 | 56 317 420 | 56 771 300 |
| Total en route service units | 475 362 | 608 638 | 1 084 000 | 798 052 | 952 668 | 1 094 249 |
| Real en route DUC per service unit (€2017) | 89.71 | 73.33 | 80.51 | 68.51 | 59.12 | 51.88 |

| Slovakia: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|--------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 44 945 003 | 40 436 086 | 85 381 089 | 58 116 619 | | |
| Inflation % | 2.0% | 2.8% | | 12.1% | | |
| Inflation index (100 in 2017) | 107.5 | 110.5 | | 123.9 | | |
| Real en route costs (€2017) | 42 646 113 | 37 709 295 | 80 355 408 | 49 270 435 | | |
| Total en route service units | 475 362 | 611 991 | 1 087 353 | 972 528 | | |
| Real en route AUC per service unit (€2017) | 89.71 | 61.62 | 73.90 | 50.66 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------|---------------|--------------|---------------|------|------|
| En route costs (nominal €) | 0 | -7 164 292 | -7 164 292 | -1 266 889 | | |
| in value | 0 | -7 164 292 | -7 164 292 | -1 266 889 | | |
| in % | - | -15.1% | -7.7% | -2.1% | | |
| Inflation % | 0.0 p.p. | 1.6 p.p. | | 10.2 p.p. | | |
| in p.p. | 0.0 p.p. | 1.6 p.p. | | 10.2 p.p. | | |
| Inflation index (100 in 2017) | 0.0 p.p. | 1.7 p.p. | | 13.0 p.p. | | |
| in p.p. | 0.0 p.p. | 1.7 p.p. | | 13.0 p.p. | | |
| Real en route costs (€2017) | 0 | -6 919 086 | -6 919 086 | -5 406 352 | | |
| in value | 0 | -6 919 086 | -6 919 086 | -5 406 352 | | |
| in % | - | -15.5% | -7.9% | -9.9% | | |
| Total en route service units | 0 | 3 353 | 3 353 | 174 476 | | |
| in value | 0 | 3 353 | 3 353 | 174 476 | | |
| in % | - | +0.6% | +0.3% | +21.9% | | |
| Real en route unit cost per service unit (€2017) | 0.00 | -11.71 | -6.61 | -17.85 | | |
| in value | 0.00 | -11.71 | -6.61 | -17.85 | | |
| in % | - | -16.0% | -8.2% | -26.1% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -26.1% (or -17.85 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+21.9%) and significantly lower than planned en route costs in real terms (-9.9%, or -5.4 M€2017). It should be noted that actual inflation index in 2022 was +13.0 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+21.9%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (LPS) retaining an amount of +1.9 M€2017.

En route costs by entity

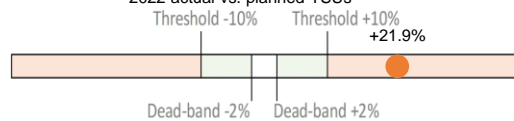
Actual real en route costs are -9.9% (-5.4 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LPS (-8.3%, or -4.0 M€2017), the NSA/EUROCONTROL (-21.4%, or -1.0 M€2017) and the MET service provider (-22.0%, or -0.4 M€2017).

En route costs for the main ANSP (LPS) at charging zone level

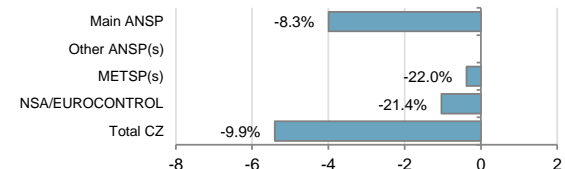
Significantly lower than planned en route costs in real terms for LPS in 2022 (-8.3%, or -4.0 M€2017) result from:

- Significantly lower staff costs (-14.7%), which is the result of continuation of various cost containment measures, including non-payment of some variable wage components. This result is also impacted by higher actual inflation index (+13.0 p.p.).
- Significantly lower other operating costs (-11.1%), mainly due to inflation index impact (+13.0 p.p.).
- Significantly higher depreciation (+33.3%). This is the effect of lowering the determined depreciation costs by 1.3 M€ of the unrealized investment from RP2.
- Significantly higher cost of capital (+20.1%), due to the increase in the value of the asset base together with the increase in the interest rate on loan.
- Significantly higher deduction for VFR exempted flights (+90.6%).

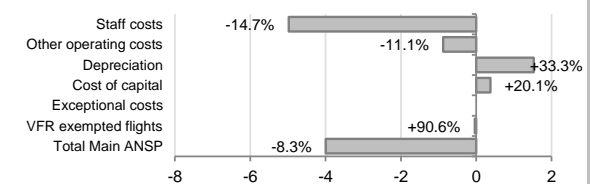
2022 actual vs. planned TSUs



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



SLOVAKIA: En route charging zone

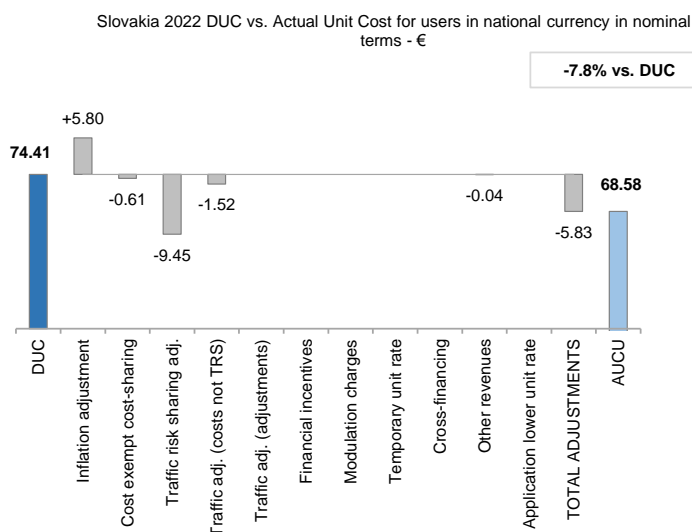
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 74.41 |
| DUC to be charged retroactively | 0.00 |
| DUC | 74.41 |
| Inflation adjustment | 5.80 |
| Cost exempt from cost-sharing | -0.61 |
| Traffic risk sharing adjustment | -9.45 |
| Traffic adj. (costs not TRS) | -1.52 |
| Traffic adj. (adjustments)* | - |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | - |
| Cross-financing | 0.00 |
| Other revenues | -0.04 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -5.83 |
| AUCU | 68.58 |
| AUCU vs. DUC | -7.8% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

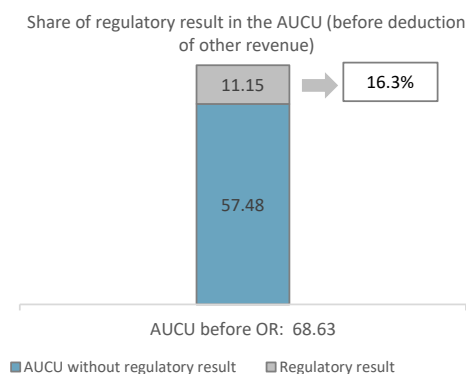
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | 441 | 0.45 |
| | Competent authorities and qualified entities costs | -296 | -0.30 |
| | Eurocontrol costs | -740 | -0.76 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -595 | -0.61 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| LPS | 10 379 | 10.67 |
| METSP(s) | | |
| Slovakia MET | 469 | 0.48 |
| Total charging zone | 10 848 | 11.15 |
| Actual cost for users*** | 66 740 | 68.63 |
| Regulatory result (% AUCU) | 16.3% | 16.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (68.58 €) is -7.8% lower than the nominal DUC (74.41 €). The difference between these two figures (-5.83 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+5.80 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.61 €/SU);
- the deduction of the traffic risk sharing adjustments (-9.45 €/SU);
- the deduction of the traffic adjustment (-1.52 €/SU) for the costs not subject to traffic risk sharing; and
- the deduction of the other revenues (-0.04 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before deduction of other revenues) is 16.3%.

SLOVAKIA: En route main ANSP (LPS)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

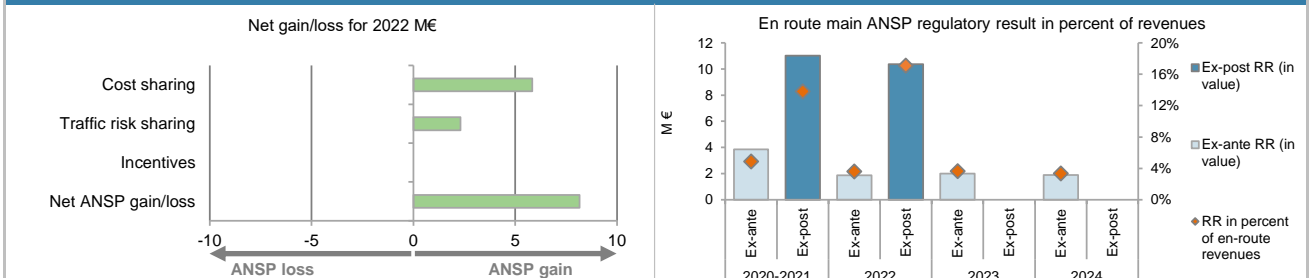
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 6 406 | -15 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 541 | 5 413 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | 441 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 6 947 | 5 839 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.3% | 21.9% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 79 226 | 52 628 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 245 | 2 316 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 7 192 | 8 155 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LPS planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| Total asset base | 43 906 | 45 466 | 89 371 | 46 751 | 48 539 | 44 724 |
| Proportion of financing through equity (in %) | 100% | 89% | 94% | 79% | 84% | 89% |
| RoE pre-tax rate (in %) | 4.4% | 4.7% | 4.6% | 5.1% | 4.9% | 4.7% |
| RoE (in value) | 1 942 | 1 917 | 3 859 | 1 881 | 1 999 | 1 887 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 942 | 1 917 | 3 859 | 1 881 | 1 999 | 1 887 |
| Revenue for the en route charging zone | 38 339 | 40 886 | 79 226 | 52 628 | 55 240 | 56 400 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.1% | 4.7% | 4.9% | 3.6% | 3.6% | 3.3% |
| Ex-ante RoE pre-tax rate (in %) | 4.4% | 4.7% | 4.6% | 5.1% | 4.9% | 4.7% |
| LPS actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 43 906 | 44 541 | 88 446 | 53 912 | | |
| Proportion of financing through equity (in %) | 100% | 90% | 95% | 81% | | |
| RoE pre-tax rate (in %) | 4.4% | 4.7% | 4.6% | 5.1% | | |
| RoE (in value) | 1 942 | 1 891 | 3 833 | 2 224 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 7 192 | 7 192 | 8 155 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 942 | 9 083 | 11 025 | 10 379 | | |
| Revenue for the en route charging zone | 38 339 | 41 673 | 80 012 | 60 797 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.1% | 21.8% | 13.8% | 17.1% | | |
| Ex-post RoE pre-tax rate (in %) | 4.4% | 22.7% | 13.1% | 23.8% | | |

13. Focus on the main ANSP regulatory result on en route activity



LPS net gain on activity in the Slovakia en route charging zone in the year 2022

LPS reported a net gain of +8.2 M€, as a combination of a gain of +5.8 M€ arising from the cost sharing mechanism, with a gain of +2.3 M€ arising from the traffic risk sharing mechanism.

LPS overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+8.2 M€) and the actual RoE (+2.2 M€) amounts to +10.4 M€ (17.1% of the en route revenues). The resulting ex-post rate of return on equity is 23.8%, which is higher than the 5.1% planned in the PP.

SLOVAKIA: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Slovakia MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 1 513 | 1 770 | 3 283 | 1 907 | 1 949 | 2 118 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Slovakia MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 392 | 392 | 469 | | |
| Revenue for the en route charging zone | 1 513 | 1 797 | 3 310 | 2 131 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 21.8% | 11.9% | 22.0% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Slovakia (SHMU) corresponds to 22.0% of the en route revenues. It should be noted that SHMU does not charge cost of capital. | | | | | | |

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Annual Monitoring Report 2022

Local level view

Slovenia

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SLOVENIA

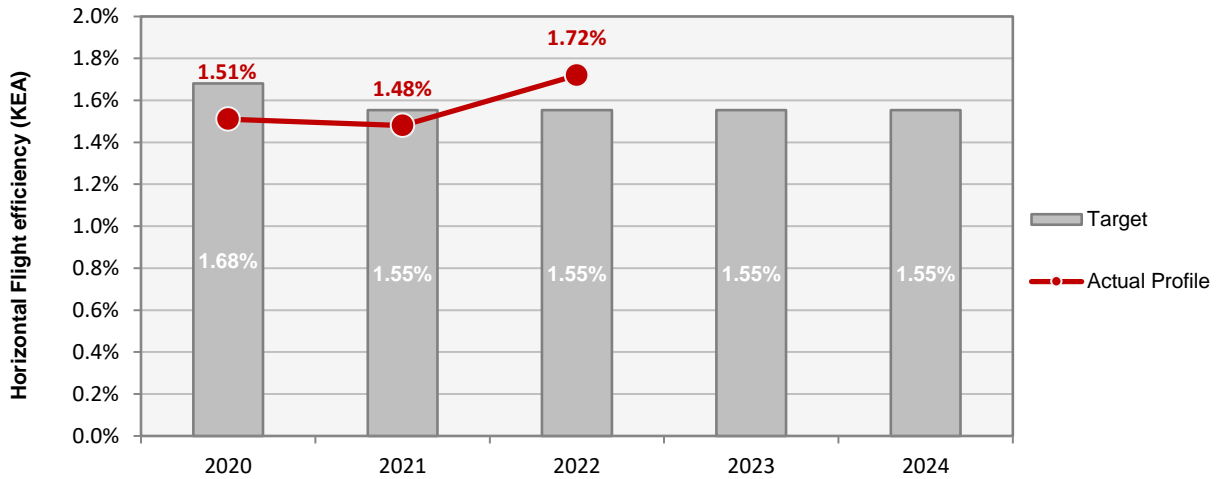
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Slovenia Control | 75 | C | C | C | C | C |
| Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable. | | | | | | |
| Observations | | | | | | |
| Maturity levels have been maintained compared with 2021. Four out of five EoSM components of the ANSP meet the RP3 target level. Only the component "Safety Risk Management" is below 2024 target level, at level C. Improvements in "Safety Risk Management" are still expected during RP3 to achieve RP3 targets. | | | | | | |

SLOVENIA

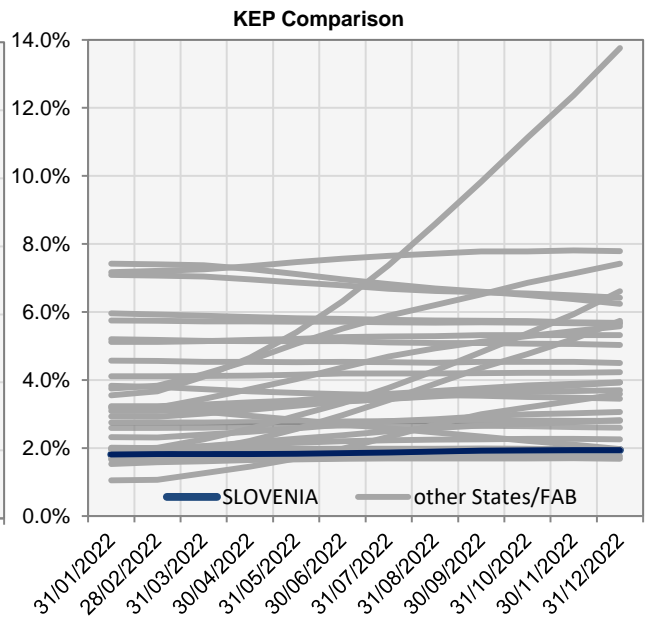
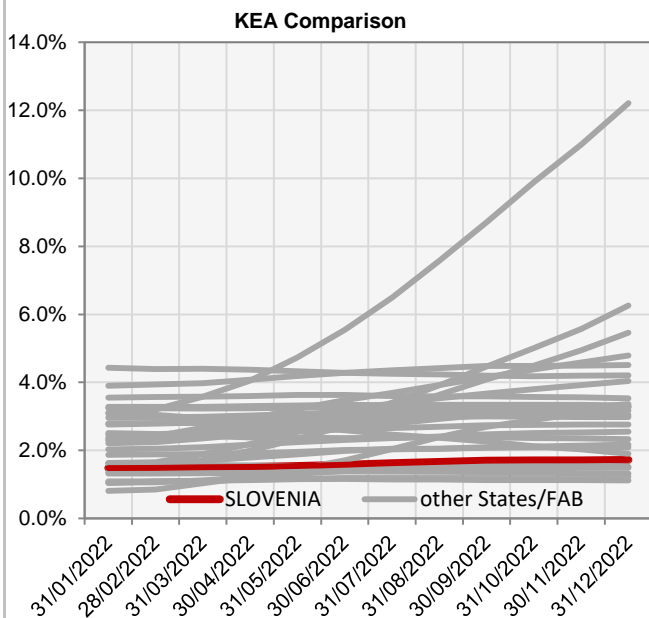
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|---------------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.68% | 1.55% | 1.55% | 1.55% | 1.55% |
| Actual performance | 1.51% | 1.48% | 1.72% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.48% | 1.49% | 1.50% | 1.51% | 1.54% | 1.58% | 1.62% | 1.66% | 1.70% | 1.71% | 1.71% | 1.72% |
| KEP | 1.81% | 1.82% | 1.82% | 1.82% | 1.83% | 1.85% | 1.87% | 1.90% | 1.92% | 1.93% | 1.94% | 1.94% |
| KES | 1.61% | 1.62% | 1.63% | 1.63% | 1.64% | 1.66% | 1.68% | 1.71% | 1.73% | 1.74% | 1.75% | 1.75% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

SLOVENIA

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Environment: No impact on environment.

Capacity: No impact on capacity.

Additional information related to Russia's war of aggression against Ukraine

No specific changes in activity. Segregated airspace was established for the needs of overflights by aircraft of allied countries that do not fly according to the rules that apply to general air traffic in the controlled airspace of the Republic of Slovenia, which is activated when necessary.

Temporary Segregated Area above FL 510 (FL510) - activation on demand

Military - related measures implemented or planned to improve capacity

Environment: N/A

Capacity: N/A

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovenia | | | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ljubljana | | | | | |

Initiatives implemented or planned to improve PI#6

Slovenia AMC started sharing AUP/UUP with NM on 1.1.2023, but without any restrictions being imposed on the users flight planning during activation.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovenia | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ljubljana | | | | | |

Initiatives implemented or planned to improve PI#7

Slovenia AMC started sharing AUP/UUP with NM on 1.1.2023, but without any restrictions being imposed on the users flight planning during activation.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Slovenia | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Ljubljana | | | | | |

Initiatives implemented or planned to improve PI#8

Slovenia AMC started sharing AUP/UUP with NM on 1.1.2023, but without any restrictions being imposed on the users flight planning during activation.

SLOVENIA

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|---|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.23 | 0.05 | 0.09 | 0.09 | 0.09 | | |
| Actual performance | 0.00 | 0.00 | 0.00 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| First normal year after COVID19, when traffic reached 2019 level. Capacity target achieved. | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| No specific monitoring in place, no delays caused by Ljubljana ACC. | | | | | | | |
| Capacity Planning | | | | | | | |
| Planned capacity in line with NM requirements. | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | Observations |
| Ljubljana ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Planned (Perf Plan) | - | - | 68 | 69 | 69 | 72 | |
| Actual | 66 | 65 | 68 | 70 | | | |
| Additional information regarding Russia's war of aggression in Ukraine. | | | | | | | |
| Low amount of additional traffic due to lack of capacity in neighbouring (east side) ACCs. | | | | | | | |
| Summary of capacity performance | | | | | | | |
| The Ljubljana FIR experienced an increase in traffic from 279k flights in 2021, to 453k flights, with practically zero ATFM delays. Traffic levels were almost nack to the 460k flights observed in 2019. | | | | | | | |

SLOVENIA: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | | |
|---|-----------------|---------------|---------------|---|---------------|--------------|--------------|
| <ul style="list-style-type: none"> Slovenia ECZ represents 0.5% of the SES en route ANS actual costs in 2022 National currency: EUR Performance Plan: RP3 draft performance plan dated 13 December 2021 and found consistent as per Commission Decision (EU) 2022/777 of 13 April 2022 The final version of the plan was adopted and published by Slovenia in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | | |
| Slovenia: Data from RP3 Performance Plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal €) | | 31 716 704 | 31 335 841 | 63 052 545 | 34 865 292 | 36 234 614 | 36 617 359 |
| Inflation % | | 0.0% | 0.8% | | 1.5% | 1.6% | 1.8% |
| Inflation index (100 in 2017) | | 103.6 | 104.5 | | 106.0 | 107.8 | 109.7 |
| Real en route costs (€2017) | | 30 876 185 | 30 292 691 | 61 168 876 | 33 287 877 | 34 158 305 | 34 037 505 |
| Total en route service units | | 263 994 | 339 029 | 603 022 | 535 978 | 570 849 | 605 805 |
| Real en route DUC per service unit (€2017) | | 116.96 | 89.35 | 101.44 | 62.11 | 59.84 | 56.19 |
| Slovenia: Actual data from Reporting Tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal €) | | 31 716 704 | 29 458 544 | 61 175 249 | 35 169 486 | | |
| Inflation % | | 0.0% | 2.0% | | 9.3% | | |
| Inflation index (100 in 2017) | | 103.6 | 105.7 | | 115.5 | | |
| Real en route costs (€2017) | | 30 876 185 | 28 229 075 | 59 105 260 | 31 340 243 | | |
| Total en route service units | | 263 994 | 369 971 | 633 965 | 595 456 | | |
| Real en route AUC per service unit (€2017) | | 116.96 | 76.30 | 93.23 | 52.63 | | |
| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal €) | in value | 0 | -1 877 296 | -1 877 296 | 304 194 | | |
| | in % | - | -6.0% | -3.0% | +0.9% | | |
| Inflation % | in p.p. | 0.0 p.p. | 1.2 p.p. | | 7.8 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.2 p.p. | | 9.5 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -2 063 616 | -2 063 616 | -1 947 633 | | |
| | in % | - | -6.8% | -3.4% | -5.9% | | |
| Total en route service units | in value | 0 | 30 942 | 30 942 | 59 478 | | |
| | in % | - | +9.1% | +5.1% | +11.1% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -13.05 | -8.21 | -9.47 | | |
| | in % | - | -14.6% | -8.1% | -15.3% | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | | |
| AUC vs. DUC | | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10% +11.1%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| In 2022, the en route AUC was -15.3% (or -9.47 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+11.1%) and significantly lower than planned en route costs in real terms (-5.9%, or -1.9 M€2017). It should be noted that the actual inflation index in 2022 was +9.5 p.p. higher than planned (115.5 vs. 106.0). | | | | | | | |
| En route service units | | | | <p>Costs by entity at ECZ level (M€2017):</p> <p>Main ANSP -5.8% Other ANSP(s) 0% METSP(s) +4.8% NSA/EUROCONTROL -12.0% Total CZ -5.9%</p> | | | |
| The difference between actual and planned TSUs (+11.1%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Slovenia Control) retaining an amount of +1.2 M€2017. | | | | | | | |
| En route costs by entity | | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -5.5% Other operating costs -11.8% Depreciation 0% Cost of capital +2.4% Exceptional costs -11.8% VFR exempted flights 0% Total Main ANSP -5.8%</p> | | | |
| Actual real en route costs are -5.9% (-1.9 M€2017) lower than planned. This is the result of lower than planned costs for the main ANSP, Slovenia Control (-5.8%, or -1.7 M€2017) and the NSA/EUROCONTROL (-12.0%, or -0.3 M€2017) and higher than planned costs for the MET service provider (+4.8%, or +0.1 M€2017). | | | | | | | |
| En route costs for the main ANSP (Slovenia Control) at charging zone level | | | | | | | |
| Significantly lower than planned en route costs in real terms for Slovenia Control in 2022 (-5.8%, or -1.7 M€2017) resulting from: | | | | | | | |
| <ul style="list-style-type: none"> - Significantly lower than planned staff costs (-5.5%) in real terms, due to inflation index impact (+9.5 p.p.) since in nominal terms staff costs are higher than planned (+3.0%) due to "negotiations with the social partners reached for Q4 of 2021, when some obligations were pushed from 2021 to 2022", - Significantly lower than planned other operating costs (-11.8%) in real terms, reported to be due to "optimised contracts", - Higher than planned depreciation (+2.4%), - Significantly lower than planned cost of capital (-11.8%), reported to be due to "lower asset value". | | | | | | | |

SLOVENIA: En route charging zone

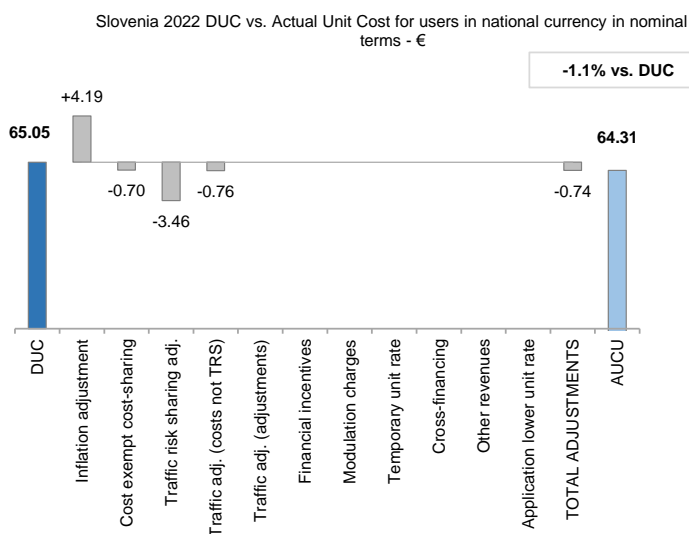
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency, in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|--------------|
| Initial DUC charged | 65.05 |
| DUC to be charged retroactively | 0.00 |
| DUC | 65.05 |
| Inflation adjustment | 4.19 |
| Cost exempt from cost-sharing | -0.70 |
| Traffic risk sharing adjustment | -3.46 |
| Traffic adj. (costs not TRS) | -0.76 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | 0.00 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -0.74 |
| AUCU | 64.31 |
| AUCU vs. DUC | -1.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

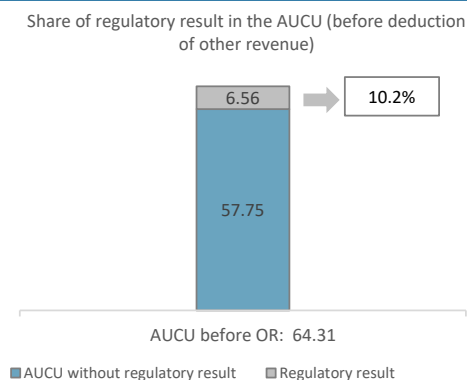
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|-------------|--------------|
| by item | New and existing investments | -103 | -0.17 |
| | Competent authorities and qualified entities costs | -282 | -0.47 |
| | Eurocontrol costs | -32 | -0.05 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 0 | 0.00 |
| Total costs exempt from cost sharing | | -418 | -0.70 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| Slovenia Control | 3 999 | 6.72 |
| METSP(s) | € '000 | €/SU |
| Slovenia MET | -95 | -0.16 |
| Total charging zone | 3 904 | 6.56 |
| Actual cost for users*** | 38 296 | 64.31 |
| Regulatory result (% AUCU) | 10.2% | 10.2% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (64.31 €) is -1.1% lower than the nominal DUC (65.05 €). The difference between these two figures (-0.74 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+4.19 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-0.70 €/SU);
- the deduction of the traffic risk sharing adjustments (-3.46 €/SU); and
- the deduction of the traffic adjustment (-0.76 €/SU) for the costs not subject to traffic risk sharing.

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 10.2%.

SLOVENIA: En route main ANSP (Slovenia Control)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: The ex-ante and ex-post RoE are calculated based on the notional capital structure (representing the proportion of financing through equity for determined and actual 2020-2021 and 2022 at the level of 40%). The actual proportion should be reported.

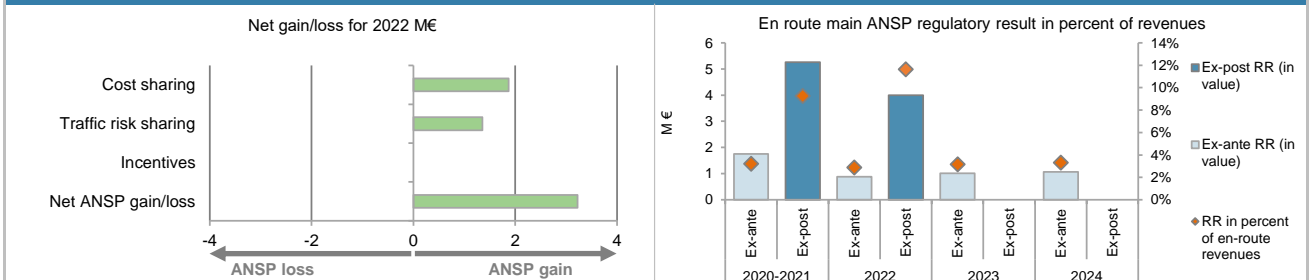
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 1 660 | -414 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 272 | 2 370 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 0 | -88 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 1 932 | 1 868 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 5.1% | 11.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 55 060 | 30 768 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 618 | 1 354 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 3 550 | 3 221 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Slovenia Control planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| Total asset base | 23 304 | 18 884 | 42 187 | 21 238 | 24 440 | 25 798 |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | 40% | 40% |
| RoE pre-tax rate (in %) | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% |
| RoE (in value) | 971 | 784 | 1 755 | 882 | 1 015 | 1 071 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 971 | 784 | 1 755 | 882 | 1 015 | 1 071 |
| Revenue for the en route charging zone | 27 777 | 27 284 | 55 060 | 30 768 | 32 138 | 32 500 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.5% | 2.9% | 3.2% | 2.9% | 3.2% | 3.3% |
| Ex-ante RoE pre-tax rate (in %) | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% | 10.4% |
| Slovenia Control actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 23 304 | 17 908 | 41 212 | 18 733 | | |
| Proportion of financing through equity (in %) (see Note 1) | 40% | 40% | 40% | 40% | | |
| RoE pre-tax rate (in %) | 10.4% | 10.4% | 10.4% | 10.4% | | |
| RoE (in value) | 971 | 744 | 1 715 | 778 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 3 550 | 3 550 | 3 221 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 971 | 4 294 | 5 265 | 3 999 | | |
| Revenue for the en route charging zone | 27 777 | 29 174 | 56 951 | 34 403 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.5% | 14.7% | 9.2% | 11.6% | | |
| Ex-post RoE pre-tax rate (in %) | 10.4% | 59.9% | 31.9% | 53.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



Slovenia Control net gain on activity in the Slovenia en route charging zone in the year 2022

Slovenia Control reported a net gain of +3.2 M€, as a combination of a gain of +1.9 M€ arising from the cost sharing mechanism, with a gain of +1.4 M€ arising from the traffic risk sharing mechanism.

Slovenia Control overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+3.2M€) and the actual RoE (+0.8 M€) amounts to +4.0 M€ (11.6% of the en route revenues). The resulting ex-post rate of return on equity is 53.4%, which is higher than the 10.4% planned in the PP.

SLOVENIA: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|-------|-------|------------|-------|-------|-------|
| Slovenia MET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 1 526 | 1 445 | 2 971 | 1 484 | 1 435 | 1 410 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Slovenia MET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -94 | -94 | -95 | | |
| Revenue for the en route charging zone | 1 526 | 1 461 | 2 988 | 1 593 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -6.4% | -3.1% | -5.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Slovenia (MET ARSO) corresponds to -5.9% of the en route revenues. It should be noted that MET ARSO does not charge cost of capital. | | | | | | |

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Annual Monitoring Report 2022

Local level view

Spain

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SPAIN

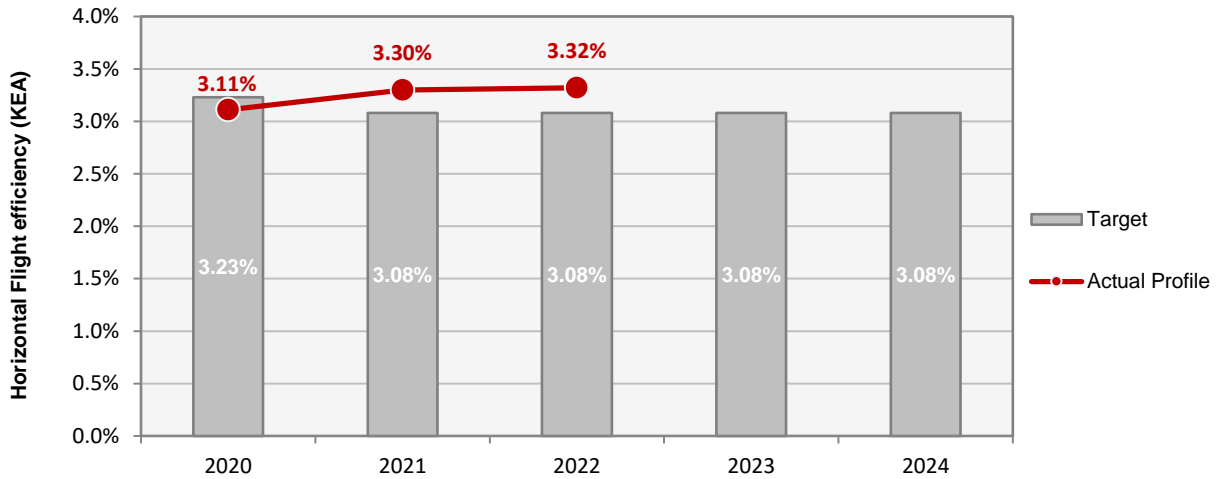
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|--|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| ENAIRE | 100 | D | D | D | D | D |
| SKYWAY | 93 | C | C | C | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>All five EoSM components of ENAIRE meet or exceed the RP3 target level. Maximum maturity level is maintained.</p> <p>Four out of five EoSM components of SKYWAYS meet the RP3 target level. Compared with 2021, in 2022 improvements were seen on three questions. Only the component "Safety Risk Management" is below RP3 target level and improvements are still expected during RP3 to achieve RP3 targets.</p> | | | | | | |

SPAIN

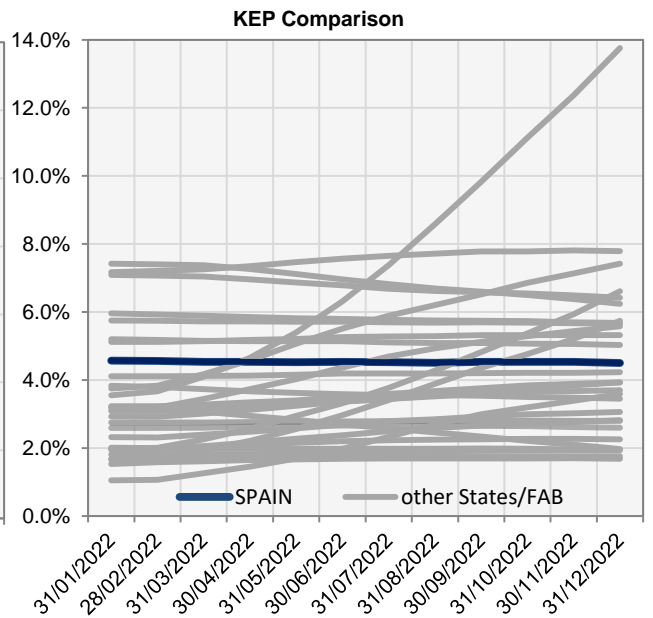
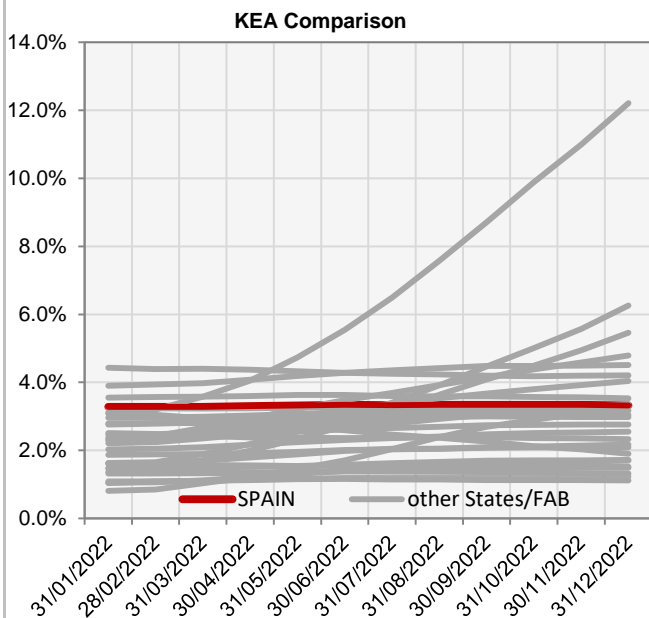
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 3.23% | 3.08% | 3.08% | 3.08% | 3.08% |
| Actual performance | 3.11% | 3.30% | 3.32% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 3.28% | 3.28% | 3.28% | 3.30% | 3.32% | 3.34% | 3.33% | 3.34% | 3.34% | 3.34% | 3.34% | 3.32% |
| KEP | 4.57% | 4.56% | 4.53% | 4.53% | 4.52% | 4.53% | 4.52% | 4.51% | 4.53% | 4.53% | 4.53% | 4.50% |
| KES | 4.46% | 4.45% | 4.43% | 4.42% | 4.41% | 4.42% | 4.41% | 4.41% | 4.42% | 4.42% | 4.42% | 4.40% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Spain includes seven airports under RP3 monitoring. However in accordance with IR (EU) 2019/317 and the traffic figures, Ibiza is not monitored for additional taxi-out and ASMA times.

The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly implemented where required and the monitoring of all environment indicators can be performed.

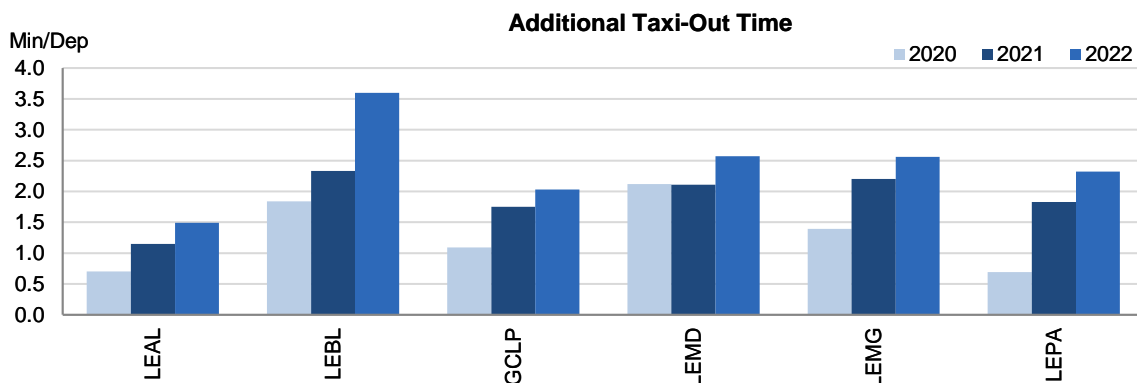
Traffic at the ensemble of Spanish airports under monitoring in 2022 is still 10% lower than in 2019, but 60% higher than in 2021. Palma and Ibiza surpassed in 2022 the 2019 traffic.

Additional times both in the taxi-out and the approach phase increased at all these airports in 2022.

The share of CDO flights is in general higher than the overall RP3 value in 2022. The values stayed relatively stable with respect to 2021.

The Spanish NSA reports that all these indicators are being monitored by AESA twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

2. Additional Taxi-Out Time



The additional taxi out time (aggregated for the 6 airports monitored in RP3) increased in 2022 by 31.3% in relation to the value of 2021.

At Barcelona (LEBL; 2019: 4.48 min/dep.; 2020: 1.84 min/dep.; 2021: 2.33 min/dep.; 2022: 3.6 min/dep.) the additional taxi-out times increased significantly in 2022 resulting in the third highest value amongst the SES monitored airports.

The rest of airports observed a slight increase with respect to 2021, but remained around or below the SES average (2.52 min/dep.)

According to the Spanish monitoring report, the increase in these additional times is mainly due to the growth in traffic demand which is recovering from the COVID crisis.

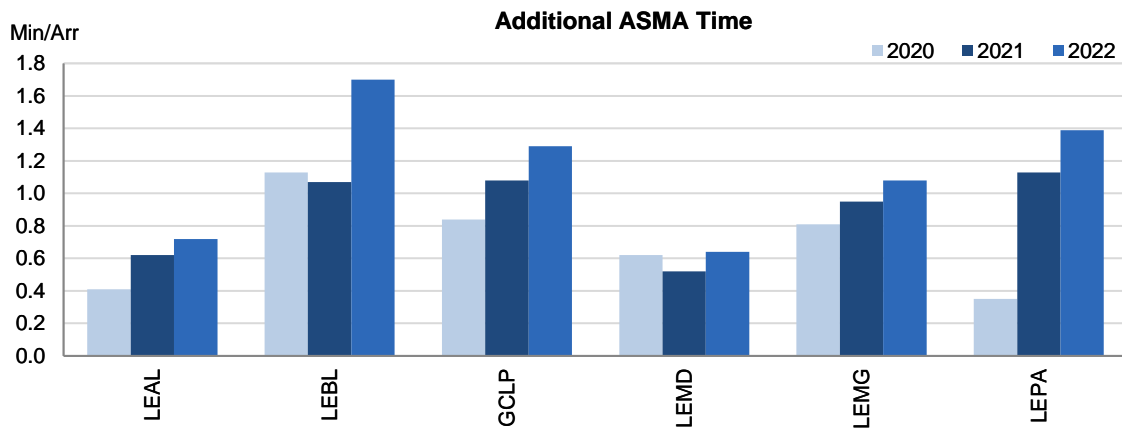
In general, the greatest increase throughout the year occurs in the high season months of each airport, except at LEMD where it is more uniform. Variations in this indicator are related to traffic, especially at airports such as LEPA.

There is work in progress regarding the improvement of A-CDM in Madrid, Barcelona, Palma y Málaga (more accurate Taxi times/stand, new TWRUPDATE A-DPI message implementation, etc.).

Although LEIB does not yet reach >80k movements, it is monitored together with these 6 airports since it is one of the airports considered in the Spanish performance plan (ESPP3) for RP3. In 2022 it reaches a value of 2,19, 13% higher than the 2021 value (1,94).

The additional taxi out time (aggregated for the 7 airports monitored in RP3) has a value of 2,61 and it has increased in 2022 by 30% in relation to the value of 2021 (2,01).

3. Additional ASMA Time



The additional time in terminal area (aggregated for the 6 airports monitored in RP3) increased by 31% in relation to the value of 2021.

Barcelona (LEBL; 2019: 2.58 min/arr.; 2020: 1.13 min/arr.; 2021: 1.07 min/arr.; 2022: 1.7 min/arr.), like for additional taxi-out times, observed a significant increase of the times spent in the terminal area, with one of the highest values observed in the SES monitored airports. Both Palma (LEPA), Malaga (LEMG) and Gran Canaria (GCLP) also resulted in additional ASMA time above the SES average (1.06 min/arr.)

According to the Spanish monitoring report the increase of the additional ASMA times at these airports *is mainly due to the growth in traffic demand which is recovering from the COVID crisis.*

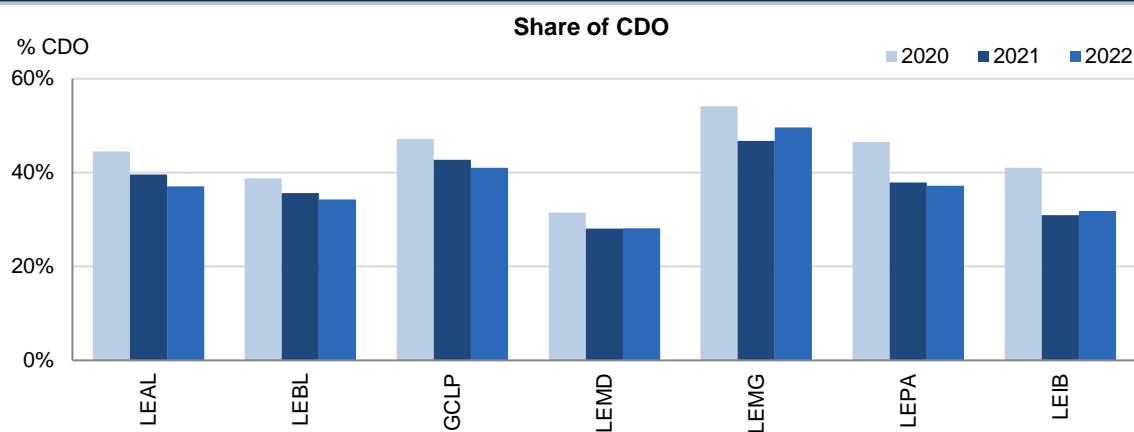
In general, the greatest increase throughout the year occurs in the high season months of each airport but this relationship is not as strong as it is with AXOT. Variations in this indicator are related to traffic, especially at airports such as LEPA.

Some restructuring projects are planned for the coming years in the main TMAs in Spain:

- PBN SIDs, STARs and ILS & RNP APCH in Madrid TMA
- PBN SIDs in Barcelona TMA
- PBN SIDs, ILS & RNP APCH in Palma TMA
- PBN STARs in Malaga
- Reorganization of Canarias TMA

Although LEIB does not yet reach >80k movements, it is monitored together with these 6 airports since it is one of the airports considered in the Spanish performance plan (ESPP3) for RP3. In 2022 it reaches a value of 1,14, 31% higher than the 2021 value (0,87). The additional time in terminal area (aggregated for the 7 airports monitored in RP3) has a value of 1,13 and it has increased in 2022 by 28% in relation to the value of 2020 (0,88).

4. Share of arrivals applying CDO



Only Madrid (LEMD: 28.2%) has its share of CDO flights below the overall RP3 value in 2022 (29.0%). All other airports have shares of CDO flights above the overall RP3 value in 2022, ranging from 31.8% (LEIB) to 49.6% (LEMG). Malaga (LEMG) had an increase of 2.8 percentage points while the values for Madrid (LEMD), Palma de Mallorca (LEPA) and Ibiza (LEIB) stayed almost the same. All other airports had a decrease of the share of CDO flights with respect to 2021, ranging from -1.3 percentage points (LEBL) to -2.5 percentage points (LEAL). Over the summer months, the share of CDO flights is generally lower.

According to the Spanish monitoring report: *The share of arrivals applying continuous descent operation (aggregated for the 7 airports monitored in RP3) has remained at the same level as in 2021, despite the growth in traffic demand which is recovering from the COVID crisis.*

In general, the greatest decrease throughout the year occurs in the high season months of each airport but this relationship is not as strong as it is with AXOT. Variations in this indicator are related to traffic, especially at airports such as LEPA.

The conditions of use of continuous descent procedures mean that the use of this type of procedure is not always compatible with the techniques used when it is necessary to manage medium/high traffic demands at airports/TMAs. Therefore, the authorisation of these procedures must be compatible with the airport's operations in order to meet the demand without establishing restrictions. In the long term, there are plans to modify the structure of the CDA procedures currently published at some airports and to transfer to the arrival procedures section of the AIP the information to proceed with the continuous descent from some point of the STARs to the IAF, to some point of the intermediate approach or to the IF, thus maximising the use of these operations.

This PI is being monitored by AESA twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Alicante-LEAL | 0.7 | 1.15 | 1.49 | | | 0.41 | 0.62 | 0.72 | | | 45% | 40% | 37% | | |
| Barcelona-LEBL | 1.84 | 2.33 | 3.6 | | | 1.13 | 1.07 | 1.7 | | | 39% | 36% | 34% | | |
| Gran Canaria-GCLP | 1.09 | 1.75 | 2.03 | | | 0.84 | 1.08 | 1.29 | | | 47% | 43% | 41% | | |
| Madrid/Barajas-LEMD | 2.12 | 2.11 | 2.57 | | | 0.62 | 0.52 | 0.64 | | | 32% | 28% | 28% | | |
| Malaga-LEMG | 1.39 | 2.2 | 2.56 | | | 0.81 | 0.95 | 1.08 | | | 54% | 47% | 50% | | |
| Palma de Mallorca-LEPA | 0.69 | 1.83 | 2.32 | | | 0.35 | 1.13 | 1.39 | | | 47% | 38% | 37% | | |
| Ibiza-LEIB | - | - | - | | | - | - | - | | | 41% | 31% | 32% | | |

SPAIN

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

Civil-Military coordination regarding Flexible Use of Airspace is on progress at strategic level established within CIDETMA (previous CIDEFO). Dissemination of progress on FUA to civil operators is considered an enabler to achieve Flight Plans using more efficient routes through the Civil Use of Release Airspace (CURA). A new procedure for establishing variable lateral and vertical limits within the defined ARES (Reserved Airspace Areas) has been approved and implementation is ongoing through 2023.

Based on the Principles of FUA, additional capacity to the planned one could be provided once the airspace used for military operations and training is released.

Additional information related to Russia's war of aggression against Ukraine

Awareness of the need of larger areas for training in accordance with the new situation. There is an ongoing study on where to locate the needed areas.

Military - related measures implemented or planned to improve capacity

Spanish Air and Space Force has been active participant in the general meetings to implement the Spanish Free Route Airspace Programme (HISPAFRA). An specific group composed by ENAIRE and Spanish Air Force has been working to further improve the coordination for the implementation of FRA, with a special focus in ASM related matters. Furthermore, a close coordination work with the Network Manager is ongoing.

Single CDR category has been implemented in 2022 by means of a National SCC transition plan. The plan has simplified the management of Airspace allowing the reservation of most of the ARES on D-1 and therefore improving the civil use of the airspace whilst maintaining the necessary allocation for military training and operations.

As explained above a level 1 document on "Procedimiento conjunto civil militar de criterios para la creación de estructuras de espacio aéreo con límites laterales y verticales ajustables y opciones múltiples de reserva y rutas" has been agreed helping to facilitate and improve the FUA and A-FUA implementation

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Spain | 53% | 44% | 45% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Barcelona | | | | | |
| Canarias | | | | | |
| Madrid | | | | | |
| Palma | | | | | |
| Sevilla | | | | | |

Initiatives implemented or planned to improve PI#6

Spanish SCC transition plan implementation. Data reflects total national statistics as there are areas (D) affecting more than one ACC.

The particularities of this indicator have been analysed in our airspace since there are no monthly data published at SES portal and they are provided by the Spanish Air Force NSA. During 2022, several communications have been held between the Spanish Air Force NSA and the civil Spanish NSA to learn about the particularities of this indicator and to study the possibilities of a report beyond the one carried out in this annual monitoring framework.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Spain | 49% | 74% | 74% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Barcelona | n/a | n/a | n/a | | |
| Canarias | n/a | n/a | n/a | | |
| Madrid | n/a | n/a | n/a | | |
| Palma | n/a | n/a | n/a | | |
| Sevilla | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#7

In February 2022 Phase 2 (and last one) of single CDR was implemented.

For the following years we expect to improve this PI with the definition of AMC specific coordination procedures to release traffic flows from RSA with military activity, definition of adjustable limits procedure, ASM scenarios implementation, definition of UAVs TSA tactical crossing procedure. We also expect FRA implementation to improve flight planning through optimal route.

This PI is monitored only annually to evaluate the evolution of the indicators because our ANSP, ENAIRE, which provides the data to calculate the indicator, requests it from Eurocontrol and for the time being they are not in a position to request it on a more frequent basis. AESA reached out to Eurocontrol to find out if it is possible to obtain this data directly and more frequently, but has not yet been able to make any progress. If significant deviations are found in the indicator, the possible causes will be analysed by contacting the relevant stakeholder.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Spain | 52% | 79% | 75% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Barcelona | n/a | n/a | n/a | | |
| Canarias | n/a | n/a | n/a | | |
| Madrid | n/a | n/a | n/a | | |
| Palma | n/a | n/a | n/a | | |
| Sevilla | n/a | n/a | n/a | | |

Initiatives implemented or planned to improve PI#8

In February 2022 Phase 2 (and last one) of single CDR was implemented.

For the following years we expect to improve this PI with the definition of AMC specific coordination procedures to release traffic flows from RSA with military activity, definition of adjustable limits procedure, ASM scenarios implementation, definition of UAVs TSA tactical crossing procedure. We also expect FRA implementation to improve flight planning through optimal route.

This PI is monitored only annually to evaluate the evolution of the indicators because our ANSP, ENAIRE, which provides the data to calculate the indicator, requests it from Eurocontrol and for the time being they are not in a position to request it on a more frequent basis. AESA reached out to Eurocontrol to find out if it is possible to obtain this data directly and more frequently, but has not yet been able to make any progress. If significant deviations are found in the indicator, the possible causes will be analysed by contacting the relevant stakeholder.

SPAIN

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | |
|--------------------------------|------|------|------|------|------|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| National Target | 0.47 | 0.12 | 0.20 | 0.19 | 0.19 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process and further amended by the Spanish NSA. |
| Actual performance | 0.40 | 0.09 | 0.30 | | | |

NSA's assessment of capacity performance

KPI1: the en route capacity target has not been met.

By 2022 the minutes reallocated by network measures (eNM/22), Topsky implementation and approved Post-Ops cases have been taken into account, therefore the actual value for 2022 is 0,30 instead of 0,34. None of the reallocated minutes of delay are related to the exceptional event relating to Russia's war of aggression against Ukraine, in the case of Spain.

In the first part of the year 2022, the delay was more moderate and traffic had not exceeded pre-pandemic levels in all ACCs.

From July onwards, with the reactivation of traffic and the development of the high season in most ACCs, more delay minutes were generated, concluding the year with their non-compliance.

Delays were mainly caused by C-ATC Capacity (69% of the 2022 total) and W-Weather (25% of the 2022 total).

At GCCC [Canarias ACC], the splitting of the GCCCRNE sector since July, whose transition process has been extended until the end of the year, is expected to improve operations from 2023 onwards.

At LECB [BarcelonaACC], weather accounts for almost half of the delay. In LECM and LECS, most of the delay is due to C-ATC Capacity.

In LECP [Palma ACC], the delay is mainly concentrated in Jul-Aug due to C-ATC Capacity. In Oct-Nov there was some impact due to the implementation of Topsky in Portugal in GCCC, LECM and LECS [Sevilla ACC].

Monitoring process for capacity performance

The AESA Monitoring Process continues to monitor this indicator on a monthly basis taking into account the different causes of delay, since the incentive system implemented for RP3 considers a mechanism modulated by causes of delay. The evolution of the attributable and non-attributable delay causes is monitored in order to apply the incentive mechanism and to identify the reasons in the event of non-compliance.

The alert mechanism continues to be active to warn, months before the end of the year, of possible non-compliance. In 2022 this mechanism was activated to report to the Commission the expected non-compliance of this indicator, which finally occurred.

Capacity Planning

The NOP Recovery Plan was the NOP structured plan adapted since 2020 (COVID-19 crisis), updated every week, initially covering an outlook of four weeks and later reconverted into the NOP Rolling Seasonal Plan covering an outlook of six weeks. The time horizon and frequency of the updates is regularly reviewed.

Every week ENAIRE updated data to the plan (planned sector openings, maximum possible sector openings, sector capacity reductions if any, availability of support to operations staff, additional information -e.g. other constraints to be highlighted- and special events and major projects). The plan is a living document regularly updated and published by NM in order to be adapted to the changed conditions of the Air Navigation Service.

Also a NOP for the 2022-2026 period was elaborated. This is the current status of the main projects included in ESPP3 planned for 2022 (included in the NOP too) and some additional information over the planned projects for 2023:

- ALL ACCs: ATFCM measures (continuous); Optimized sector configurations and sector capacities (continuous); iTEC 4.1 - TTM, Complexity Manager, MTCO and Stripless En-route (ongoing); contained ATCOS increase (in progress); IMPACT V2 - Flows complexity monitoring (concluded in 2023); iCMON - Conformance monitor (planned 2023); STAM (planned 2023).
- PALMA ACC: Split Menorca - MXX (completed in 2023).
- CANARIAS ACC: FRA (ongoing); Morocco interface (ongoing); Splitting of NE sector and cluster; RNAV1 in GCTS - NIVARIA (planned 2023).
- MADRID ACC: FRA (ongoing).
- SEVILLA ACC: FRA (ongoing); Improvement of operation mode TWR-APP LEMG (Ongoing); MIDAS - Málaga APP - impacting en-route (planned 2023); Redesign of MAR sector - MIDAS - SEVILLA (planned 2023).
- BARCELONA ACC: FRA (Ongoing); Splitting of Balse Sector (completed in 2023).

ATCO in OPS (FTE)

| Barcelona ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
|----------------------------|------|------|------|------|------|------|--------------|
| Planned (Perf Plan) | - | - | 341 | 350 | 350 | 338 | |
| Actual | 339 | 323 | 347 | 351 | | | |
| | | | | | | | |
| Canarias ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 161 | 164 | 164 | 162 | |
| Actual | 156 | 151 | 155 | 171 | | | |
| | | | | | | | |
| Madrid ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 434 | 407 | 386 | 398 | |
| Actual | 425 | 415 | 436 | 423 | | | |
| | | | | | | | |
| Palma ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 128 | 120 | 118 | 121 | |
| Actual | 130 | 137 | 133 | 133 | | | |
| | | | | | | | |
| Sevilla ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 137 | 132 | 129 | 133 | |
| Actual | 140 | 131 | 136 | 131 | | | |

"Number of additional ATCOs in OPS planned to start working in the OPS room (FTEs)" it's been considered all the operative ATCOs (C4) who started working for all reasons: CMCD, transfer, secondment, article 88 (II ATCOs collective bargaining agreement), new recruitments, unpaid leave return (voluntary or without job post reservation), change of designation, etc.

"Number of ATCOs in OPS planned to stop working in the OPS room (FTEs)" it's been considered all the operative ATCOs (C4) who stopped working for all reasons: retirements, RAE or RA concessions, dismissals, CMCD, transfer, end of a secondment, end of article 88 application, voluntary unpaid leave, change of designation, etc.

In the versions previously submitted, the following criterion was considered:

Number of additional ATCOs in OPS who have started working in the OPS room (FTEs): New ATCOs in ENAIRE and ATCOs who have moved to the ACCs by CMCD during the year. Incorporated ATCOs are considered.

Number of ATCOs in OPS who have stopped working in the OPS room (FTEs): For operative ATCOs (C4), retirements, dismissals (permanent disabilities, deaths, voluntary leaves, etc.) and RA concessions are considered.

Application of Corrective Measures for Capacity (if applicable)

While in LECB (Barcelona ACC) the delay due to W-Weather accounted for 45% of the total in the ACC and therefore a very significant contribution, in LECM [Madrid ACC] and LECS [Sevilla ACC] the delay due to C-ATC Capacity accounted for 79% and 87%, respectively.

Compared to 2019, the high records of delay in LECP [Palma ACC] and LECS in summer stand out, these are the ACCs that have reached pre-pandemic traffic levels more quickly.

- LECB: Some action as planned LECBBAS split with significant contribution to increase capacity in this bottleneck sector, has not yet taken in place.
- GCCC [Canarias ACC]: The GCCCRNE sector split introduced in July 2022 has not yet been put to use in Canarias' high season (November to February), but it is though this project will provide important capacity increase in Canarias.
- LECM: The ZAR-TER split will improve the situation, but further work will be required to increase capacity in the upper sectors. A possible way forward being evaluated is the creation of super-high sectors in all the ACC.
- LECP : Some action as split of LECPMXX have not yet been implemented but it will provide a significant increase capacity in the bottleneck sector in LECP.
- LECS: Is still pending on implementation the redesign of the sectors feeding Malaga (MA4 and neighbouring airspaces), together with new approach procedures (trombone-based) for LEMG, will provide a very important benefit in terms of capacity both in Sevilla ACC and in Malaga airport approach.

Summer 2022 was more complex than 2019 and on-time performance was poor. In particular noted that LECS and LECP were two of the few ACCs in which traffic exceeded the pre-pandemic levels. Flight, airport and air traffic operations all suffered from volatility of demand, in general.

Weather regulations were particularly volatile in 2022. And in the case of Spain the percentage of the annual ATFM delay due to weather increased over the 2019 percentage value of the whole annual ATFM delay figures. Other circumstances could be new distribution of traffic flows due to changes in the en-route unit rates and to the resumption of flight traffic to and from Morocco after their alleviation of COVID measures.

NSA recommendations to the ANSP to rectify situation

Endorse ENAIRE to continue implementing the capacity plan to achieve the objectives of delay and better air traffic management, focusing on projects that have an impact on increasing available capacity as well as implementing projects that improve operations to handle increases in traffic above pre-pandemic levels.

Capacity projects already achieved by ANSP include:

Continued effort to increase staffing levels and/or availability in Madrid ACC and Barcelona ACC;
Continued alignment of traffic demand and sector opening times in Madrid ACC and Barcelona ACC;
Revision of sector capacities in Madrid ACC and Barcelona ACC;
Network weather mitigation measures in Barcelona ACC.

Capacity projects that remain ongoing include:

France / Spain airspace restructuring project and re-sectorisation in Barcelona ACC and Madrid ACC [2022-2024];
Participation in the Operational Excellence Program of EUROCONTROL (Barcelona ACC and Madrid ACC) [2022-2023].

Additional comments from NSA

AESA is aware that there is a certain risk of not meeting the performance target in 2023 given the degree of seasonality that exists in some units. The various monitoring activities will continue, monthly and annual monitoring, as well as periodic monitoring of the assignment of delay causes in order to know the evolution of the KPIs and the specific characteristics of each unit.

This results in a better knowledge of the behaviour of the indicators and a fluid communication and coordination with the ANSP. Additionally, AESA is monitoring the cases reported by our ANSP through the Post-OPS performance adjustment process, collaborating with both ANSPs and other stakeholders with the aim of deepening the analysis of the cases.

As the year progresses and especially as the summer season unfolds, with the existing follow-up mechanisms thanks to various monitoring and alert system in force, if this risk of non-compliance materializes, it will be notified to the Commission as established in the Regulation (EU) 2019/317.

Summary of capacity performance

Spain experienced an increase in traffic from 1 192k flights in 2021 to 1 983k flights in 2022. However, traffic levels were still below the 2 152k flights in 2019.

In 2022, Spain had 598k minutes of ATFM delay - 68% attributed to ATC capacity; 24% attributed to adverse weather and 7% attributed to 'Other'.

There were an additional 63k minutes of en route ATFM delay originating in the Spanish ACCs that were re-attributed to adjacent ANSPs via the NM post operations delay attribution process:

43k minutes of en route ATFM delay were re-attributed to DSNA, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in Reims ACC.

20k minutes of delay were re-attributed to NAV Portugal due to implementation of the TOPSKY ATM system in Portugal.

A further 15k minutes of delay originated in Spain when airspace was closed due to the possible re-entry of a Chinese space rocket on 4th November 2022.

1. Overview

Spain includes seven airports under RP3 monitoring. However in accordance with IR (EU) 2019/317 and the traffic figures, Ibiza is not monitored for pre-departure delays.

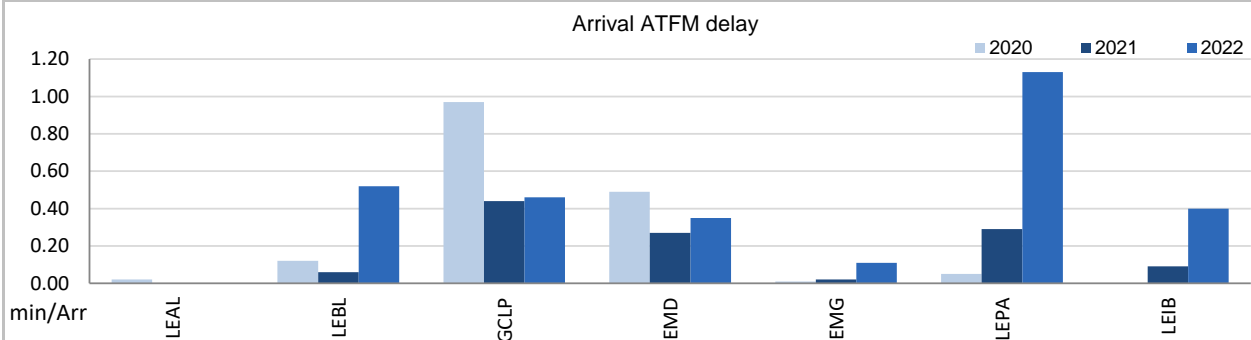
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly implemented where required. Nevertheless, the quality of the reporting from 3 of the 6 the Spanish airports does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at the ensemble of Spanish airports under monitoring in 2022 is still 10% lower than in 2019, but 60% higher than in 2021. Palma and Ibiza surpassed in 2022 the 2019 traffic.

Average arrival ATFM delays in 2022 was 0.48 min/arr, compared to 0.19 min/arr in 2021.

ATFM slot adherence has improved (2022: 97.9%; 2021: 97.2%).

2. Arrival ATFM Delay



The national average arrival ATFM delay at Spanish airports in 2022 was 0.48 min/arr., an increase with respect to the 2021 value (0.19 min/arr) but still lower than the 2019 value (1.02 min/arr). The increase at national level was driven by the worsening of the performance at Palma (LEPA: 2020: 0.05 min/arr; 2021: 0.29 min/arr; 2022: 1.13 min/arr) followed by Barcelona (LEBL: 2020: 0.12 min/arr; 2021: 0.06 min/arr; 2022: 0.52 min/arr) and to some extent Ibiza (LEIB: 2020: 0 min/arr; 2021: 0.09 min/arr; 2022: 0.4 min/arr). Madrid, Malaga and Gran Canaria also observed a slight deterioration.

54% of the delays at Spanish airports were attributed to Weather (mostly at Barcelona and Palma) and 26% to ATC Capacity (mostly at Madrid and Palma).

According to the Spanish monitoring report: *In the first part of the year, the delay was very moderate except in LEMG, which suffered two days with important W-Weather delays that increased its indicator. From July onwards, with the reactivation of traffic and the development of the high season in most airports, more delay minutes were generated. Delays were mainly caused by W-Weather (54% of the 2022 total) considering that almost half of those minutes were due to delays at LEPA in summer and one third at LEBL also in summer. 26% of the delay were attributed to C-ATC Capacity, half in LEMD and half in LEPA. The rest of the delay causes are less than 8%.*

Regarding the particularity of the LEAL and LEIB airports, in which different ANSPs are involved, for 2022, as for 2021 and 2020, it is not necessary to make a breakdown between ENAIRE and Skyway delays, since the incentive scheme is not applicable to these years. However, from 2023 onwards it will be necessary to differentiate this value for both aerodromes for incentive purposes.

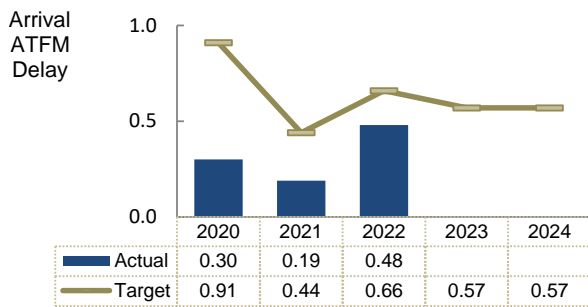
In any case, for 2022 and according to the document "Monitoring of delays in arrivals in RP3 for Alicante and Ibiza airports" prepared by AESA, the part of delay that would correspond to ENAIRE or Skyway (previously FerroNATS) for these two airports would be as follows:

- Alicante: 0,00 min/flight (ENAIRE and Skyway). In post-ops phase a delay was reallocated to en-route leading to a decrease from the initial value of 0,03 to a final value of 0,00 after post-ops.

- Ibiza: 0,14 min/flight (ENAIRE) and 0,26 min/flight (Skyway)

Concerning Russia's war: *Significant variations in traffic flows have been observed in 2021-2022, but it is difficult to identify Russia's war against Ukraine as the main causal factor.*

3. Arrival ATFM Delay – National Target

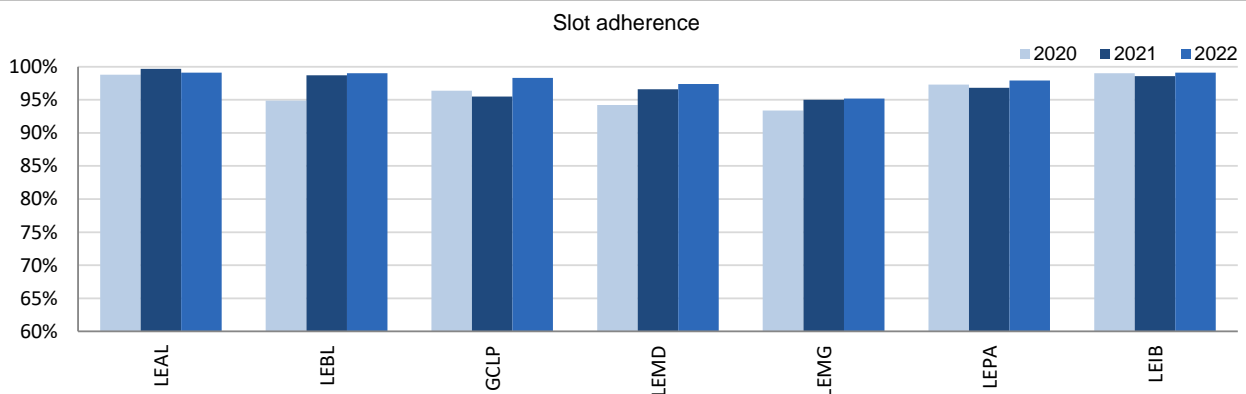


The national target on arrival ATFM delay in 2022 was met.

According to the Spanish monitoring report: *No particular risk of non-compliance with the KPI is expected, but given the degree of seasonality that exists in some units, the various monitoring activities will continue, monthly and annual monitoring, as well as periodic monitoring of the assignment of delay causes in order to know the evolution of the KPIs and the specific characteristics of each unit. This results in a better knowledge of the behaviour of the indicators and a fluid communication and coordination with the ANSP. Additionally, AESA is monitoring the cases reported by our ANSP through the Post-Ops performance adjustment process, collaborating with both ANSPs and other stakeholders with the aim of deepening the analysis of the cases.*

As the year progresses and especially as the summer season unfolds, with the existing follow-up mechanisms thanks to various monitoring and alert system in force, if this risk of non-compliance materializes, it will be notified to the Commission as established in the Regulation (EU) 2019/317.

4. ATFM Slot Adherence



All Spanish airports showed adherence above 95% and the national average was 97.9%, a small improvement with respect to 2021's performance (97.2%). With regard to the 2.1% of flights that did not adhere, 1.2% was early and 0.9% was late.

The Spanish monitoring reports adds: *The result for 2022 (aggregate of the 7 airports subject to monitoring) improves by 0,7% the result of the previous year, being all results well above the value of 80% set in Regulation (EU) No. 255/2010 of the Commission . ANSPs does not believe it is necessary to establish specific improvement measures.*

This PI is being monitored by AESA twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at all 6 Spanish airports subject to monitoring of this indicator. However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes. However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport. Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL. The high share of unidentified delay reported by Barcelona, Madrid and Palma prevents the calculation of this indicator for these three airports. At the rest of airports the quality of the data reporting in 2022 allowed for this calculation. The Spanish monitoring report includes some analysis on the monthly values that could be calculated:

According to the Spanish monitoring report: *GCLP, LEAL, LEMG and LEPA have improved in reporting because there is more monthly data in 2022 than there was in 2021. While LEBL, LEMD and LEIB have only reported data one month. Although LEIB does not yet reach >80k movements, it is monitored together with these 6 airports since it is one of the airports considered in the Spanish performance plan (ESPP3) for RP3. This PI is being monitored by AESA twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.*

The Spanish monitoring report includes some analysis on the monthly values that could be calculated: *After several communications with the airport manager, AESA has understood that codes ZZZ and 999 are generally assigned when no code has been given (and therefore the cause of the delay is not known) or when the actual delay does not match the declared delay. The indicator picks up the initial declared delay data but this is subject to change and so there are occasions when it does not match the actual delay. This is why there is so much indeterminacy represented by these ZZZ and 999 codes. There does not seem to be a simple resolution to this situation since the data needed to publish the indicator is collected around the middle of the following month and the process of defining the codes that are more in line with reality is done through a post-operational analysis that takes considerably longer.*

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Spanish airports in 2022 increased significantly at all airports. The highest pre-departure delays were observed at Palma (LEPA: 2020: 5.44 min/arr; 8.20 min/arr; 2022: 19.98 min/dep) and Malaga (LEMG: 2020: 11.33 min/arr; 10.86 min/arr; 2022: 19.14 min/dep). The worst delays per flight at these airports were observed in Summer, except for Gran Canaria where the highest delays were registered in December.

According to the Spanish monitoring report: *The 2022 values are higher than the 2020-2021 values. The evolution of the indicator throughout 2022 is upward in the first half of the year and then remains stable until the end of the year, this behaviour is given in the 7 airports considered in ESPP3. The aggregated result for 2022 (of the 6 airports subject to monitoring) is 16,20 min/dep, which worsens significantly compared to 2021 (9,09 min/dep).*

The indicator could be directly related to the traffic in arrivals. It would be logical that this type of delay would increase when the number of movements grows. However the historical series with only 3 years (2020-2022) is very small because 2020-2021 are special years and therefore the behaviour of 2022, being only one year, might not be extrapolable for future years. Therefore, for the time being, no conclusions will be drawn regarding this indicator.

This PI is being monitored by AESA twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Alicante-LEAL | 0.02 | 0 | 0 | | | 98.8% | 99.7% | 99.1% | | | n/a | n/a | 0.51 | | | 9.03 | 8.06 | 17.41 | | |
| Barcelona-LEBL | 0.12 | 0.06 | 0.52 | | | 94.9% | 98.7% | 99.0% | | | n/a | n/a | n/a | | | 8.74 | 8.27 | 15.76 | | |
| Gran Canaria-GCLP | 0.97 | 0.44 | 0.46 | | | 96.4% | 95.5% | 98.3% | | | n/a | n/a | 0.35 | | | 11.30 | 9.42 | 14.97 | | |
| Madrid/Barajas-LEMD | 0.49 | 0.27 | 0.35 | | | 94.2% | 96.6% | 97.4% | | | n/a | n/a | n/a | | | 9.52 | 9.68 | 13.11 | | |
| Malaga-LEMG | 0.01 | 0.02 | 0.11 | | | 93.4% | 95.0% | 95.2% | | | n/a | n/a | 0.60 | | | 11.33 | 10.86 | 19.14 | | |
| Palma de Mallorca-LEPA | 0.05 | 0.29 | 1.13 | | | 97.3% | 96.8% | 97.9% | | | n/a | n/a | n/a | | | 5.44 | 8.20 | 19.98 | | |
| Ibiza-LEIB | 0 | 0.09 | 0.4 | | | 99.0% | 98.6% | 99.1% | | | - | - | - | | | - | - | - | | |

SPAIN CONTINENTAL: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Spain Continental ECZ represents 10.8% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 26 January 2022 and found consistent as per Commission Decision (EU) 2022/776 of 13 April 2022
The final version of the plan was adopted and published by Spain in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Spain Continental: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|--------------|---------------|--------------|--------------|--------------|
| En route costs (nominal €) | 598 351 394 | 592 163 350 | 1 190 514 743 | 622 143 018 | 629 825 005 | 633 678 309 |
| Inflation % | 0.0% | 1.0% | | 1.3% | 1.5% | 1.6% |
| Inflation index (100 in 2017) | 102.5 | 103.6 | | 104.9 | 106.5 | 108.2 |
| Real en route costs (€2017) | 587 141 409 | 576 803 493 | 1 163 944 902 | 600 260 618 | 601 512 333 | 598 574 451 |
| Total en route service units | 4 436 942 | 6 369 718 | 10 806 660 | 11 190 159 | 11 637 507 | 12 421 049 |
| Real en route DUC per service unit (€2017) | 132.33 | 90.55 | 107.71 | 53.64 | 51.69 | 48.19 |

| Spain Continental: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|--|---------------|--------------|---------------|--------------|-------|-------|
| En route costs (nominal €) | 598 351 394 | 581 225 503 | 1 179 576 897 | 716 236 299 | | |
| Inflation % | 0.0% | 3.0% | | 8.3% | | |
| Inflation index (100 in 2017) | 102.5 | 105.6 | | 114.4 | | |
| Real en route costs (€2017) | 587 141 409 | 558 011 545 | 1 145 152 954 | 645 860 620 | | |
| Total en route service units | 4 436 942 | 6 382 913 | 10 819 854 | 11 078 709 | | |
| Real en route AUC per service unit (€2017) | 132.33 | 87.42 | 105.84 | 58.30 | | |

| Difference between Actuals and Planned | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-----------------|-------------|--------------|--------------|--------------|------|------|
| En route costs (nominal €) | in value | 0 | -10 937 847 | -10 937 847 | 94 093 281 | | |
| | in % | - | -1.8% | -0.9% | +15.1% | | |
| Inflation % | in p.p. | 0.0 p.p. | 2.0 p.p. | | 7.0 p.p. | | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 2.0 p.p. | | 9.5 p.p. | | |
| Real en route costs (€2017) | in value | 0 | -18 791 948 | -18 791 948 | 45 600 002 | | |
| | in % | - | -3.3% | -1.6% | +7.6% | | |
| Total en route service units | in value | 0 | 13 195 | 13 195 | -111 450 | | |
| | in % | - | +0.2% | +0.1% | -1.0% | | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -3.13 | -1.87 | 4.66 | | |
| | in % | - | -3.5% | -1.7% | +8.7% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was +8.7% (or +4.66 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned en route costs in real terms (+7.6%, or +45.6 M€2017) and lower than planned TSUs (-1.0%). It should be noted that the actual inflation index in 2022 was +9.5 p.p. higher than planned.

En route service units

The difference between the 2022 actual and planned TSUs (-1.0%) falls inside the ±2% dead band. Hence the loss of en route revenues is borne by the ANSPs (see items 10 to 14).

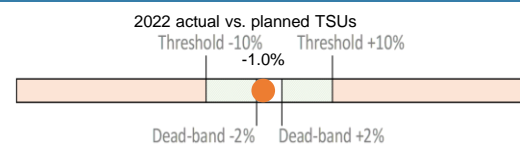
En route costs by entity

The 2022 actual real en route costs are +7.6% (or +45.6 M€2017) higher than planned. This is the result of higher than planned costs for ENAIRE (+8.4%, or +42.3 M€2017), the other ANSP (EA, +16.0%, or +4.0 M€2017) and the NSA/EUROCONTROL (+1.6%, or +0.6 M€2017) and lower than planned costs for the MET service provider (-4.7%, or -1.3 M€2017).

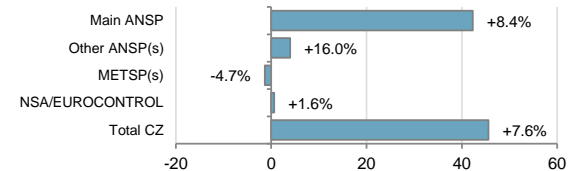
En route costs for the main ANSP (ENAIRE) at charging zone level

Significantly higher than planned en route (Continental) costs in real terms for ENAIRE in 2022 (+8.4%, or +42.3 M€2017) result from:

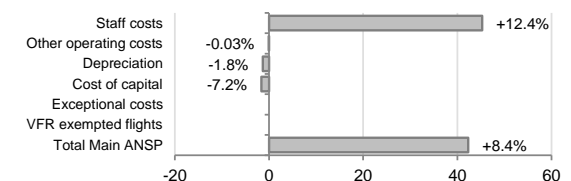
- Significantly higher than planned staff costs (+12.4%, or +45.3 M€2017), reported to be due to "unforeseeable new cost items not covered in the performance plan but required by law (Law 26/2022 of 19 December), which develops the figure of a Special Active Reserve, solving, among others, the problem of the forced retirement of ATCOs at age 65." And the "actual increase of salaries for 2022 was +3.5%, following public employees' salaries decisions adopted by Government, compared to 0%" in the PP.
- Other operating costs are in line with the plan in real terms (-0.03%) mainly due to the inflation impact, but higher in nominal terms (+9.0%), reported to be mainly a result of increasing energy costs.
- Lower than planned depreciation costs (-1.8%),
- Lower than planned cost of capital (-7.2%, or -1.6 M€2017), mainly due to a lower asset base and slightly lower WACC rate (4.4% vs. 4.7% in the PP).



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



SPAIN CONTINENTAL: En route charging zone

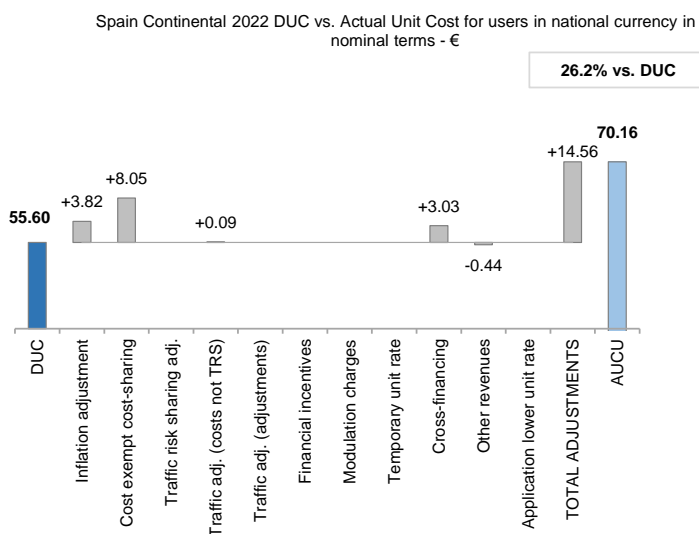
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 55.60 |
| DUC to be charged retroactively | 0.00 |
| DUC | 55.60 |
| Inflation adjustment | 3.82 |
| Cost exempt from cost-sharing | 8.05 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.09 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 3.03 |
| Other revenues | -0.44 |
| Application of lower unit rate | 0.00 |
| Total adjustments | 14.56 |
| AUCU | 70.16 |
| AUCU vs. DUC | +26.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

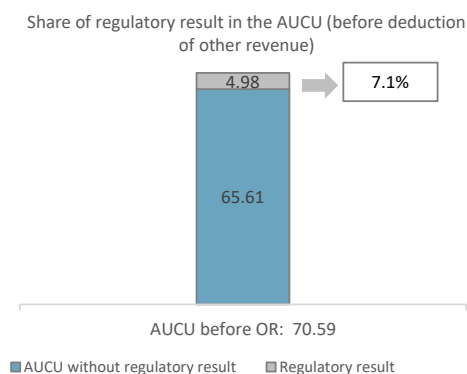
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---------|--|---------------|-------------|
| by item | New and existing investments | 2 343 | 0.21 |
| | Competent authorities and qualified entities costs | 580 | 0.05 |
| | Eurocontrol costs | 62 | 0.01 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 86 181 | 7.78 |
| | Total costs exempt from cost sharing | 89 167 | 8.05 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|--------------|
| ENAIRE (Continental) | 48 960 | 4.42 |
| EA (Continental) | 2 633 | 0.24 |
| METSP(s) | € '000 | €/SU |
| Spain Continental AEMET | 3 598 | 0.32 |
| Total charging zone | 55 191 | 4.98 |
| Actual cost for users*** | 782 051 | 70.59 |
| Regulatory result (% AUCU) | 7.1% | 7.1% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (70.16 €) is +26.2% higher than the nominal DUC (55.60 €). The difference between these two figures (+14.56 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.82 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+8.05 €/SU);
- the addition of the traffic adjustment (+0.09 €/SU) for the costs not subject to traffic risk sharing;
- cross-financing (+3.03 €/SU); and
- the deduction of other revenues (-0.44 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 7.1%.

SPAIN CONTINENTAL: En route main ANSP (ENAIRE)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

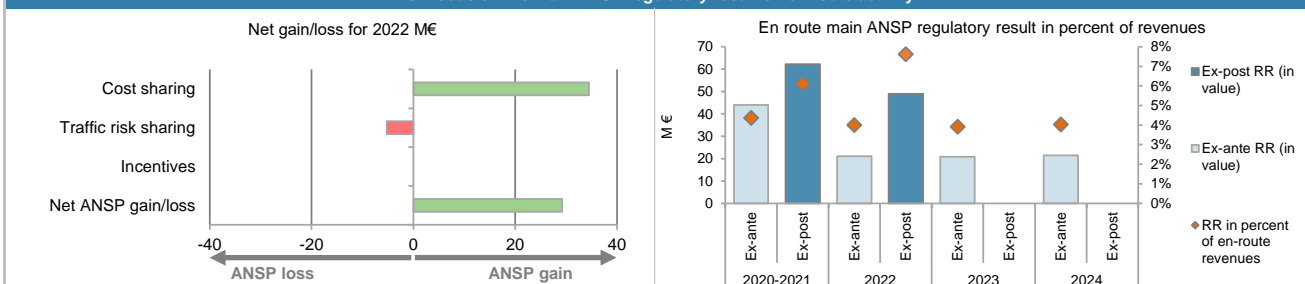
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 10 875 | -87 613 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 7 992 | 38 798 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -490 | 83 290 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 18 378 | 34 474 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.1% | -1.0% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 1 010 523 | 526 613 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 234 | -5 245 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 19 612 | 29 229 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAIRE (Continental) planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|----------------|----------------|------------------|----------------|----------------|----------------|
| Total asset base | 457 138 | 448 005 | 905 143 | 475 226 | 529 766 | 570 677 |
| Proportion of financing through equity (in %) | 73% | 72% | 73% | 61% | 48% | 44% |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| RoE (in value) | 22 366 | 21 666 | 44 032 | 21 072 | 20 804 | 21 508 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 22 366 | 21 666 | 44 032 | 21 072 | 20 804 | 21 508 |
| Revenue for the en route charging zone | 510 411 | 500 112 | 1 010 523 | 526 613 | 532 271 | 534 414 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.4% | 4.3% | 4.4% | 4.0% | 3.9% | 4.0% |
| Ex-ante RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| ENAIRE (Continental) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 457 138 | 433 289 | 890 427 | 466 971 | | |
| Proportion of financing through equity (in %) | 73% | 69% | 71% | 58% | | |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | | |
| RoE (in value) | 22 366 | 20 236 | 42 603 | 19 731 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 19 612 | 19 612 | 29 229 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 22 366 | 39 848 | 62 215 | 48 960 | | |
| Revenue for the en route charging zone | 510 411 | 508 849 | 1 019 260 | 643 455 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.4% | 7.8% | 6.1% | 7.6% | | |
| Ex-post RoE pre-tax rate (in %) | 6.7% | 13.3% | 9.8% | 18.0% | | |

13. Focus on the main ANSP regulatory result on en route activity



ENAIRE net gain on activity in the Spain Continental en route charging zone in the year 2022

ENAIRE reported a net gain of +29.2 M€, a combination of a gain of +34.5 M€ arising from the cost sharing mechanism with a loss of -5.2 M€ arising from the traffic risk sharing mechanism.

ENAIRE overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+29.2 M€) and the actual RoE (+19.7 M€) amounts to +49.0 M€ (7.6% of the en route revenues). The resulting ex-post rate of return on equity is 18.0%, which is higher than the 7.2% planned in the PP. It should be noted that an amount of +83.3 M€ is submitted as costs exempt from cost-sharing, reported to be mainly due to the unforeseen change in law and significantly impacting the staff costs.

SPAIN CONTINENTAL: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|--------------|--------------|-------------------|--------------|--------------|--------------|
| EA (Continental) planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 56 | 185 | 240 | 331 | 546 | 829 |
| Revenue for the en route charging zone | 22 834 | 24 166 | 47 000 | 25 764 | 26 878 | 28 098 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.2% | 0.8% | 0.5% | 1.3% | 2.0% | 3.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.4% | 0.8% | 0.6% | 1.0% | 1.5% | 2.0% |
| EA (Continental) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 56 | -1 480 | -1 425 | 2 633 | | |
| Revenue for the en route charging zone | 22 834 | 25 272 | 48 106 | 32 592 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.2% | -5.9% | -3.0% | 8.1% | | |
| Ex-post RoE pre-tax rate (in %) | 0.4% | -3.8% | -2.7% | 3.7% | | |
| Spain Continental AEMET planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 647 | 1 663 | 3 310 | 1 713 | 1 764 | 1 782 |
| Revenue for the en route charging zone | 27 933 | 28 508 | 56 441 | 29 433 | 30 177 | 30 768 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.9% | 5.8% | 5.9% | 5.8% | 5.8% | 5.8% |
| Ex-ante RoE pre-tax rate (in %) | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Spain Continental AEMET actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 647 | 1 904 | 3 551 | 3 598 | | |
| Revenue for the en route charging zone | 27 933 | 28 856 | 56 789 | 31 415 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.9% | 6.6% | 6.3% | 11.5% | | |
| Ex-post RoE pre-tax rate (in %) | 3.0% | 3.4% | 3.2% | 6.3% | | |
| Total other ANSPs planned regulatory result (€ '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 702 | 1 848 | 3 550 | 2 044 | 2 311 | 2 611 |
| Revenue for the en route charging zone | 50 767 | 52 674 | 103 442 | 55 196 | 57 055 | 58 865 |
| Ex-ante regulatory result (+/-) in percent of revenues | 3.4% | 3.5% | 3.4% | 3.7% | 4.0% | 4.4% |
| Ex-ante RoE pre-tax rate (in %) | 2.4% | 2.4% | 2.4% | 2.3% | 2.4% | 2.6% |
| Total other ANSPs actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 1 702 | 424 | 2 126 | 6 231 | | |
| Revenue for the en route charging zone | 50 767 | 54 128 | 104 895 | 64 006 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 3.4% | 0.8% | 2.0% | 9.7% | | |
| Ex-post RoE pre-tax rate (in %) | 2.4% | 0.5% | 1.3% | 4.9% | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Spain Continental (EA, AEMET) corresponds to 9.7% of the en route revenues. The ex-post RoE (+4.9%) is higher than planned (+2.3%). | | | | | | |

SPAIN CANARIAS: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

1. Contextual economic information: en route air navigation services

- Spain Canarias ECZ represents 1.7% of the SES en route ANS actual costs in 2022
- National currency: EUR
- Performance Plan: RP3 draft performance plan dated 26 January 2022 and found consistent as per Commission Decision (EU) 2022/776 of 13 April 2022
The final version of the plan was adopted and published by Spain in accordance with Article 16 (a) of Regulation (EU) 2019/317

2. Monitoring of the en route determined unit cost (DUC) at charging zone level

The **Determined Unit Cost (DUC)** is the cost per service unit, at which the service is planned to be provided during the year. The **Actual Unit Cost (AUC)** reflects the cost per service unit, at which the service has actually been provided during the year.

The monitoring of the DUC / AUC is carried out in national currency and in real terms, at 2017 prices.

3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC)

| Spain Canarias: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|--------------|---------------|--------------|--------------|--------------|
| En route costs (nominal €) | 94 071 894 | 94 122 644 | 188 194 538 | 98 205 202 | 99 602 071 | 101 565 300 |
| Inflation % | 0.0% | 1.0% | | 1.3% | 1.5% | 1.6% |
| Inflation index (100 in 2017) | 102.5 | 103.6 | | 104.9 | 106.5 | 108.2 |
| Real en route costs (€2017) | 92 318 035 | 91 644 355 | 183 962 389 | 94 667 134 | 94 956 026 | 95 745 531 |
| Total en route service units | 802 932 | 949 650 | 1 752 582 | 1 414 576 | 1 610 163 | 1 775 489 |
| Real en route DUC per service unit (€2017) | 114.98 | 96.50 | 104.97 | 66.92 | 58.97 | 53.93 |

| Spain Canarias: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
|---|---------------|--------------|--------------|--------------|-------|-------|
| En route costs (nominal €) | 94 071 894 | 91 801 425 | 185 873 319 | 113 080 838 | | |
| Inflation % | 0.0% | 3.0% | | 8.3% | | |
| Inflation index (100 in 2017) | 102.5 | 105.6 | | 114.4 | | |
| Real en route costs (€2017) | 92 318 035 | 88 092 429 | 180 410 464 | 101 883 899 | | |
| Total en route service units | 802 932 | 1 007 563 | 1 810 495 | 1 789 655 | | |
| Real en route AUC per service unit (€2017) | 114.98 | 87.43 | 99.65 | 56.93 | | |

| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
|---|-------------|--------------|--------------|---------------|------|------|
| En route costs (nominal €) | | | | | | |
| in value | 0 | -2 321 219 | -2 321 219 | 14 875 635 | | |
| in % | - | -2.5% | -1.2% | +15.1% | | |
| Inflation % | | | | | | |
| in p.p. | 0.0 p.p. | 2.0 p.p. | | 7.0 p.p. | | |
| Inflation index (100 in 2017) | | | | | | |
| in p.p. | 0.0 p.p. | 2.0 p.p. | | 9.5 p.p. | | |
| Real en route costs (€2017) | | | | | | |
| in value | 0 | -3 551 926 | -3 551 926 | 7 216 765 | | |
| in % | - | -3.9% | -1.9% | +7.6% | | |
| Total en route service units | | | | | | |
| in value | 0 | 57 913 | 57 913 | 375 079 | | |
| in % | - | +6.1% | +3.3% | +26.5% | | |
| Real en route unit cost per service unit (€2017) | | | | | | |
| in value | 0.00 | -9.07 | -5.32 | -9.99 | | |
| in % | - | -9.4% | -5.1% | -14.9% | | |

4. Focus on en route DUC monitoring at charging zone level

AUC vs. DUC

In 2022, the en route AUC was -14.9% (or -9.99 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+26.5%) and significantly higher than planned en route costs in real terms (+7.6%, or +7.2 M€2017). It should be noted that actual inflation index in 2022 was +9.5 p.p. higher than planned.

En route service units

The difference between the 2022 actual and planned TSUs (+26.5%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (ENAIRES) retaining an amount of +2.8 M€2017.

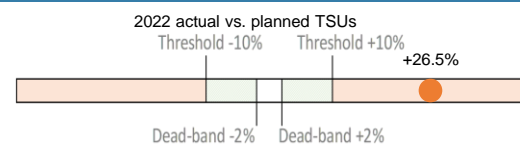
En route costs by entity (Canarias)

The 2022 actual real en route costs are +7.6% (+7.2 M€2017) higher than planned. This is the result of higher than planned costs for ENAIRES (+6.4%, or +4.5 M€2017), the other ANSP (EA +18.4%, or +2.1 M€2017) and the NSA/EUROCONTROL (+10.2%, or +0.7 M€2017), while for the MET SP the costs are lower than planned (-1.5%, or -0.1 M€2017).

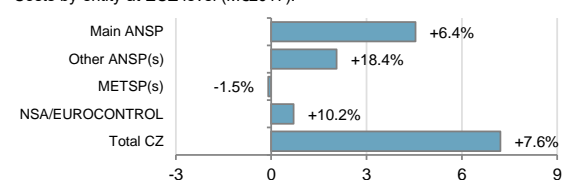
En route costs for the main ANSP (ENAIRES) at Canarias charging zone level

Significantly higher than planned en route costs in real terms for ENAIRES in 2022 (+6.4%, or +4.5 M€2017) result from:

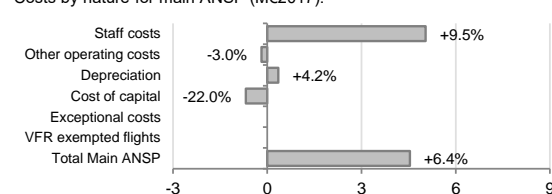
- Significantly higher than planned staff costs (+9.5%, or +5.0 M€2017), reported to be due to "unforeseeable new cost items not covered in the performance plan but required by law (Law 26/2022 of 19 December), which develops the figure of a Special Active Reserve, solving, among others, the problem of the forced retirement of ATCOs at age 65." And the "actual increase of salaries for 2022 was +3.5%, following public employees' salaries decisions adopted by Government, compared to 0%" in the PP.
- Lower than planned other operating costs in real terms (-3.0%, or -0.2 M€2017) due to the inflation impact, but higher in nominal terms (+5.7%), reported to be mainly due to higher energy costs.
- Higher than planned depreciation costs (+4.2%, or +0.4 M€2017),
- Significantly lower than planned cost of capital (-22.0%, or -0.7 M€2017), as a combination of a lower asset base and lower WACC rate (4.4%) than planned (4.7%).



Costs by entity at ECZ level (M€2017):



Costs by nature for main ANSP (M€2017):



SPAIN CANARIAS: En route charging zone

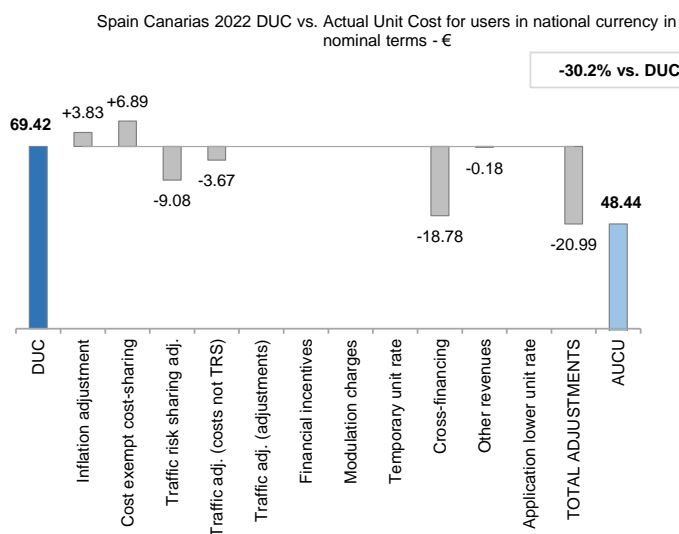
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 69.42 |
| DUC to be charged retroactively | 0.00 |
| DUC | 69.42 |
| Inflation adjustment | 3.83 |
| Cost exempt from cost-sharing | 6.89 |
| Traffic risk sharing adjustment | -9.08 |
| Traffic adj. (costs not TRS) | -3.67 |
| Traffic adj. (adjustments)* | - |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | - |
| Cross-financing | -18.78 |
| Other revenues | -0.18 |
| Application of lower unit rate | 0.00 |
| Total adjustments | -20.99 |
| AUCU | 48.44 |
| AUCU vs. DUC | -30.2% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

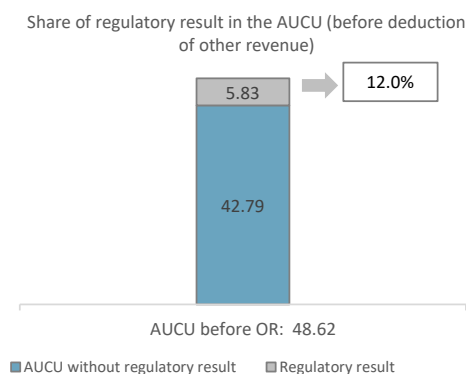
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. En route costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|---------------|-------------|
| by item | New and existing investments | 823 | 0.46 |
| | Competent authorities and qualified entities costs | 171 | 0.10 |
| | Eurocontrol costs | 536 | 0.30 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 10 800 | 6.03 |
| Total costs exempt from cost sharing | | 12 329 | 6.89 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|---------------|--------------|
| ENAIRE (Canarias) | 10 719 | 5.99 |
| EA (Canarias) | -842 | -0.47 |
| METSP(s) | | |
| Spain Canarias AEMET | 552 | 0.31 |
| Total charging zone | 10 429 | 5.83 |
| Actual cost for users*** | 87 005 | 48.62 |
| Regulatory result (% AUCU) | 12.0% | 12.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (48.44 €) is -30.2% lower than the nominal DUC (69.42 €). The difference between these two figures (-20.99 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+3.83 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+6.89 €/SU);
- the deduction of the traffic risk sharing adjustments (-9.08 €/SU);
- the deduction of the traffic adjustment (-3.67 €/SU) for the costs not subject to traffic risk sharing;
- the cross-financing (-18.78 €/SU); and
- the deduction of other revenues (-0.18 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 12.0%.

SPAIN CANARIAS: En route main ANSP (ENAIRE)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

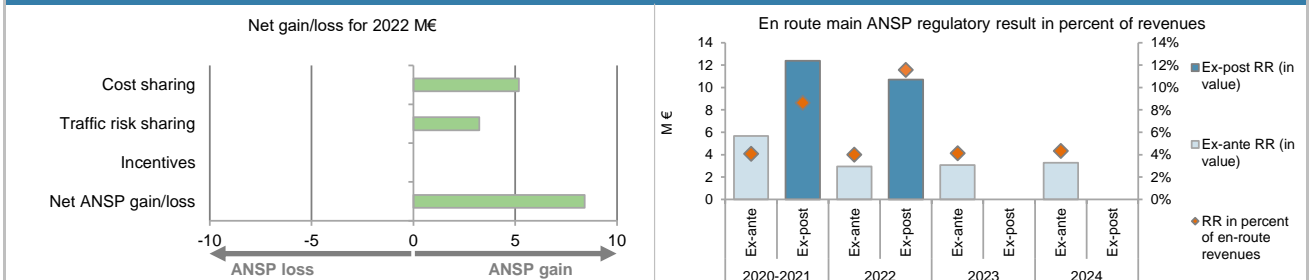
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 2 539 | -10 830 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 145 | 5 591 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 55 | 10 414 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 3 739 | 5 175 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 3.3% | 26.5% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 138 944 | 73 461 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 323 | 3 232 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 7 061 | 8 407 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAIRE (Canarias) planned regulatory result (€ '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|---|---------------|---------------|----------------|---------------|---------------|---------------|
| Total asset base | 58 405 | 58 016 | 116 421 | 66 256 | 78 077 | 86 972 |
| Proportion of financing through equity (in %) | 73% | 72% | 73% | 61% | 48% | 44% |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| RoE (in value) | 2 858 | 2 806 | 5 663 | 2 938 | 3 066 | 3 278 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 2 858 | 2 806 | 5 663 | 2 938 | 3 066 | 3 278 |
| Revenue for the en route charging zone | 69 474 | 69 471 | 138 944 | 73 461 | 74 535 | 76 099 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.1% | 4.0% | 4.1% | 4.0% | 4.1% | 4.3% |
| Ex-ante RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| ENAIRE (Canarias) actual regulatory result (€ '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 58 405 | 52 731 | 111 136 | 54 709 | | |
| Proportion of financing through equity (in %) | 73% | 69% | 71% | 58% | | |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | | |
| RoE (in value) | 2 858 | 2 463 | 5 320 | 2 312 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 7 061 | 7 061 | 8 407 | | |
| Ex-post regulatory result (+/-) for the en route charging zone | 2 858 | 9 524 | 12 381 | 10 719 | | |
| Revenue for the en route charging zone | 69 474 | 73 993 | 143 466 | 92 698 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.1% | 12.9% | 8.6% | 11.6% | | |
| Ex-post RoE pre-tax rate (in %) | 6.7% | 26.0% | 15.6% | 33.6% | | |

13. Focus on the main ANSP regulatory result on en route activity



ENAIRE net gain on activity in the Spain Canarias en route charging zone in the year 2022

ENAIRE reported a net gain of +8.4 M€, as a combination of a gain of +5.2 M€ arising from the cost sharing mechanism, with a gain of +3.2 M€ arising from the traffic risk sharing mechanism.

ENAIRE overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+8.4 M€) and the actual RoE (+2.3 M€) amounts to +10.7 M€ (11.6% of the en route revenues). The resulting ex-post rate of return on equity is 33.6%, which is higher than the 7.2% planned in the PP. It should be noted that an amount of +10.4 M€ is submitted as costs exempt from cost-sharing, reported to be mainly due to the unforeseen change in law and significantly impacting the staff costs.

SPAIN CANARIAS: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| EA (Canarias) planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 25 | 103 | 128 | 188 | 284 | 393 |
| Revenue for the en route charging zone | 10 747 | 11 039 | 21 785 | 11 699 | 12 070 | 12 485 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.2% | 0.9% | 0.6% | 1.6% | 2.4% | 3.1% |
| Ex-ante RoE pre-tax rate (in %) | 0.4% | 0.8% | 0.7% | 1.0% | 1.5% | 2.0% |
| EA (Canarias) actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 25 | -345 | -320 | -842 | | |
| Revenue for the en route charging zone | 10 747 | 11 393 | 22 140 | 13 721 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.2% | -3.0% | -1.4% | -6.1% | | |
| Ex-post RoE pre-tax rate (in %) | 0.4% | -3.8% | -2.0% | -7.7% | | |
| Spain Canarias AEMET planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 324 | 327 | 651 | 337 | 347 | 350 |
| Revenue for the en route charging zone | 5 805 | 5 926 | 11 731 | 6 119 | 6 273 | 6 397 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.6% | 5.5% | 5.5% | 5.5% | 5.5% | 5.5% |
| Ex-ante RoE pre-tax rate (in %) | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Spain Canarias AEMET actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 324 | 377 | 701 | 552 | | |
| Revenue for the en route charging zone | 5 805 | 6 001 | 11 806 | 6 566 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.6% | 6.3% | 5.9% | 8.4% | | |
| Ex-post RoE pre-tax rate (in %) | 3.0% | 3.5% | 3.3% | 4.8% | | |
| Total other ANSPs planned regulatory result (€ '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 349 | 429 | 778 | 524 | 631 | 743 |
| Revenue for the en route charging zone | 16 552 | 16 965 | 33 517 | 17 819 | 18 343 | 18 883 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.1% | 2.5% | 2.3% | 2.9% | 3.4% | 3.9% |
| Ex-ante RoE pre-tax rate (in %) | 2.0% | 1.8% | 1.9% | 1.7% | 2.1% | 2.4% |
| Total other ANSPs actual regulatory result (€ '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 349 | 31 | 381 | -290 | | |
| Revenue for the en route charging zone | 16 552 | 17 394 | 33 945 | 20 287 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 2.1% | 0.2% | 1.1% | -1.4% | | |
| Ex-post RoE pre-tax rate (in %) | 2.0% | 0.2% | 1.0% | -1.3% | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Spain Canarias (EA and AEMET) corresponds to -1.4% of the en route revenues. | | | | | | |

SPAIN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|--|-----------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Spain TCZ represents 8.7% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 7 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 1 Airports with more than 80,000 IFR mvmts: 6 National currency: EUR Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Spain: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal €) | 95 964 862 | 104 576 746 | 200 541 608 | 103 842 314 | 104 878 596 | 105 253 510 |
| Inflation % | 0.0% | 1.0% | | 1.3% | 1.5% | 1.6% |
| Inflation index (100 in 2017) | 102.5 | 103.6 | | 104.9 | 106.5 | 108.2 |
| Real terminal costs (€2017) | 93 857 401 | 101 330 684 | 195 188 085 | 99 507 764 | 99 223 546 | 98 238 295 |
| Total terminal service units | 349 849 | 497 176 | 847 024 | 840 734 | 880 377 | 924 351 |
| Real terminal DUC per service unit (€2017) | 268.28 | 203.81 | 230.44 | 118.36 | 112.71 | 106.28 |
| Spain: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal €) | 95 964 862 | 100 387 940 | 196 352 802 | 119 486 996 | | |
| Inflation % | 0.0% | 3.0% | | 8.3% | | |
| Inflation index (100 in 2017) | 102.5 | 105.6 | | 114.4 | | |
| Real terminal costs (€2017) | 93 857 401 | 95 606 763 | 189 464 164 | 105 746 780 | | |
| Total terminal service units | 349 849 | 504 497 | 854 346 | 838 209 | | |
| Real terminal AUC per service unit (€2017) | 268.28 | 189.51 | 221.77 | 126.16 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal €) | in value | 0 | -4 188 806 | -4 188 806 | 15 644 683 | |
| | in % | - | -4.0% | -2.1% | +15.1% | |
| Inflation % | in p.p. | 0.0 p.p. | 2.0 p.p. | | 7.0 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 2.0 p.p. | | 9.5 p.p. | |
| Real terminal costs (€2017) | in value | 0 | -5 723 921 | -5 723 921 | 6 239 016 | |
| | in % | - | -5.6% | -2.9% | +6.3% | |
| Total terminal service units | in value | 0 | 7 322 | 7 322 | -2 525 | |
| | in % | - | +1.5% | +0.9% | -0.3% | |
| Real terminal unit cost per service unit (€2017) | in value | 0.00 | -14.30 | -8.67 | 7.80 | |
| | in % | - | -7.0% | -3.8% | +6.6% | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the terminal AUC was +6.6% (or +7.8 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned terminal costs in real terms (+6.3%, or +6.2 M€2017) and slightly lower than planned TNSUs (-0.3%). It should be noted that the actual inflation index in 2022 was +9.5 p.p. higher than planned.</p> | | | | | | |
| Terminal service units | | | <p>The difference between the 2022 actual and planned TNSUs (-0.3%) falls inside the ±2% dead band. Hence the loss of terminal revenues is borne by the ANSPs (see items 10 to 14).</p> | | | |
| Terminal costs by entity | | | <p>The 2022 actual real terminal costs are +6.3% (or +6.2 M€2017) higher than planned. This includes higher than planned costs for the main ANSP, ENAIRE (+5.8%, or +5.5 M€2017) and the NSA (+58.0%, or +0.7 M€2017) and in line with the PP for the MET service provider (-0.8%, or -0.02 M€2017).</p> | | | |
| Terminal costs for the main ANSP (ENAIRE) at charging zone level | | | <p>Higher than planned terminal costs in real terms for ENAIRE in 2022 (+5.8%, or +5.5 M€2017) result from:</p> <ul style="list-style-type: none"> Significantly higher than planned staff costs (+9.3%, or +7.6 M€2017), reported to be due to "unforeseeable new cost items not covered in the performance plan but required by law (Law 26/2022 of 19 December), which develops the figure of a Special Active Reserve, solving, among others, the problem of the forced retirement of ATCOs at age 65." And the "actual increase of salaries for 2022 was +3.5%, following public employees' salaries decisions adopted by Government, compared to 0%" in the PP. Lower other operating costs (-9.1%, or -0.5 M€2017) mainly due to the inflation index impact (+9.5 p.p.), since in nominal terms other operating costs are in line with the plan (-0.9%). Lower depreciation costs (-16.6% or -1.1 M€2017), Lower cost of capital (-25.3%, or -0.5 M€2017), mainly due to a lower asset base and slightly lower WACC rate (4.4% vs. 4.7% in the PP). | | | |
| | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |

SPAIN: Terminal charging zone

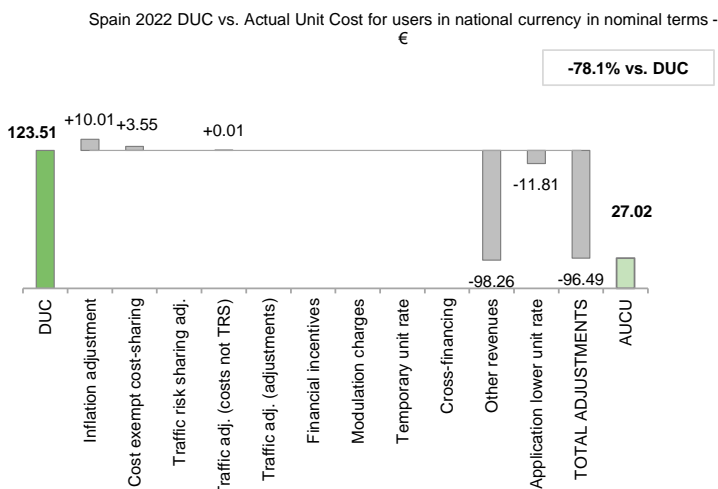
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency and in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | €/SU |
|---------------------------------|---------------|
| Initial DUC charged | 123.51 |
| DUC to be charged retroactively | 0.00 |
| DUC | 123.51 |
| Inflation adjustment | 10.01 |
| Cost exempt from cost-sharing | 3.55 |
| Traffic risk sharing adjustment | 0.00 |
| Traffic adj. (costs not TRS) | 0.01 |
| Traffic adj. (adjustments)* | |
| Financial incentives | 0.00 |
| Modulation of charges | 0.00 |
| Temporary UR** | |
| Cross-financing | 0.00 |
| Other revenues | -98.26 |
| Application of lower unit rate | -11.81 |
| Total adjustments | -96.49 |
| AUCU | 27.02 |
| AUCU vs. DUC | -78.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

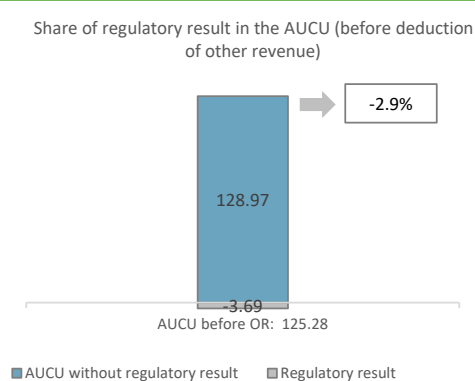
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | € '000 | €/SU |
|---|--|--------------|-------------|
| by item | New and existing investments | -1 579 | -1.88 |
| | Competent authorities and qualified entities costs | 722 | 0.86 |
| | Eurocontrol costs | 0 | 0.00 |
| | Pension costs | 0 | 0.00 |
| | Interest on loans | 0 | 0.00 |
| | Changes in law | 3 831 | 4.57 |
| Total costs exempt from cost sharing | | 2 973 | 3.55 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | € '000 | €/SU |
|-----------------------------------|----------------|---------------|
| ENAIRES | -3 326 | -3.97 |
| METSP(s) | € '000 | €/SU |
| Spain-MET-AEMET | 234 | 0.28 |
| Total charging zone | -3 092 | -3.69 |
| Actual cost for users*** | 105 008 | 125.28 |
| Regulatory result (% AUCU) | -2.9% | -2.9% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (27.02 €) is -78.1% lower than the nominal DUC (123.51 €). The difference between these two figures (-96.49 €/SU) is due to:

- the deduction of the other revenues (-98.54 €/SU). Since aerodrome service is subject to a contract between AENA (the airport operator) and ENAIRES, and with a view that only the final approach costs are actually recovered via terminal unit rate, not the aerodrome ones, the amount of this contract for each year represents a subtraction of the cost base for the calculation of the unit rate under the form of other revenues.

- the positive inflation adjustment resulting from higher than planned inflation (+10.01 €/SU);

- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+3.55 €/SU);

- the addition of the traffic adjustment (+0.01 €/SU) for the costs not subject to traffic risk sharing; and

- the application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-11.81 €/SU);

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -2.9%.

SPAIN: Terminal main ANSP (ENAIRES)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency and in nominal terms.

Note 1: It is noted that only a smaller portion of terminal determined costs (≈20% in 2022) is charged to airspace users through terminal charges, while the rest is financed through the income relating to the service agreement with the airport operator (see also box 9), which is "for somewhat fixed amount independent from the traffic levels". This should be taken into consideration when interpreting the regulatory result for Spain TCZ.

Note 2: Ex-post RR does not take into account the application of the lower unit rate as per Art. 29.6 (loss in revenues corresponds to -9.9 M€ for 2022).

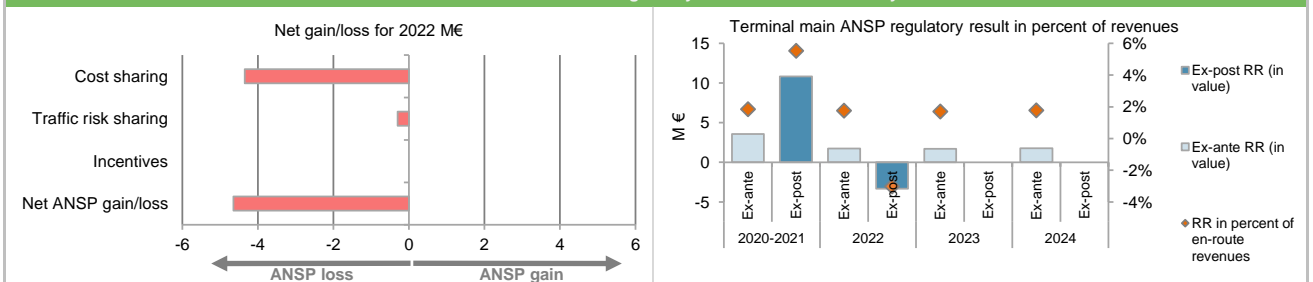
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 4 692 | -14 797 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 814 | 8 237 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -651 | 2 212 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 5 855 | -4 348 | | |
| Traffic risk sharing (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.9% | -0.3% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 193 223 | 99 782 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 1 670 | -300 | | |
| Incentives (€ '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 7 525 | -4 648 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| ENAIRES planned regulatory result (€ '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|---------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 36 398 | 37 234 | 73 632 | 39 507 | 43 790 | 47 474 |
| Proportion of financing through equity (in %) | 73% | 72% | 73% | 61% | 48% | 44% |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| RoE (in value) | 1 781 | 1 801 | 3 582 | 1 752 | 1 720 | 1 789 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 1 781 | 1 801 | 3 582 | 1 752 | 1 720 | 1 789 |
| Revenue for the terminal charging zone | 92 353 | 100 869 | 193 223 | 99 782 | 100 430 | 100 445 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.9% | 1.8% | 1.9% | 1.8% | 1.7% | 1.8% |
| Ex-ante RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | 8.2% | 8.6% |
| ENAIRES actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 36 398 | 32 456 | 68 854 | 31 271 | | |
| Proportion of financing through equity (in %) | 73% | 69% | 71% | 58% | | |
| RoE pre-tax rate (in %) | 6.7% | 6.7% | 6.7% | 7.2% | | |
| RoE (in value) | 1 781 | 1 516 | 3 297 | 1 321 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 7 525 | 7 525 | -4 648 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 2) | 1 781 | 9 041 | 10 822 | -3 326 | | |
| Revenue for the terminal charging zone | 92 353 | 103 703 | 196 056 | 109 931 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 2) | 1.9% | 8.7% | 5.5% | -3.0% | | |
| Ex-post RoE pre-tax rate (in %) | 6.7% | 40.1% | 22.0% | -18.2% | | |

13. Focus on main ANSP regulatory result on terminal activity



ENAIRES net gain on activity in the Spain Continental terminal charging zone in the year 2022

ENAIRES reported a net loss of -4.6 M€, as a combination of a loss of -4.3 M€ arising from the cost sharing mechanism, with a loss of -0.3 M€ arising from the traffic risk sharing mechanism.

ENAIRES overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-4.6 M€) and the actual RoE (+1.3 M€) amounts to -3.3 M€ (-3.0% of the terminal revenues). The resulting ex-post rate of return on equity is -18.2%. It should be noted that an amount of +3.0 M€ is submitted as costs exempt from cost-sharing, reported to be mainly due to the unforeseen change in law and significantly impacting the staff costs.

SPAIN: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Spain-MET-AEMET planned regulatory result (€ '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 150 | 154 | 304 | 161 | 176 | 188 |
| Revenue for the terminal charging zone | 2 639 | 2 708 | 5 347 | 2 817 | 2 956 | 3 077 |
| Ex-ante regulatory result (+/-) in percent of revenues | 5.7% | 5.7% | 5.7% | 5.7% | 6.0% | 6.1% |
| Ex-ante RoE pre-tax rate (in %) | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Spain-MET-AEMET actual regulatory result (€ '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 150 | 206 | 356 | 234 | | |
| Revenue for the terminal charging zone | 2 639 | 2 723 | 5 362 | 3 012 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 5.7% | 7.6% | 6.6% | 7.8% | | |
| Ex-post RoE pre-tax rate (in %) | 3.0% | 4.1% | 3.6% | 4.3% | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Spain (AEMET) corresponds to 7.8% of the terminal revenues. The ex-post RoE (+4.3%) is higher than in the PP (+3.0%). | | | | | | |

SPAIN: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|--|---------------|--|---------------|---------------|----------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Spain Continental | | En route charging zone 2: Spain Canarias | | | | | |
| Terminal charging zone 1: Spain | | | | | | | |
| Spain: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 679 459 443 | 668 447 848 | 1 347 907 291 | 694 927 752 | 696 468 359 | 694 319 982 |
| Real terminal costs (€2017) | | 93 857 401 | 101 330 684 | 195 188 085 | 99 507 764 | 99 223 546 | 98 238 295 |
| Real gate-to-gate costs (€2017) | | 773 316 844 | 769 778 531 | 1 543 095 376 | 794 435 516 | 795 691 906 | 792 558 277 |
| En route share (%) | | 87.9% | 86.8% | 87.4% | 87.5% | 87.5% | 87.6% |
| Spain: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 679 459 443 | 646 103 975 | 1 325 563 418 | 747 744 519 | | |
| Real terminal costs (€2017) | | 93 857 401 | 95 606 763 | 189 464 164 | 105 746 780 | | |
| Real gate-to-gate costs (€2017) | | 773 316 844 | 741 710 738 | 1 515 027 582 | 853 491 299 | | |
| En route share (%) | | 87.9% | 87.1% | 87.5% | 87.6% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) in value | | 0 | -28 067 794 | -28 067 794 | 59 055 783 | | |
| in % | | 0.0% | -3.6% | -1.8% | 7.4% | | |
| En route share in p.p. | | 0.0 p.p. | 0.3 p.p. | 0.1 p.p. | 0.1 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are +7.4% (+59.1 M€2017) higher than planned, as en route costs are higher than planned by +52.8 M€2017 and terminal costs are higher than planned by +6.2 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (87.6%) is in line with that planned in the PP for 2022 (87.5%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In € '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| ENAIRES (Spain) | 25 762 | 699 855 | 3.7% | 56 353 | 846 085 | 6.7% | |
| EA (Spain) | 518 | 37 463 | 1.4% | 1 791 | 46 313 | 3.9% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| AEMET (Spain) | 2 211 | 38 369 | 5.8% | 4 383 | 40 993 | 10.7% | |
| Total | 28 491 | 775 687 | 3.7% | 62 527 | 933 391 | 6.7% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Spain covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +62.5 M€ (+65.6 M€ for en route and -3.1 M€ for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 6.7% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (3.7% of gate-to-gate revenues).</p> <p>It should be noted that an amount of 100.8 M€ is submitted as costs exempt from cost-sharing for the three charging zones subject to the SES Performance scheme. These are reported to be mainly due to unforeseen changes in law and are significantly impacting the staff cost. The cost sharing mechanism and the resulting regulatory results for each charging zone are significantly impacted by these amounts.</p> | | | | | | | |
| <p>Spain gate-to-gate 2022 regulatory result in % of revenues</p> | | | | | | | |

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Annual Monitoring Report 2022

Local level view

Sweden

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SWEDEN

Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|------------------------------------|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| LFV | 85 | C | C | D | C | C |
| ACR | 79 | B | C | C | C | C |
| SDATS | 85 | B | C | D | C | C |
| AFAB | 83 | C | C | C | C | C |

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

LFV: All five EoSM components of LFV meet the RP3 target level. The level was maintained compared with 2021.

ACR: Three out of five EoSM components of ACR meet already the 2024 target level. Improvements in the other two components, namely "Safety Culture", "Safety Risk Management" are still expected during RP3 to achieve 2024 targets.

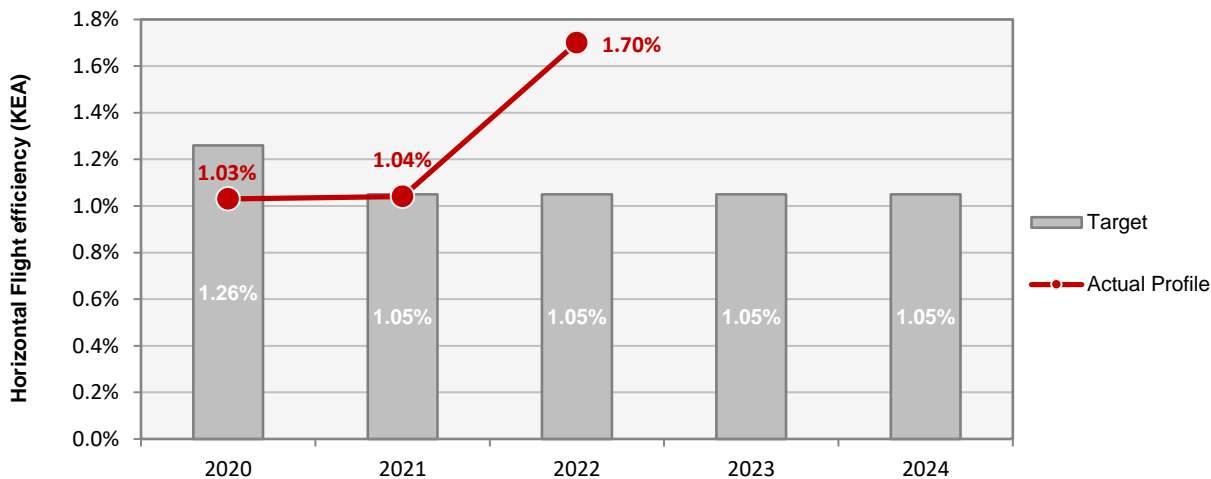
SDATS: Four out of five EoSM components of SDATS meet already the 2024 target level. Improvements in "Safety Culture" are still expected during RP3 to achieve 2024 targets.

AFAB: Four out of five EoSM components of AFAB meet already the 2024 target level. Improvements in "Safety Risk Management" are still expected during RP3 to achieve 2024 targets.

SWEDEN

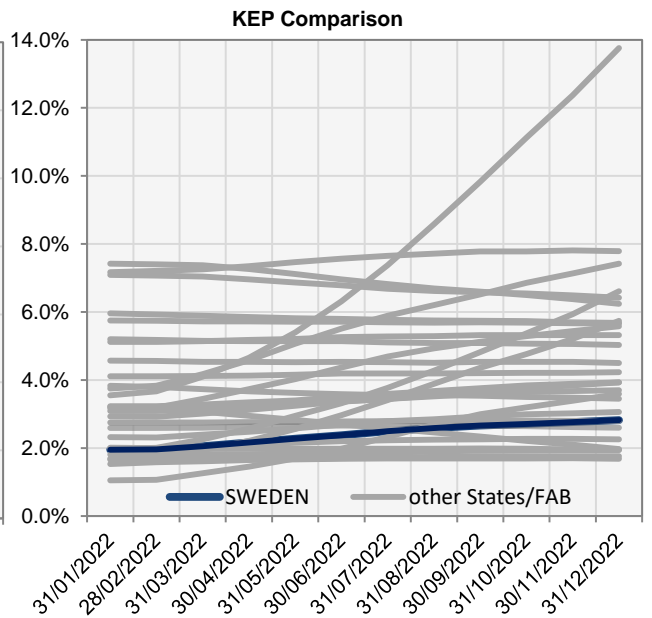
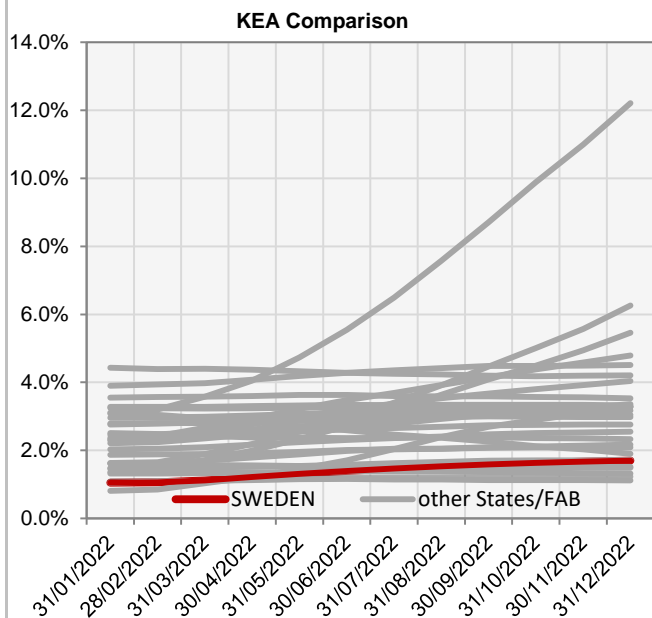
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 1.26% | 1.05% | 1.05% | 1.05% | 1.05% |
| Actual performance | 1.03% | 1.04% | 1.70% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 1.05% | 1.06% | 1.12% | 1.22% | 1.31% | 1.39% | 1.47% | 1.53% | 1.59% | 1.63% | 1.67% | 1.70% |
| KEP | 1.95% | 1.96% | 2.05% | 2.16% | 2.27% | 2.38% | 2.50% | 2.59% | 2.66% | 2.71% | 2.76% | 2.82% |
| KES | 1.80% | 1.80% | 1.88% | 1.98% | 2.09% | 2.21% | 2.33% | 2.43% | 2.51% | 2.56% | 2.61% | 2.66% |



The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

SWEDEN

ENVIRONMENT - Airports

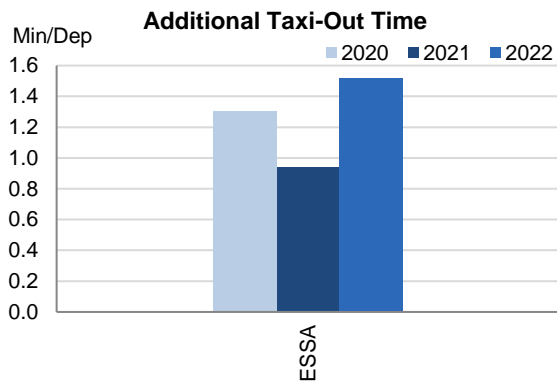
1. Overview

Sweden only has Stockholm (ESSA) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the environmental indicators can be performed. Traffic at this airport in 2022 was still 27% lower than the 2019 levels, but showed an increase of 87% with respect to 2021.

Stockholm showed excellent performance in terms of additional times during RP2 and RP3 so far. In 2022 both additional times increased but remained lower than the SES average.

The share of CDO flights is relatively high compared to other airports monitored in RP3 and has increased with respect to 2021.

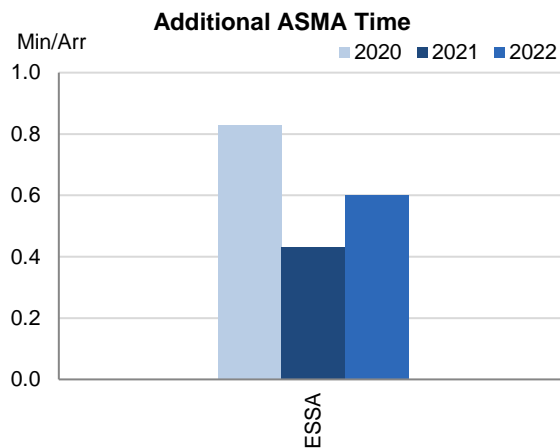
2. Additional Taxi-Out Time



The additional taxi-out times at Stockholm increased by 62% in 2022 (ESSA; 2019: 2.05 min/dep.; 2020: 1.3 min/dep.; 2021: 0.94 min/dep.; 2022: 1.52 min/dep.)

According to the Swedish monitoring report: Due to technical difficulties, we have temporarily shut down our departure sequencing tool in the A-CDM process, and for this reason we've had increased taxi-out times. Above all, this is clearly visible during peak hours when there is a risk of queues on the taxiway. There is an ongoing work to get our departure sequencing tool up and running again, which will further on result in reduced taxi-out times.

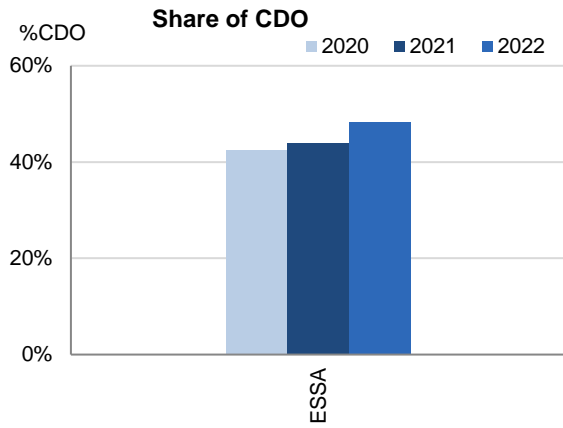
3. Additional ASMA Time



The additional time in the terminal area at Stockholm Arlanda was low and very stable around 1.2 min/arr during RP2. The traffic reduction led to an improvement in performance in 2020 and even further in 2021 and 2022 (ESSA; 2019: 1.15 min/arr.; 2020: 0.83 min/arr.; 2021: 0.43 min/arr.; 2022: 0.6 min/arr.)

According to the Swedish monitoring report: *LFV and Swedavia is conducting the Swea project with the aim of modernizing traffic flows in the Stockholm area. This will result in a major redesign of traffic flows in Stockholm TMA and adjacent ACC sectors. First part of the redesign is planned to be implemented in the fall of 2025. Parallel approaches (Established on RNP-AR + ILS) will be implemented nov 2024.*

4. Share of arrivals applying CDO



The share of CDO flights at Stockholm (ESSA) increased from 44.1% to 48.3% in 2022 which is above the overall RP3 value in 2022 (29.0%).

The monthly values increased in the beginning of 2022 and decreased almost continuously during the rest of the year.

According to the Swedish monitoring report: *Implementation of additional RNP-AR approaches is increasing predictability for arriving traffic and hence improving vertical efficiency. In nov 2024 parallel approaches (Established on RNP-AR + ILS) is planned for implementation. This will hopefully improve both horizontal and vertical flight efficiency.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|------------------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Stockholm/Arlanda-ESSA | 1.3 | 0.94 | 1.52 | | | 0.83 | 0.43 | 0.6 | | | 43% | 44% | 48% | | |

SWEDEN

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

FUA has been implemented in Sweden since 1978, before the concept was defined on European level and the benefit is already achieved, therefore its limitations to environmental factors are small. Sweden have an implemented extended FUA with the content that not limit the capacity.

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sweden | 10% | 11% | | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malmö | 22% | 22% | | | |
| Stockholm | 21% | 20% | | | |

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sweden | | | | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malmö | | | | | |
| Stockholm | | | | | |

Initiatives implemented or planned to improve PI#7

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Sweden | | | | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Malmö | | | | | |
| Stockholm | | | | | |

Initiatives implemented or planned to improve PI#8

SWEDEN

CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | | Observations |
|--|------|------|------|------|------|------|--------------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | | |
| National Target | 0.12 | 0.05 | 0.07 | 0.08 | 0.08 | | |
| Actual performance | 0.01 | 0.00 | 0.04 | | | | |
| NSA's assessment of capacity performance | | | | | | | |
| <p>From an operational point of view the war in Ukraine had of course had an important impact where Sweden lost a lot of the overflights (-29% compared to 2019).</p> <p>Lower levels of traffic have of course contributed to capacity targets being met. However, new flying paths have hindered an even better result.</p> | | | | | | | |
| Monitoring process for capacity performance | | | | | | | |
| <p>Continuous overview during the year to see if there are any anticipated deviations from targets. Contact with provider on the topic if necessary</p> | | | | | | | |
| Capacity Planning | | | | | | | |
| <p>There are no indications that there needs to be any measures addressed to be consistent or better than the target.</p> <p>ANSP is concerned that a higher traffic level than expected in LFV and STATFOR forecasts could result in a shortage of ATCOs.</p> | | | | | | | |
| ATCO in OPS (FTE) | | | | | | | |
| Malmö ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 130 | 136 | 134 | 137 | |
| Actual | 130 | 129 | 130 | 132 | | | |
| Stockholm ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 137 | 143 | 143 | 145 | |
| Actual | 134 | 132 | 136 | 133 | | | |
| <p>Fewer ATCO Students than planned passed their OJT (On the Job Training).</p> <p>4 ATCOs retired in advance (2022 instead of planned 2023).</p> <p>6 ATCOs left En Route for other appointments within LFV or to work for other ANS providers.</p> | | | | | | | |
| Additional information regarding Russia's war of aggression in Ukraine. | | | | | | | |
| <p>More overflying traffic in southeast Baltic Sea last summer (June-Aug) due to closure of Kaliningrad airspace caused capacity shortage in some sectors at Malmö ATCC. Apr. 17000 min delay. Code ATC capacity.</p> <p>To mitigate this situation, the ANSP ensured that more ATCO staff were on duty during the summer.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Sweden experienced an increase in traffic from 380k flights in 2021, with practically zero ATFM delay, to 585k flights in 2022, with 22k minutes of en route ATFM delay.</p> <p>Traffic levels were still substantially below the 823k flights in 2019.</p> | | | | | | | |

1. Overview

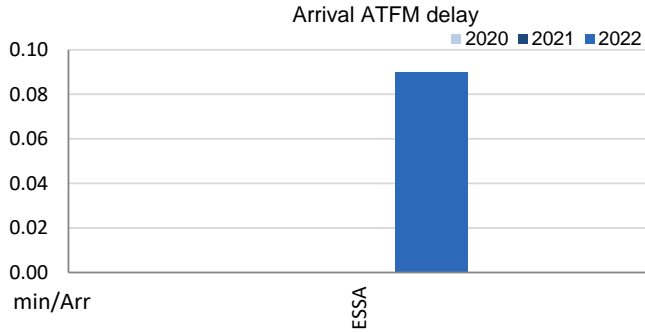
Sweden only has Stockholm (ESSA) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed.

Traffic at this airport in 2022 was still 27% lower than the 2019 levels, but showed an increase of 87% with respect to 2021.

Average arrival ATFM delay in 2022 was 0.09 min/arr, slightly higher compared to 0 min/arr in 2021.

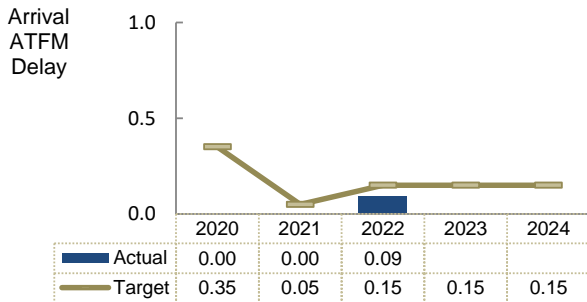
ATFM slot adherence remained very high at almost 98% (2022: 97.8%; 2021: 97.9%).

2. Arrival ATFM Delay



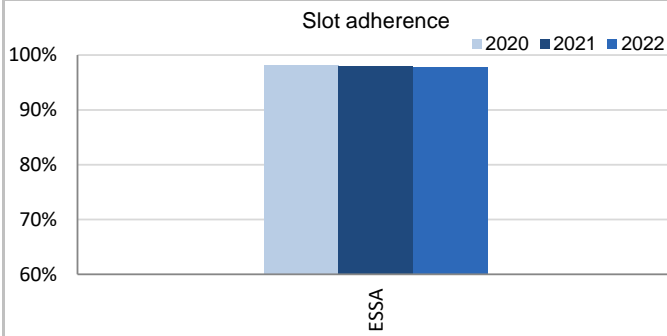
Average arrival ATFM delay at Stockholm in 2022 is for the first time in RP3 above zero, although still very low (ESSA: 2022: 0.09 min/arr)
78% of these delays were attributed to Weather (mostly in November) and ATC Equipment issues (December)

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



Stockholm's ATFM slot compliance was 97.8%, slightly worse than the performance in 2020 (97.9%). With regard to the 2.2% of flights that did not adhere, 0.5% was early and 1.7% was late. The Swedish monitoring report adds: *The ATC provider LFV reports the actual performance which is monitored by the NSA. There is no present risk at the awareness of the NSA that there will be a violation to EU 255/2010.*

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Stockholm. The quality of the airport data reported by ESSA has improved after the COVID crisis and it is possible to calculate this indicator.

At Stockholm the annual value in 2022 has not changed with respect to previous year but it is higher than before the pandemic (ESSA: 2019: 0.09 min/dep; 2021: 0.13 min/dep; 2022: 0.13 min/dep)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Sweden increased in 2022 (ESSA: 2020: 8.34 min/dep.; 2021: 11.48 min/dep.; 2022: 15.14 min/dep.), with the highest delays observed in June-July and December.

According to the Swedish monitoring report: *It should be noted that performance for 2020/2021 was affected of the very low traffic levels.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|------------------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|-------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Stockholm/Arlanda-ESSA | 0 | 0 | 0.09 | | | 98.2% | 97.9% | 97.8% | | | n/a | 0.13 | 0.13 | | | 8.34 | 11.48 | 15.14 | | |

SWEDEN: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|---|-----------------|-----------------|---|---------------|---------------|---------------|
| · Sweden ECZ represents 3.7% of the SES en route ANS actual costs in 2022 | | | | | | |
| · National currency: SEK Exchange rates (1 EUR=) 2017: 9.63311 SEK 2022: 10.6237 SEK | | | | | | |
| · Performance Plan: RP3 draft performance plan dated 13 July 2022 and found consistent as per Commission Decision (EU) 2022/2423 of 5 December 2022 The final version of the plan was adopted and published by Sweden in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Sweden: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal SEK) | 2 690 169 529 | 2 145 575 013 | 4 835 744 542 | 2 309 764 674 | 2 358 551 456 | 2 234 106 189 |
| Inflation % | 0.7% | 1.5% | | 4.8% | 2.2% | 1.7% |
| Inflation index (100 in 2017) | 104.5 | 106.0 | | 112.4 | 114.9 | 116.9 |
| Real en route costs (SEK2017) | 2 593 079 553 | 2 048 853 289 | 4 641 932 842 | 2 110 148 089 | 2 114 368 392 | 1 978 523 470 |
| Total en route service units | 1 676 463 | 1 732 000 | 3 408 463 | 2 724 000 | 3 248 000 | 3 367 000 |
| Real en route DUC per service unit (SEK2017) | 1 546.76 | 1 182.94 | 1 361.88 | 774.65 | 650.98 | 587.62 |
| Real en route DUC per service unit (€2017) | 160.57 | 122.80 | 141.38 | 80.42 | 67.58 | 61.00 |
| Sweden: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal SEK) | 2 690 169 529 | 2 088 780 547 | 4 778 950 076 | 2 377 368 452 | | |
| Inflation % | 0.7% | 2.7% | | 8.1% | | |
| Inflation index (100 in 2017) | 104.5 | 107.3 | | 116.0 | | |
| Real en route costs (SEK2017) | 2 593 079 553 | 1 976 031 466 | 4 569 111 019 | 2 133 906 228 | | |
| Total en route service units | 1 676 463 | 1 794 889 | 3 471 353 | 2 471 898 | | |
| Real en route AUC per service unit (SEK2017) | 1 546.76 | 1 100.92 | 1 316.23 | 863.27 | | |
| Real en route AUC per service unit (€2017) | 160.57 | 114.29 | 136.64 | 89.61 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal SEK) | in value | 0 | -56 794 466 | -56 794 466 | 67 603 777 | |
| | in % | - | -2.6% | -1.2% | +2.9% | |
| Inflation % | in p.p. | 0.0 p.p. | 1.2 p.p. | | 3.3 p.p. | |
| Inflation index (100 in 2017) | in p.p. | 0.0 p.p. | 1.3 p.p. | | 3.5 p.p. | |
| Real en route costs (SEK2017) | in value | 0 | -72 821 823 | -72 821 823 | 23 758 139 | |
| | in % | - | -3.6% | -1.6% | +1.1% | |
| Total en route service units | in value | 0 | 62 889 | 62 889 | -252 102 | |
| | in % | - | +3.6% | +1.8% | -9.3% | |
| Real en route unit cost per service unit (SEK2017) | in value | 0.00 | -82.02 | -45.65 | 88.62 | |
| | in % | - | -6.9% | -3.4% | +11.4% | |
| Real en route unit cost per service unit (€2017) | in value | 0.00 | -8.51 | -4.74 | 9.20 | |
| | in % | - | -6.9% | -3.4% | +11.4% | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | <p>2022 actual vs. planned TSUs</p> <p>Threshold -10% Threshold +10%</p> <p>-9.3%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>In 2022, the en route AUC was +11.4% (or +88.62 SEK2017, +9.2 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-9.3%) and higher than planned en route costs in real terms (+1.1%, or +23.8 MSEK2017, +2.5 M€2017). It should be noted that actual inflation index in 2022 was +3.5 p.p. higher than planned.</p> | | | | | | |
| En route service units | | | <p>Costs by entity at ECZ level (M€2017):</p> <p>Main ANSP +1.2%</p> <p>Other ANSP(s) -11.5%</p> <p>METSP(s) -3.2%</p> <p>NSA/EUROCONTROL +13.1%</p> <p>Total CZ +1.1%</p> | | | |
| <p>The difference between actual and planned TSUs (-9.3%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSPs and the airspace users, with the main ANSP (LFV) bearing a loss of -6.5 M€2017.</p> | | | | | | |
| En route costs by entity | | | | | | |
| <p>Actual real en route costs are +1.1% (+2.5 M€2017) higher than planned. This results from the combination of higher costs for the NSA/EUROCONTROL (+13.1%, or +3.5 M€2017) and the main ANSP, LFV (+1.2%, or +1.9 M€2017), and lower costs for the other ANSPs (ACR, ARV and SDATS, -11.5%, or -2.7 M€2017) and MET service provider (-3.2%, or -0.2 M€2017).</p> | | | | | | |
| En route costs for the main ANSP (LFV) at charging zone level | | | | | | |
| <p>Higher than planned en route costs in real terms for LFV in 2022 (+1.2%, or +1.9 M€2017) result from the combination of:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-6.1%), driven by lower than planned pension costs. In addition, "staff costs were reduced by the revenues for staff participating in projects or other things not financed by en route charges"; - Higher other operating costs (+3.1%), mainly due to higher energy prices and maintenance costs; - Significantly higher depreciation (+18.0%), resulting mainly from (i) a write down of Ett System Topsky, and (ii) RTS Swedavia, which had higher total investment and shorter depreciation time; and, - Significantly higher cost of capital (+62.0%), "as an effect of the high inflation that affects the valuation of the pension debt (that is used for financing instead of loans)." | | | <p>Costs by nature for main ANSP (M€2017):</p> <p>Staff costs -6.1%</p> <p>Other operating costs +3.1%</p> <p>Depreciation +18.0%</p> <p>Cost of capital +62.0%</p> <p>Exceptional costs</p> <p>VFR exempted flights</p> <p>Total Main ANSP +1.2%</p> | | | |

SWEDEN: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

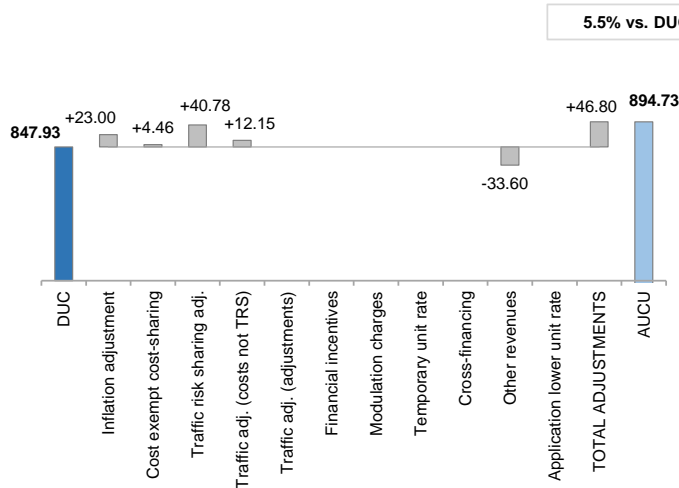
5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level

Sweden 2022 DUC vs. Actual Unit Cost for users in national currency in nominal terms
- SEK



| Components of the AUCU | SEK/SU | €/SU |
|---------------------------------|---------------|--------------|
| Initial DUC charged | 715.21 | 67.32 |
| DUC to be charged retroactively | 132.72 | 12.49 |
| DUC | 847.93 | 79.82 |
| Inflation adjustment | 23.00 | 2.16 |
| Cost exempt from cost-sharing | 4.46 | 0.42 |
| Traffic risk sharing adjustment | 40.78 | 3.84 |
| Traffic adj. (costs not TRS) | 12.15 | 1.14 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -33.60 | -3.16 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | 46.80 | 4.40 |
| AUCU | 894.73 | 84.22 |
| AUCU vs. DUC | +5.5% | +5.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

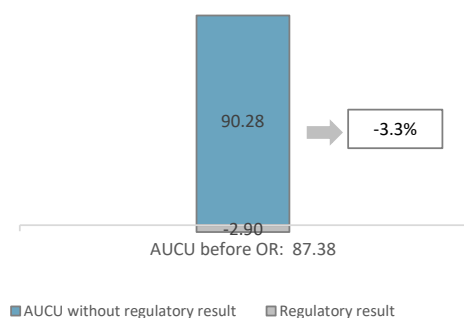
7. En route costs exempt from cost sharing

| by item | SEK '000 | € '000 | SEK/SU | €/SU |
|--|---------------|--------------|-------------|-------------|
| New and existing investments | 6 655 | 626 | 2.69 | 0.25 |
| Competent authorities and qualified entities costs | 3 031 | 285 | 1.23 | 0.12 |
| Eurocontrol costs | 30 204 | 2 843 | 12.22 | 1.15 |
| Pension costs | -29 334 | -2 761 | -11.87 | -1.12 |
| Interest on loans | 477 | 45 | 0.19 | 0.02 |
| Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | 11 033 | 1 039 | 4.46 | 0.42 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



| ANSP(S) | SEK '000 | € '000 | SEK/SU | €/SU |
|-----------------------------------|------------------|----------------|---------------|--------------|
| LFV | -99 427 | -9 359 | -40.22 | -3.79 |
| ACR | 26 762 | 2 519 | 10.83 | 1.02 |
| ARV | 914 | 86 | 0.37 | 0.03 |
| SDATS | -6 524 | -614 | -2.64 | -0.25 |
| METSP(s) | SEK '000 | € '000 | SEK/SU | €/SU |
| Sweden MET | 2 079 | 196 | 0.84 | 0.08 |
| Total charging zone | -76 196 | -7 172 | -30.83 | -2.90 |
| Actual cost for users*** | 2 294 741 | 216 002 | 928.33 | 87.38 |
| Regulatory result (% AUCU) | -3.3% | -3.3% | -3.3% | -3.3% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (894.73 SEK or 84.22 €) is +5.5% higher than the nominal DUC (847.93 SEK or 79.82 €). The difference between these two figures (+46.80 SEK/SU or +4.40 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+23.00 SEK/SU or +2.16 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (+4.46 SEK/SU or +0.42 €/SU);
- the addition of the traffic risk sharing adjustments (+40.78 SEK/SU or +3.84 €/SU);
- the addition of the traffic adjustment (+12.15 SEK/SU or +1.14 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-33.60 SEK/SU or -3.16 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -3.3%.

SWEDEN: En route main ANSP (LFV)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: The analysis presented for LFV is affected by two factors:

a) LFV reports a financing of asset base at the level of some 77% of debt in 2022, corresponding to its pension liabilities, which are remunerated at the inflation rate.

b) Information reported in the en route reporting tables of LFV includes also the costs for CNS infrastructure owned by the airport operators.

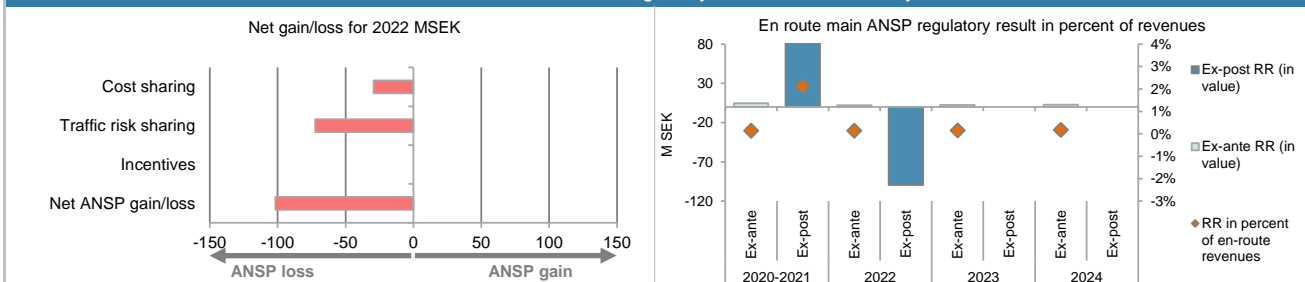
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|-----------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 22 181 | -57 225 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 16 997 | 47 933 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -32 282 | -20 057 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 6 895 | -29 349 | | |
| Traffic risk sharing (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.8% | -9.3% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 3 774 443 | 1 732 115 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 69 642 | -72 341 | | |
| Incentives (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (SEK '000) | 76 537 | -101 690 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | 7 550 | -9 572 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LFV planned regulatory result (SEK '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|------------------|------------------|------------------|------------------|------------------|------------------|
| Total asset base | 3 040 952 | 3 165 939 | 6 206 891 | 2 442 562 | 2 499 281 | 2 491 362 |
| Proportion of financing through equity (in %) | 18% | 16% | 17% | 22% | 19% | 15% |
| RoE pre-tax rate (in %) | 0.5% | 0.5% | 0.5% | 0.4% | 0.5% | 0.8% |
| RoE (in value) | 2 440 | 2 431 | 4 871 | 2 211 | 2 479 | 2 909 |
| Ex-ante regulatory result (+/-) for the en route charging zone (see Note 1) | 2 440 | 2 431 | 4 871 | 2 211 | 2 479 | 2 909 |
| Revenue for the en route charging zone | 2 197 449 | 1 616 030 | 3 813 479 | 1 750 189 | 1 779 074 | 1 672 504 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.1% | 0.2% | 0.1% | 0.1% | 0.1% | 0.2% |
| Ex-ante RoE pre-tax rate (in %) | 0.5% | 0.5% | 0.5% | 0.4% | 0.5% | 0.8% |
| LFV actual regulatory result (SEK '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 3 040 952 | 2 432 702 | 5 473 653 | 2 372 384 | | |
| Proportion of financing through equity (in %) | 18% | 22% | 20% | 23% | | |
| RoE pre-tax rate (in %) | 0.5% | 0.5% | 0.5% | 0.4% | | |
| RoE (in value) | 2 440 | 2 615 | 5 055 | 2 263 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | 76 537 | 76 537 | -101 690 | | |
| Ex-post regulatory result (+/-) for the en route charging zone (see Note 1) | 2 440 | 79 152 | 81 592 | -99 427 | | |
| Revenue for the en route charging zone | 2 197 449 | 1 670 387 | 3 867 836 | 1 705 724 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.1% | 4.7% | 2.1% | -5.8% | | |
| Ex-post RoE pre-tax rate (in %) | 0.5% | 14.9% | 7.6% | -18.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



LFV net gain on activity in the Sweden en route charging zone in the year 2022

LFV reported a net loss of -101.7 MSEK, as a combination of a loss of -29.3 MSEK arising from the cost sharing mechanism and a loss of -72.3 MSEK arising from the traffic risk sharing mechanism.

LFV overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net loss from the en route activity mentioned above (-101.7 MSEK) and the actual RoE (+2.3 MSEK) corresponds to a loss of -99.4 MSEK (-5.8% of the en route revenues). The resulting ex-post rate of return on equity is -18.4%.

SWEDEN: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|---|---------|---------|------------|---------|---------|---------|
| ACR planned regulatory result (SEK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 520 | 1 737 | 2 257 | 2 532 | 2 276 | 1 691 |
| Revenue for the en route charging zone | 132 885 | 158 958 | 291 843 | 182 034 | 194 984 | 186 023 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.4% | 1.1% | 0.8% | 1.4% | 1.2% | 0.9% |
| Ex-ante RoE pre-tax rate (in %) | 6.0% | 13.5% | 10.5% | 18.2% | 14.3% | 10.3% |
| ACR actual regulatory result (SEK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 520 | 28 777 | 29 297 | 26 762 | | |
| Revenue for the en route charging zone | 132 885 | 165 561 | 298 446 | 179 073 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.4% | 17.4% | 9.8% | 14.9% | | |
| Ex-post RoE pre-tax rate (in %) | 6.0% | 231.2% | 138.4% | 181.4% | | |
| ARV planned regulatory result (SEK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 5 918 | 6 450 | 12 368 | 6 958 | 7 056 | 6 499 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| ARV actual regulatory result (SEK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 675 | 675 | 914 | | |
| Revenue for the en route charging zone | 5 918 | 6 751 | 12 669 | 6 897 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 10.0% | 5.3% | 13.2% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 113.4% | 46.6% | 157.0% | | |
| SDATS planned regulatory result (SEK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 697 | 697 | 1 098 | 927 | 451 |
| Revenue for the en route charging zone | 53 782 | 66 772 | 120 553 | 65 135 | 66 696 | 57 679 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 1.0% | 0.6% | 1.7% | 1.4% | 0.8% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 2.2% | 1.1% | 3.8% | 3.9% | 2.8% |
| SDATS actual regulatory result (SEK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 574 | 574 | -6 524 | | |
| Revenue for the en route charging zone | 53 782 | 66 783 | 120 565 | 62 493 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 0.9% | 0.5% | -10.4% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 1.7% | 0.9% | -16.9% | | |
| Sweden MET planned regulatory result (SEK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 48 904 | 49 900 | 98 804 | 51 264 | 52 708 | 52 991 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Sweden MET actual regulatory result (SEK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | -761 | -761 | 2 079 | | |
| Revenue for the en route charging zone | 48 904 | 50 292 | 99 196 | 53 134 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | -1.5% | -0.8% | 3.9% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs | | | | | | |
| Total other ANSPs planned regulatory result (SEK '000) | | | | | | |
| | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 520 | 2 433 | 2 954 | 3 631 | 3 203 | 2 142 |
| Revenue for the en route charging zone | 241 488 | 282 079 | 523 568 | 305 391 | 321 444 | 303 192 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.2% | 0.9% | 0.6% | 1.2% | 1.0% | 0.7% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Total other ANSPs actual regulatory result (SEK '000) | | | | | | |
| | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 520 | 29 265 | 29 786 | 23 231 | | |
| Revenue for the en route charging zone | 241 488 | 289 387 | 530 875 | 301 597 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.2% | 10.1% | 5.6% | 7.7% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSPs overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the en route charging zone for Sweden (ACR, ARV, SDATS, Sweden MET) corresponds to 7.7% of the en route revenues. The RoE cannot be calculated for the MET service provider, as its assets are fully financed through loans. | | | | | | |

SWEDEN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|-----------------|---|-----------------|-----------------|-----------------|
| <ul style="list-style-type: none"> Sweden TCZ represents 1.5% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 1 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 1 National currency: SEK Exchange rates (1 EUR=) 2017: 9.63311 SEK 2022: 10.6237 SEK Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Sweden: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal SEK) | 252 628 250 | 189 276 363 | 441 904 612 | 200 172 902 | 205 638 071 | 208 304 348 |
| Inflation % | 0.7% | 1.5% | | 4.8% | 2.2% | 1.7% |
| Inflation index (100 in 2017) | 104.5 | 106.0 | | 112.4 | 114.9 | 116.9 |
| Real terminal costs (SEK2017) | 242 281 335 | 178 987 820 | 421 269 155 | 179 131 197 | 180 624 386 | 180 161 203 |
| Total terminal service units | 54 147 | 52 000 | 106 147 | 104 000 | 137 000 | 142 000 |
| Real terminal DUC per service unit (SEK2017) | 4 474.50 | 3 442.07 | 3 968.73 | 1 722.42 | 1 318.43 | 1 268.74 |
| Real terminal DUC per service unit (€2017) | 464.49 | 357.32 | 411.99 | 178.80 | 136.86 | 131.71 |
| Sweden: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal SEK) | 252 628 250 | 189 671 860 | 442 300 110 | 198 125 364 | | |
| Inflation % | 0.7% | 2.7% | | 8.1% | | |
| Inflation index (100 in 2017) | 104.5 | 107.3 | | 116.0 | | |
| Real terminal costs (SEK2017) | 242 281 335 | 177 397 868 | 419 679 203 | 172 268 313 | | |
| Total terminal service units | 54 147 | 56 124 | 110 271 | 107 570 | | |
| Real terminal AUC per service unit (SEK2017) | 4 474.50 | 3 160.80 | 3 805.87 | 1 601.45 | | |
| Real terminal AUC per service unit (€2017) | 464.49 | 328.12 | 395.08 | 166.24 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal SEK) | in value 0 | 395 497 | 395 497 | -2 047 539 | | |
| | in % - | +0.2% | +0.1% | -1.0% | | |
| Inflation % | in p.p. 0.0 p.p. | 1.2 p.p. | | 3.3 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 1.3 p.p. | | 3.5 p.p. | | |
| Real terminal costs (SEK2017) | in value 0 | -1 589 952 | -1 589 952 | -6 862 884 | | |
| | in % - | -0.9% | -0.4% | -3.8% | | |
| Total terminal service units | in value 0 | 4 124 | 4 124 | 3 570 | | |
| | in % - | +7.9% | +3.9% | +3.4% | | |
| Real terminal unit cost per service unit (SEK2017) | in value 0.00 | -281.27 | -162.86 | -120.96 | | |
| | in % - | -8.2% | -4.1% | -7.0% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -29.20 | -16.91 | -12.56 | | |
| | in % - | -8.2% | -4.1% | -7.0% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC</p> <p>In 2022, the terminal AUC was -7.0% (or -120.96 SEK2017, -12.56 €2017) lower than the planned DUC. This results from the combination of lower than planned terminal costs in real terms (-3.8%, or -6.9 MSEK2017, -0.7 M€2017) and higher than planned TNSUs (+3.4%). It should be noted that actual inflation index in 2022 was +3.5 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> <p>+3.4%</p> | | | |
| <p>Terminal service units</p> <p>The difference between actual and planned TNSUs (+3.4%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSPs and the airspace users, with the main ANSP (LFV) retaining an amount of +0.3 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal costs by entity</p> <p>Actual real terminal costs are -3.8% (-0.7 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LFV (-5.2%, or -0.7 M€2017), the other ANSP (Swedavia, -0.4%, or -0.02 M€2017) and the MET service provider (-3.6%, or -0.01 M€2017). The NSA costs are slightly higher than planned (+0.3%).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs for the main ANSP (LFV) at charging zone level</p> <p>Lower than planned terminal costs in real terms for LFV in 2022 (-5.2%, or -0.7 M€2017) result from the combination of:</p> <ul style="list-style-type: none"> - Significantly lower staff costs (-7.2%), driven by lower than planned pension costs. In addition, "staff costs were reduced with the revenues for staff participating in projects"; - Slightly lower other operating costs (-1.4%) mainly due to the inflation index impact (+3.5 p.p.) since in nominal terms other operating costs were slightly higher than planned (+1.7%); and, - Significantly higher cost of capital (+167.8%) "as an effect of the high inflation that affects the valuation of the pension debt (that is used for financing instead of loans)." | | | | | | |

SWEDEN: Terminal charging zone

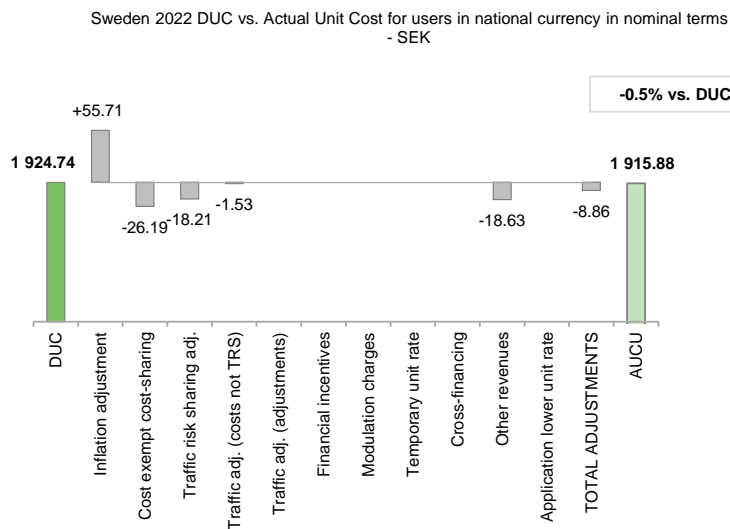
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | SEK/SU | €/SU |
|---------------------------------|-----------------|---------------|
| Initial DUC charged | 1 603.82 | 150.97 |
| DUC to be charged retroactively | 320.92 | 30.21 |
| DUC | 1 924.74 | 181.17 |
| Inflation adjustment | 55.71 | 5.24 |
| Cost exempt from cost-sharing | -26.19 | -2.47 |
| Traffic risk sharing adjustment | -18.21 | -1.71 |
| Traffic adj. (costs not TRS) | -1.53 | -0.14 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | -18.63 | -1.75 |
| Application of lower unit rate | 0.00 | 0.00 |
| Total adjustments | -8.86 | -0.83 |
| AUCU | 1 915.88 | 180.34 |
| AUCU vs. DUC | -0.5% | -0.5% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

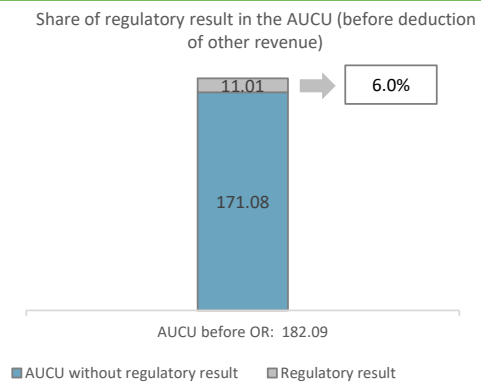
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | SEK '000 | € '000 | SEK/SU | €/SU |
|---|--|---------------|-------------|---------------|--------------|
| by item | New and existing investments | -947 | -89 | -8.80 | -0.83 |
| | Competent authorities and qualified entities costs | 1 | 0 | 0.01 | 0.00 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | -1 871 | -176 | -17.40 | -1.64 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -2 817 | -265 | -26.19 | -2.47 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | SEK '000 | € '000 | SEK/SU | €/SU |
|-----------------------------------|----------------|---------------|-----------------|---------------|
| LFV | 9 293 | 875 | 86.39 | 8.13 |
| Swedavia | 3 334 | 314 | 30.99 | 2.92 |
| METSP(s) | SEK '000 | € '000 | SEK/SU | €/SU |
| Sweden Arlanda MET | -41 | -4 | -0.38 | -0.04 |
| Total charging zone | 12 586 | 1 185 | 117.00 | 11.01 |
| Actual cost for users*** | 208 096 | 19 588 | 1 934.51 | 182.09 |
| Regulatory result (% AUCU) | 6.0% | 6.0% | 6.0% | 6.0% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (1 915.88 SEK or 180.34 €) is -0.5% lower than the nominal DUC (1 924.74 SEK or 181.17 €). The difference between these two figures (-8.86 SEK/SU or -0.83 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+55.71 SEK/SU or +5.24 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-26.19 SEK/SU or -2.47 €/SU);
- the deduction of the traffic risk sharing adjustments (-18.21 SEK/SU or -1.71 €/SU);
- the deduction of the traffic adjustment (-1.53 SEK/SU or -0.14 €/SU) for the costs not subject to traffic risk sharing; and,
- the deduction of the other revenues (-18.63 SEK/SU or -1.75 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 6.0%.

SWEDEN: Terminal main ANSP (LFV)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: LFV reports a financing of asset base at the level of some 78% of debt in 2022, corresponding to its pension liabilities, which are remunerated at the inflation rate.

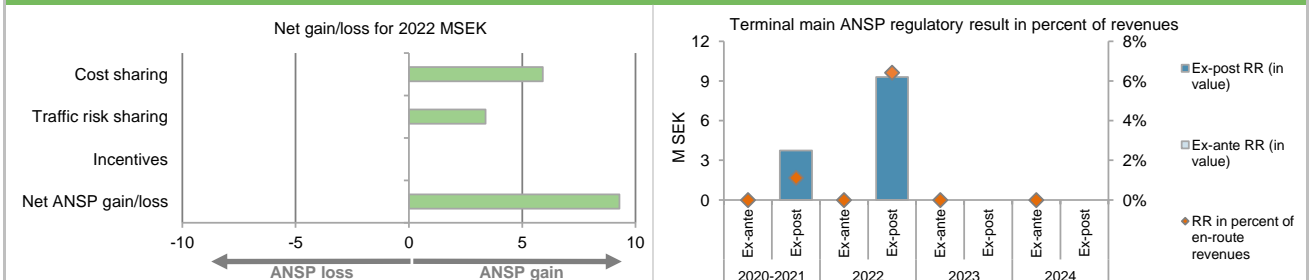
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|--------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -4 588 | 3 417 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 1 562 | 4 357 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -1 650 | -1 865 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -4 676 | 5 910 | | |
| Traffic risk sharing (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 3.9% | 3.4% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 327 912 | 139 239 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 8 413 | 3 383 | | |
| Incentives (SEK '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (SEK '000) | 3 737 | 9 293 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 369 | 875 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| LFV planned regulatory result (SEK '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 98 951 | 86 582 | 185 534 | 74 213 | 61 845 | 49 476 |
| Proportion of financing through equity (in %) | 17% | 15% | 16% | 10% | 7% | 4% |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RoE (in value) | 0 | 0 | 0 | 0 | 0 | 0 |
| Ex-ante regulatory result (+/-) for the terminal charging zone (see Note 1) | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 194 939 | 132 972 | 327 912 | 139 239 | 141 303 | 143 837 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| LFV actual regulatory result (SEK '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 98 951 | 92 767 | 191 718 | 74 213 | | |
| Proportion of financing through equity (in %) | 17% | 21% | 19% | 22% | | |
| RoE pre-tax rate (in %) | 0.0% | 0.0% | 0.0% | 0.0% | | |
| RoE (in value) | 0 | 0 | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 3 737 | 3 737 | 9 293 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 1) | 0 | 3 737 | 3 737 | 9 293 | | |
| Revenue for the terminal charging zone | 194 939 | 141 297 | 336 236 | 145 115 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 2.6% | 1.1% | 6.4% | | |
| Ex-post RoE pre-tax rate (in %) | 0.0% | 19.1% | 10.3% | 56.3% | | |

13. Focus on main ANSP regulatory result on terminal activity



LFV net gain on activity in the Sweden terminal charging zone in the year 2022

LFV reported a net gain of +9.3 MSEK, as a combination of a gain of +5.9 MSEK arising from the cost sharing mechanism and a gain of +3.4 MSEK arising from the traffic risk sharing mechanism.

LFV overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR is equal to the net gain from the terminal activity mentioned above and amounts to +9.3 MSEK (6.4% of the terminal revenues). The resulting ex-post rate of return on equity is 56.3%, which is significantly higher than the 0.0% RoE planned in the PP.

SWEDEN: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|--------|--------|------------|--------|--------|--------|
| Swedavia planned regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 2 378 | 2 686 | 5 064 | 3 314 | 3 741 | 4 185 |
| Revenue for the terminal charging zone | 52 847 | 51 689 | 104 536 | 56 130 | 59 559 | 59 623 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.5% | 5.2% | 4.8% | 5.9% | 6.3% | 7.0% |
| Ex-ante RoE pre-tax rate (in %) | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% |
| Swedavia actual regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 2 378 | 9 976 | 12 354 | 3 334 | | |
| Revenue for the terminal charging zone | 52 847 | 55 550 | 108 398 | 58 303 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.5% | 18.0% | 11.4% | 5.7% | | |
| Ex-post RoE pre-tax rate (in %) | 9.0% | 35.3% | 22.6% | 11.9% | | |
| Sweden Arlanda MET planned regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 65 | 127 | 192 | 148 | 128 | 108 |
| Revenue for the terminal charging zone | 4 481 | 4 182 | 8 663 | 4 363 | 4 326 | 4 384 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 3.0% | 2.2% | 3.4% | 3.0% | 2.5% |
| Ex-ante RoE pre-tax rate (in %) | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% |
| Sweden Arlanda MET actual regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 65 | -10 | 55 | -41 | | |
| Revenue for the terminal charging zone | 4 481 | 3 478 | 7 958 | 4 236 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 1.4% | -0.3% | 0.7% | -1.0% | | |
| Ex-post RoE pre-tax rate (in %) | 9.0% | -1.2% | 3.5% | -4.7% | | |
| Total other ANSPs planned regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 2 443 | 2 814 | 5 256 | 3 462 | 3 869 | 4 294 |
| Revenue for the terminal charging zone | 57 328 | 55 871 | 113 199 | 60 493 | 63 885 | 64 007 |
| Ex-ante regulatory result (+/-) in percent of revenues | 4.3% | 5.0% | 4.6% | 5.7% | 6.1% | 6.7% |
| Ex-ante RoE pre-tax rate (in %) | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% | 9.0% |
| Total other ANSPs actual regulatory result (SEK '000) | | | | | | |
| | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 2 443 | 9 966 | 12 409 | 3 293 | | |
| Revenue for the terminal charging zone | 57 328 | 59 028 | 116 356 | 62 539 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 4.3% | 16.9% | 10.7% | 5.3% | | |
| Ex-post RoE pre-tax rate (in %) | 9.0% | 34.3% | 22.1% | 11.4% | | |
| Total other ANSPs overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSPs in the terminal charging zone for Sweden (Swedavia, Sweden Arlanda MET) corresponds to 5.3% of the terminal revenues. The ex-post RoE 11.4% is higher than planned (9.0%). | | | | | | |

SWEDEN: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | |
|---|--------------|------------------|---------------|--|------------------|---------------|-------------|
| Charging zones concerned: | | | | | | | |
| En route charging zone 1: Sweden | | | | | | | |
| Terminal charging zone 1: Sweden | | | | | | | |
| Sweden: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Real en route costs (€2017) | | 269 184 049 | 212 688 663 | 481 872 712 | 219 051 593 | 219 489 697 | 205 387 821 |
| Real terminal costs (€2017) | | 25 150 895 | 18 580 481 | 43 731 376 | 18 595 365 | 18 750 371 | 18 702 289 |
| Real gate-to-gate costs (€2017) | | 294 334 944 | 231 269 144 | 525 604 088 | 237 646 958 | 238 240 068 | 224 090 109 |
| En route share (%) | | 91.5% | 92.0% | 91.7% | 92.2% | 92.1% | 91.7% |
| Sweden: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Real en route costs (€2017) | | 269 184 049 | 205 129 129 | 474 313 178 | 221 517 893 | | |
| Real terminal costs (€2017) | | 25 150 895 | 18 415 431 | 43 566 325 | 17 882 938 | | |
| Real gate-to-gate costs (€2017) | | 294 334 944 | 223 544 560 | 517 879 503 | 239 400 831 | | |
| En route share (%) | | 91.5% | 91.8% | 91.6% | 92.5% | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Real gate-to-gate costs (€2017) | | | | | | | |
| | in value | 0 | -7 724 585 | -7 724 585 | 1 753 873 | | |
| | in % | 0.0% | -3.3% | -1.5% | 0.7% | | |
| En route share | | | | | | | |
| | in p.p. | 0.0 p.p. | -0.2 p.p. | -0.1 p.p. | 0.4 p.p. | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | |
| | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are +0.7% (+1.8 M€2017) higher than planned, as en route costs are higher than planned by +2.5 M€2017, while terminal costs are lower than planned by -0.7 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (92.5%) is slightly higher than planned in the PP for 2022 (92.2%).</p> | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | |
| In SEK '000 | | | | | | | |
| | | Ex-ante | | | Ex-post | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| LFV | 2 211 | 1 889 428 | 0.1% | -90 134 | 1 850 839 | -4.9% | |
| ACR | 2 532 | 182 034 | 1.4% | 26 762 | 179 073 | 14.9% | |
| ARV | 0 | 6 958 | 0.0% | 914 | 6 897 | 13.2% | |
| SDATS | 1 098 | 65 135 | 1.7% | -6 524 | 62 493 | -10.4% | |
| Swedavia | 3 314 | 56 130 | 5.9% | 3 334 | 58 303 | 5.7% | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | |
| Sweden MET | 0 | 51 264 | 0.0% | 2 079 | 53 134 | 3.9% | |
| Sweden Arlanda MET | 148 | 4 363 | 3.4% | -41 | 4 236 | -1.0% | |
| Total | 9 304 | 2 255 311 | 0.4% | -63 611 | 2 214 974 | -2.9% | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Sweden covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022, corresponds to a loss of -63.6 MSEK (-76.2 MSEK for en route and +12.6 MSEK for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to -2.9% of gate-to-gate ANS revenues.</p> <p>The return planned for the year was 0.4% of gate-to-gate revenues.</p> | | | | <p>Sweden gate-to-gate 2022 regulatory result in % of revenues</p> | | | |

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Annual Monitoring Report 2022

Local level view

Switzerland

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SWITZERLAND

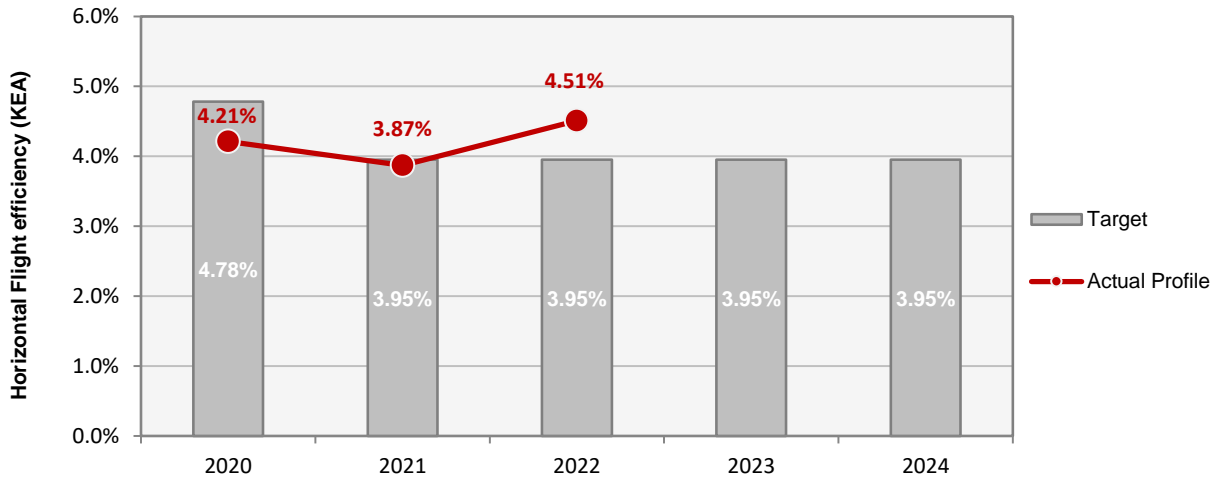
Monitoring of SAFETY for 2022

| Effectiveness of Safety Management | | | | | | |
|---|-------|----------------|------------------------------|------------------------|------------------|------------------|
| | Score | Safety Culture | Safety Policy and Objectives | Safety Risk Management | Safety Assurance | Safety Promotion |
| Skyguide | 89 | C | C | C | C | C |
| <p>Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.</p> | | | | | | |
| Observations | | | | | | |
| <p>Maturity levels have been maintained compared with 2021. Four out of five EoSM components of the ANSP meet the RP3 target level. Only the component "Safety Risk Management" is below 2024 target level, requiring improvement of three questions during RP3.</p> | | | | | | |

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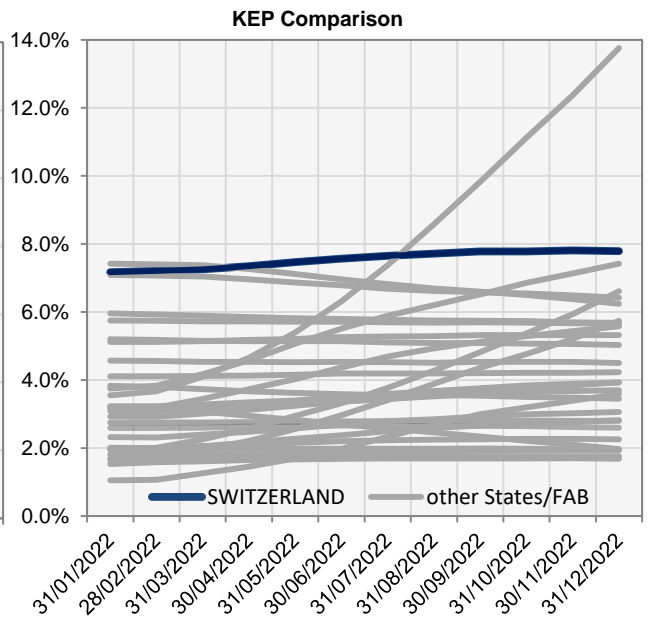
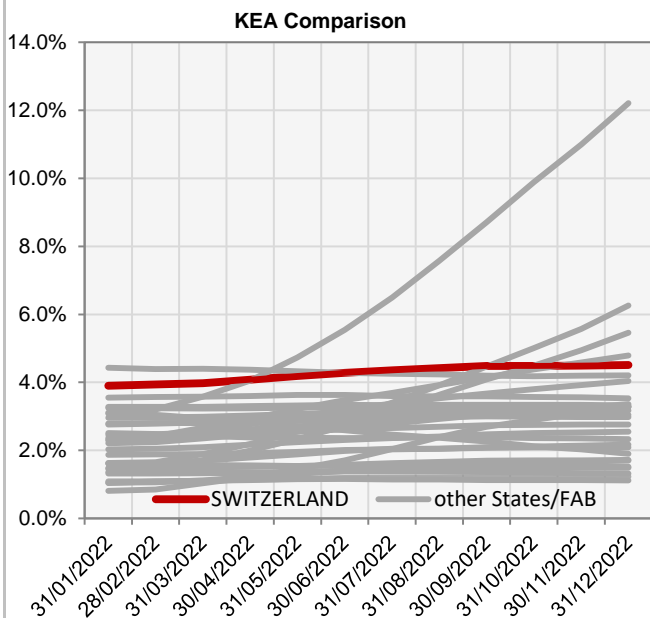
ENVIRONMENT - Horizontal flight efficiency

| KEA | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Target | 4.78% | 3.95% | 3.95% | 3.95% | 3.95% |
| Actual performance | 4.21% | 3.87% | 4.51% | | |



End of month indicators evolution in 2022

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| KEA | 3.90% | 3.94% | 3.98% | 4.08% | 4.19% | 4.28% | 4.35% | 4.42% | 4.48% | 4.48% | 4.49% | 4.51% |
| KEP | 7.17% | 7.21% | 7.25% | 7.35% | 7.47% | 7.57% | 7.65% | 7.72% | 7.78% | 7.78% | 7.81% | 7.79% |
| KES | 6.77% | 6.81% | 6.85% | 6.94% | 7.06% | 7.14% | 7.20% | 7.27% | 7.32% | 7.32% | 7.34% | 7.32% |

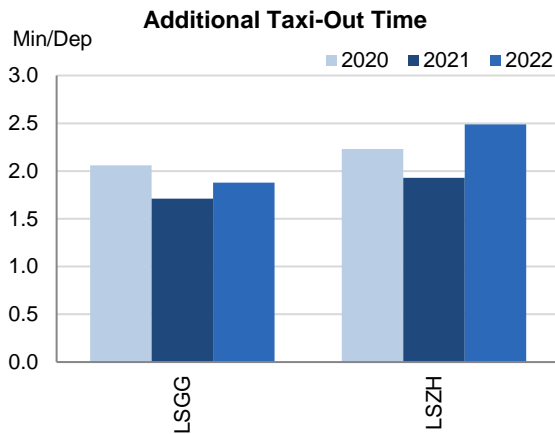


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Switzerland identifies its two main airports Zurich (LSZH) and Geneva (LSGG) as subject to RP3 monitoring. Both airports have a fully implemented data flow that allows the proper monitoring of environmental indicators. Traffic in 2022 at these two airports was still 18% lower than in 2019, but recovered 69% with respect to 2021. Additional times have deteriorated at both Swiss airports under monitoring, however they are still below the 2019 values. The shares of CDO flights reduced slightly for the monitored Swiss airports in 2022 and are still below the overall RP3 value.

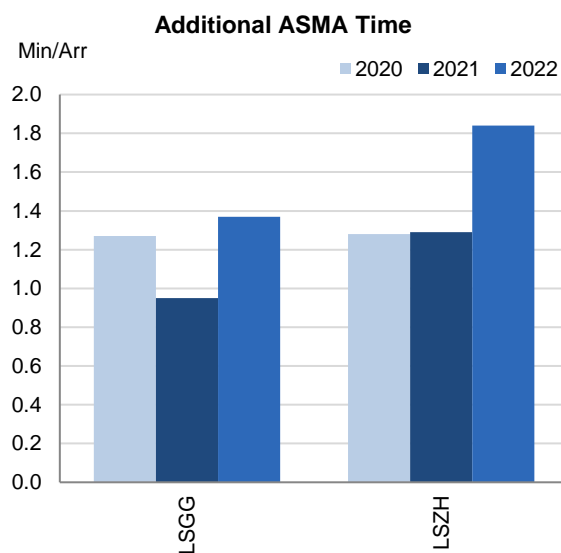
2. Additional Taxi-Out Time



Additional taxi-out times at both Swiss airports increased in 2022 but remained under the SES average of 2.52 min/dep.

According to the Swiss monitoring report: *Ground efficiency suffered from traffic increased during summer 2022. Performance remains however above the one of 2020 in GVA. Further improvements will stem from CP1 Airport Operation Plan deployment. It should be noted that taxi-out time depends on weather conditions, especially when de-icing is required.*

3. Additional ASMA Time



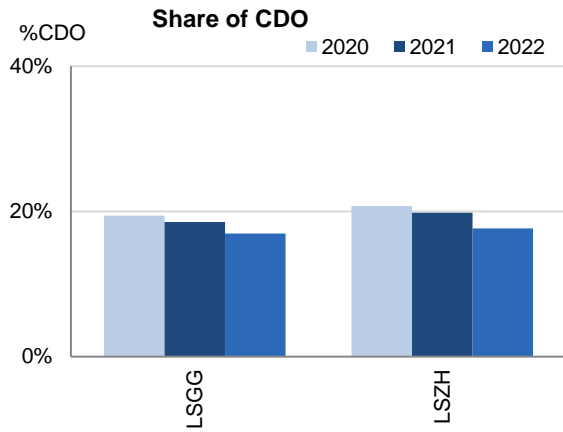
Additional times in the terminal area significantly increased at both airports exceeding the SES average for 2022 of 1.06 min/arr.

Zurich (LSZH; 2019: 2.91 min/arr.; 2020: 1.28 min/arr.; 2021: 1.29 min/arr.; 2022: 1.84 min/arr) resulted in the third highest additional time among the SES monitored airports in 2022, even if its performance was still better than in 2019.

According to the Swiss monitoring report:

Efficiency within the last 40NM (additional time in descent flight phase) around LSZH decreased in 2022 due to traffic increase. XMAN and Leading Optimised Runway Delivery (LORD) projects should help improving performance. ECTL is developing its indicator to differentiate structural and operational inefficiencies. On this basis, an analysis was performed by ECTL in 2022 for LSZH and discussed with operational experts.

4. Share of arrivals applying CDO



The shares of CDO flights have decreased by 1.6 and 2.1 percentage points for respectively Geneva and Zurich. Both airports have shares of CDO flights which are below the overall RP3 value in 2022 (29.0%).

The two airports have a similar monthly evolution of the share of CDO flights with lower monthly values from April to September.

According to the Swiss monitoring report: *Vertical flight efficiency from Top of Descent decreased in 2022 due to traffic increase. CDOs can be flown only when traffic is reduced.*

Trials were performed with Swiss in 2020 that could only be debriefed in 2022. They show interesting room for improvement.

FABEC workshops were organized in 2021 and 2022 on Vertical Flight Efficiency bringing a lot of food for thoughts. Discussions with Swiss are on-going to optimize descent profile. - Skyguide was audited beginning of 2023 by CANSO for CCO/CDO practices in ZRH and GVA as part of its GreenATM accreditation. Room for improvement is identified and corrective actions will be taken.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Additional taxi-out time | | | | | Additional ASMA time | | | | | Share of arrivals applying CDO | | | | |
|--------------|--------------------------|------|------|------|------|----------------------|------|------|------|------|--------------------------------|------|------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Geneva-LSGG | 2.06 | 1.71 | 1.88 | | | 1.27 | 0.95 | 1.37 | | | 19% | 19% | 17% | | |
| Zurich-LSZH | 2.23 | 1.93 | 2.49 | | | 1.28 | 1.29 | 1.84 | | | 21% | 20% | 18% | | |

SWITZERLAND

ENVIRONMENT - Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).

Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.

As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:

At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.

At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.

At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.

Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc....) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework.

Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

PI#6 Effective use of reserved or segregated airspace - national level

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Switzerland | 92% | 90% | 92% | | |

PI#6 Effective use of reserved or segregated airspace (per ACC)

| Ratio PI#6 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Geneva | 92% | 91% | 92% | | |
| Zurich | 91% | 90% | 92% | | |

Initiatives implemented or planned to improve PI#6

Remark

The Rolling UUP and Procedure 3 were introduced in Switzerland on 01.01.2016.

Monitoring of effectiveness

Since introduction of Rolling UUP and Procedure 3 in 2016, the PI#6 ratio improved and remained high and stable over years implying more reliable flight planning possibilities by AUs across Swiss airspace.

Ongoing national civil-military initiatives

Additional improvements are foreseen at the mid/long term such as introduction of VPA, improved CDM-ATFCM, improved civ-mil ASM Tools, etc. that shall give even more direct routing options to the Airspace Users. In addition, CH NSA is in the process of defining specific national PIs and/or "Use cases" in order to better assess (and improve, if necessary) the effectiveness of national FUA processes.

PI#7 Rate of planning via available airspace structures - national level

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Switzerland | 78% | 81% | 81% | | |

PI#7 Rate of planning via available airspace structures (per ACC)

| Ratio PI#7 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Geneva | 86% | 86% | 85% | | |
| Zurich | 75% | 79% | 78% | | |

Initiatives implemented or planned to improve PI#7Remark

In the figures provided by Eurocontrol (PRISMIL) until 2021 (included), there was no way of knowing whether the flights that filed through the available RSA are indeed a subset of the flights that could have filed through the available RSA.

This correction is now available and has been computed retroactively for all years.

Ongoing national civil-military initiatives

Promoting a more proactive flight planning process (considering the last published airspace status) by the Airspace Users. Additional improvements are foreseen at the mid/long term such as introduction of VPA, improved CDM-ATFCM, improved civ-mil ASM Tools, etc. that shall give even more direct routing options to the Airspace Users.

Monitoring of effectiveness

Military mission planning remained stable at a high level over years implying more reliable flight planning by AUs across Swiss airspace. CH NSA is in the process of defining specific national PIs and/or "Use cases" in order to better assess (and improve, if necessary) the effectiveness of national FUA processes.

PI#8 Rate of using available airspace structures - national level

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-------------|------|------|------|------|------|
| Switzerland | 57% | 63% | 63% | | |

PI#8 Rate of using available airspace structures (per ACC)

| Ratio PI#8 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------|------|------|------|------|------|
| Geneva | 63% | 67% | 70% | | |
| Zurich | 54% | 61% | 59% | | |

Initiatives implemented or planned to improve PI#8

See remark PI#7 (same as above).

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CAPACITY - En-route

| Minutes of ATFM en-route delay | | | | | | |
|---|------|------|------|------|------|--|
| | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| National Target | 0.47 | 0.12 | 0.19 | 0.19 | 0.19 | The value for en route ATFM delay per flight presented here is subsequent to the NM post operations delay attribution process. |
| Actual performance | 0.04 | 0.05 | 0.21 | | | |
| NSA's assessment of capacity performance | | | | | | |
| <p>2022 en route capacity target set in the Swiss National performance plan was just not met for 2022 (total ATFM-Delay per flight : 0.21 min/fl., 0.02 min. above the target). The delay in 2022 was mainly caused by severe adverse weather conditions above the Alps, limited ATC capacity and to a lesser extent, staffing.</p> <p>High uncertainty on traffic recovery over medium term horizon (2-3 months), new traffic patterns and increased volatility had also an aggravating impact during the Summer period.</p> <p>In 2022, Skyguide just missed its total en-route ATFM delay per flight. The main cause of delays were Weather (45%), ATC-Capacity (32%), Staffing (8%), Equipment (ATC) (7%), Other (6%) and Special Event (1%).</p> <p>Before applying the post-ops adjustment process, the total en-route ATFM delay per flight reached 0.34 min / flight whereas the CRSTMP En-route ATFM delay per flight reached 0.15 min / flight as shown in the Capacity Report of the FABEC. After applying the post-ops adjustment process and re-attributing respectively 61 357 min to DSNA and 49 178 min to DFS according to the NM data, skyguide reached 0.21 for the total en-route ATFM delay per flight and 0.11 for the CRSTMP part.</p> <p>The main cause of delay was weather. As Skyguide is in charge of air traffic control in the centre of the Alps, it is a lot more subject to strong adverse weather conditions than the major part of all the other ANSPs.</p> <p>As a basis for comparison, the NM includes approximately 15% of delay due to Weather in its delay forecast. The fact that heavy CB situation begins to occur in May until September is obviously an aggravating factor as it happens exactly at the same time as the yearly peak of traffic demand, which has a tremendous impact on delays.</p> | | | | | | |
| Monitoring process for capacity performance | | | | | | |
| <p>The monitoring for en-route capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate.</p> <p>On a monthly basis and through the AFG/PMG (ANSP FABEC Group / Performance Management Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the national target set and reference or indicative values and on the results and analysis of the en- route capacity achievement.</p> <p>In case the national target set and/or the annual/reference values are threatened not to be met, AFG/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at national and/or ACC level, in order to remedy the situation.</p> <p>The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the AFG/PMG, to the FABEC Council for such appropriate measures, after consultation with the AFG/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values.</p> <p>The FPC is also responsible for the management of the Capacity KPA financial incentive schemes. This monitoring process is described in the FABEC FPC States Performance Process description, regularly updated.</p> <p>The Swiss NSA has periodical meetings with its ANSPs. - The Swiss NSA is regularly provided with various reports, analysis and data such as FABEC monthly capacity reports (including Skyguide data), Skyguide reports, PRU dashboards which enable to closely monitor the performance evolution.</p> | | | | | | |

Capacity Planning

A NOP Recovery Plan process was initiated and launched by the Network Manager and its first edition was published on 30 April 2020, as European traffic began a slow recovery from its lowest point of just 2,099 flights across the network on 12 April 2020.

Since then a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.

On 6th May 2022, a first version of the new 2022-2026 NOP has been released (still based on the STATFOR forecast published in October 2021 as STATFOR has postponed the publication of its new forecast to October 2022). It included the capacity planning for skyguide with the latest available capacity information and remedial measures for all ACCs concerned by capacity issues.

Skyguide is of course part of this process and contributes to the provision for a consolidated European network view of the evolution of the air traffic, enabling the planning of the service delivered in the recovery phase to match the expected air traffic demand in a safe, efficient and coordinated manner. However, the 10% capacity buffer requested by the NM, the recommendation for zero delay and the continuous optimistic traffic forecast selected have naturally an adverse impact on ANSPs finance.

Skyguide implemented the cross-border airspace restructuring with Reims ACC and Basel APP, improved ATFCM procedures and STAM as well as the CDM procedures for Airspace requests level 2 and 3 (ASM - ATFCM), its optimized sector opening scheme to match the traffic demand, network weather mitigation measures, the FABEC airspace structure and implemented the FRA CH.

In parallel, Skyguide continued to develop its top priority programme: the Virtual Centre; in addition, Crystal, the traffic and complexity prediction tool is continuously improved.

| ATCO in OPS (FTE) | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| Geneva ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 122 | 129 | 124 | 120 | |
| Actual | 118 | 121 | 118 | 111 | | | |
| Zurich ACC | | | | | | | |
| Zurich ACC | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Observations |
| Planned (Perf Plan) | - | - | 113 | 113 | 112 | 109 | |
| Actual | 121 | 113 | 118 | 117 | | | |
| Application of Corrective Measures for Capacity (if applicable) | | | | | | | |
| <p>A CAPAN (Capacity analysis) study has been planned in both ACCs, starting at the end of 2022, results will be available at the end of Summer 2023, and capacity should be increased before Summer 2024.</p> <p>Short-term ATFCM measures and what-if scenarios: in 2023, Skyguide implemented fully coordinated flow based measures between both centres Geneva and Zurich. It allows to diminish delay avoiding regulations when we observe excess of demand over short-period of time and allows to increase flight efficiency when we have a capacity surplus and we can relieve RAD constraints (offering greener trajectories).</p> <p>Increase usage of CPDLC: the use of CPDLC is particularly scrutinized, simulations have been led to quantify the possible benefits. Within the course of 2023, analyses will be led to determine to which extent some of the CPDLC performance enhancement impacts could be harvested through an increase of sector capacity.</p> <p>Finally, Skyguide will launch a trial in Summer 2023 with a new tool to detect more precisely the impact of adverse weather conditions on the required temporary decrease of sector capacity.</p> | | | | | | | |
| Summary of capacity performance | | | | | | | |
| <p>Switzerland did not achieve the required en route capacity performance in 2022. There were 1 042k flights in the airspace of Switzerland, with 242k minutes of ATFM en route delay attributed to Skyguide after the NM post operations delay attribution process.</p> <p>There were an additional 111k minutes of en route ATFM delay originating from Skyguide that were re-attributed to DFS (>49k) and DSNA (>61k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.</p> | | | | | | | |

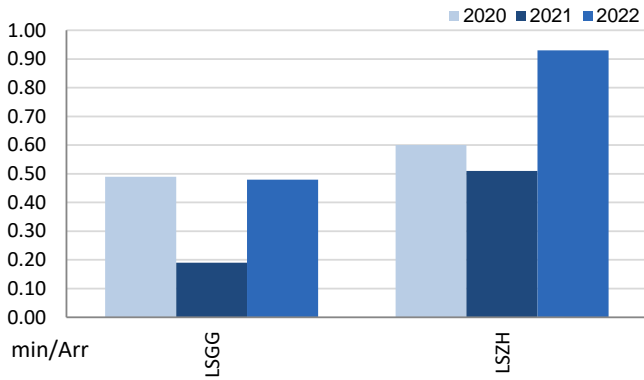
1. Overview

Switzerland identifies its two main airports Zurich (LSZH) and Geneva (LSGG) as subject to RP3 monitoring. Both airports have a fully implemented data flow that allows the proper monitoring of the pre-departure delays. Traffic in 2022 at these two airports was still 18% lower than in 2019, but recovered 69% with respect to 2021.

Average arrival ATFM delays in 2022 was 0.74 min/arr, compared to 0.37 min/arr in 2021. ATFM slot adherence has improved (2022: 95.6%; 2021: 94.8%).

2. Arrival ATFM Delay

Arrival ATFM delay



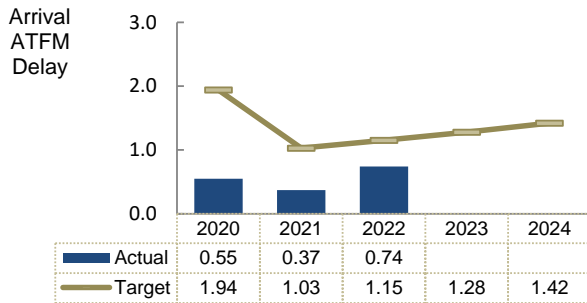
ATFM delays at both Swiss increased significantly in 2022.

At Zurich (LSZH: 2019: 1.99 min/arr.; 2020: 0.60 min/arr.; 2021: 0.51 min/arr.; 2022: 0.93 min/arr.) 66% of these delays were attributed to weather and 30% to aerodrome capacity issues.

At Geneva (LSGG: 2019: 1.04 min/arr.; 2020: 0.49 min/arr.; 2021: 0.19 min/arr.; 2022: 0.48 min/arr.) 42% of the delays were attributed to Aerodrome Capacity issues, 36% to Weather, and 13% to ATC staffing issues.

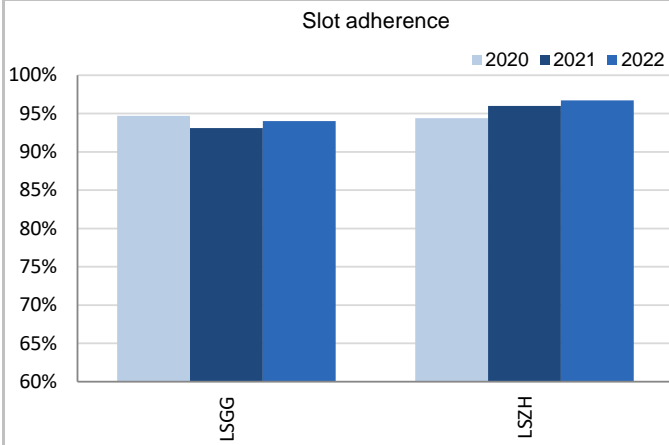
According to the Swiss monitoring report: 2022 delays were mostly due to non CRSTMP causes.

3. Arrival ATFM Delay – National Target



The national target on arrival ATFM delay in 2022 was met.

4. ATFM Slot Adherence



These airports showed adherence above 94% and the national average was 95,6%, a small improvement with respect to the performance in 2021 (94.8%). With regard to the 4.4% of flights that did not adhere, 2.9% was early and 1.5% was late.

5. ATC Pre-departure Delay

The performance at Zurich has deteriorated (LSZH; 2019: 1.63 min/dep.; 2020: 0.52 min/dep.; 2021: 0.39 min/dep.; 2022: 0.71 min/dep.) but it was still better than in 2019.

The improvement of the quality of the data reporting at Geneva in 2022 allowed for the calculation of this indicator, showing also a result slightly better than in 2019 (LSGG: 2019: 0.36 min/dep.; 2022: 0.32 min/dep.)

According to the Swiss monitoring report: *2022 actual performance is worse than 2020 or 2021, which is fully in line with traffic increase at the airport, compared with a very low level of traffic in 2020, and a rather low level in 2021. In 2022, traffic levels remained lower than 2019, however, traffic predictability and traffic volatility were 2 factors playing a key role in generating delay at departure. No particular issues have been identified and no specific measures have been implemented in 2022 in relation to this PI.*

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at both Geneva and Zurich increased again in 2022 (LSZH: 2020: 7.55 min/dep.; 2021: 9.66 min/dep.; 2022: 15.82 min/dep.; LSGG: 2020: 8.46 min/dep.; 2021: 9.03 min/dep.; 2022: 15.12 min/dep.). The highest delays per flight at these airports were observed in Summer and in December.

According to the Swiss monitoring report: *With the increase of traffic at airports, the indicator 'average time of all cause departure delay per flight' deteriorated in 2022 compared with 2021. At ANSP level, we are not in a position to explain all delays reasons, and more particularly the non-ATFM delays.*

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

| Airport Name | Avg arrival ATFM delay | | | | | Slot adherence | | | | | ATC pre-departure delay | | | | | All Causes Pre-departure Delay | | | | |
|--------------|------------------------|------|------|------|------|----------------|-------|-------|------|------|-------------------------|------|------|------|------|--------------------------------|------|-------|------|------|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Geneva-LSGG | 0.49 | 0.19 | 0.48 | | | 94.7% | 93.1% | 94.0% | | | n/a | n/a | 0.32 | | | 8.46 | 9.03 | 15.12 | | |
| Zurich-LSZH | 0.6 | 0.51 | 0.93 | | | 94.4% | 96.0% | 96.7% | | | 0.52 | 0.39 | 0.71 | | | 7.55 | 9.66 | 15.82 | | |

SWITZERLAND: En route charging zone

Monitoring of en route COST-EFFICIENCY for 2022

| 1. Contextual economic information: en route air navigation services | | | | | | |
|--|-----------------------|---------------|---------------|---------------|---------------|--------------|
| · Switzerland ECZ represents 2.7% of the SES en route ANS actual costs in 2022 | | | | | | |
| · National currency: CHF Exchange rates (1 EUR=) 2017: 1.11124 CHF 2022: 1.00492 CHF | | | | | | |
| · Performance Plan: RP3 draft performance plan dated 04 November 2022 and found consistent as per Commission Decision (EU) 2023/178 of 14 December 2022 The final version of the plan was adopted and published by Switzerland in accordance with Article 16 (a) of Regulation (EU) 2019/317 | | | | | | |
| 2. Monitoring of the en route determined unit cost (DUC) at charging zone level | | | | | | |
| The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year. | | | | | | |
| The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices. | | | | | | |
| 3. En route actual unit cost (AUC) vs. en route determined unit cost (DUC) | | | | | | |
| Switzerland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| En route costs (nominal CHF) | 161 562 792 | 188 122 841 | 349 685 633 | 185 025 300 | 178 132 412 | 177 797 629 |
| Inflation % | 0.0% | 0.1% | | 0.3% | 0.8% | 0.9% |
| Inflation index (100 in 2017) | 101.3 | 101.4 | | 101.7 | 102.5 | 103.4 |
| Real en route costs (CHF2017) | 160 013 873 | 186 104 662 | 346 118 535 | 182 630 797 | 174 728 056 | 173 137 254 |
| Total en route service units | 650 488 | 879 000 | 1 529 488 | 1 593 957 | 1 688 954 | 1 810 951 |
| Real en route DUC per service unit (CHF2017) | 245.99 | 211.72 | 226.30 | 114.58 | 103.45 | 95.61 |
| Real en route DUC per service unit (€2017) | 221.37 | 190.53 | 203.64 | 103.11 | 93.10 | 86.04 |
| Switzerland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| En route costs (nominal CHF) | 184 908 005 | 174 890 014 | 359 798 018 | 187 151 456 | | |
| Inflation % | 0.0% | 0.5% | | 2.7% | | |
| Inflation index (100 in 2017) | 101.3 | 101.8 | | 104.6 | | |
| Real en route costs (CHF2017) | 183 058 673 | 172 471 948 | 355 530 622 | 180 631 817 | | |
| Total en route service units | 650 488 | 897 288 | 1 547 776 | 1 544 718 | | |
| Real en route AUC per service unit (CHF2017) | 281.42 | 192.21 | 229.70 | 116.94 | | |
| Real en route AUC per service unit (€2017) | 253.25 | 172.97 | 206.71 | 105.23 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| En route costs (nominal CHF) | in value 23 345 213 | -13 232 828 | 10 112 385 | 2 126 156 | | |
| | in % +14.4% | -7.0% | +2.9% | +1.1% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.4 p.p. | | 2.4 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.4 p.p. | | 2.9 p.p. | | |
| Real en route costs (CHF2017) | in value 23 044 801 | -13 632 714 | 9 412 086 | -1 998 980 | | |
| | in % +14.4% | -7.3% | +2.7% | -1.1% | | |
| Total en route service units | in value 0 | 18 288 | 18 288 | -49 239 | | |
| | in % - | +2.1% | +1.2% | -3.1% | | |
| Real en route unit cost per service unit (CHF2017) | in value 35.43 | -19.51 | 3.41 | 2.36 | | |
| | in % +14.4% | -9.2% | +1.5% | +2.1% | | |
| Real en route unit cost per service unit (€2017) | in value 31.88 | -17.56 | 3.07 | 2.12 | | |
| | in % +14.40% | -9.2% | +1.5% | +2.1% | | |
| 4. Focus on en route DUC monitoring at charging zone level | | | | | | |
| AUC vs. DUC | | | | | | |
| In 2022, the en route AUC was +2.1% (or +2.36 CHF2017, +2.12 €2017) higher than the planned DUC. This results from the combination of lower than planned TSUs (-3.1%) and lower than planned en route costs in real terms (-1.1%, or -2.0 MCHF2017, -1.8 M€2017). It should be noted that actual inflation index in 2022 was +2.9 p.p. higher than planned. | | | | | | |
| En route service units | | | | | | |
| The difference between actual and planned TSUs (-3.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Skyguide) bearing a loss of -3.3 M€2017. | | | | | | |
| En route costs by entity | | | | | | |
| Actual real en route costs are -1.1% (-1.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Skyguide (-1.9%, or -2.8 M€2017) and higher costs for the MET service provider (+2.7%, or +0.2 M€2017), and the NSA/EUROCONTROL (+6.8%, or +0.8 M€2017). | | | | | | |
| En route costs for the main ANSP (Skyguide) at charging zone level | | | | | | |
| Actual en route costs in real terms are lower than planned for Skyguide in 2022 (-1.9%, or -2.8 M€2017). However, the differences by nature of costs are distorted by two factors: | | | | | | |
| a) The overall reported costs in each cost item are netted by the financing of the services provided by Skyguide outside the Swiss FIR; | | | | | | |
| b) Skyguide's costs include significant amounts linked to the additional costs caused by the change in the capitalisation rule in 2022 (+14.9 M€2017). However, in order for this amount not to be billed to airspace users, it has also been reported as negative exceptional item in the determined costs, but not in the actual costs (-100% of negative exceptional costs, or +14.9 M€2017). | | | | | | |
| - the significant difference in staff costs (which is overall of -€17.5 M€2017 or -14.7%), can be mainly explained by the evolution of the FTEs and salary assumptions, but it is also due to a reimbursement from the pension fund, although partially offset by the provision for ATCO retirement age transition costs. | | | | | | |
| <div style="text-align: center;"> <p>2022 actual vs. planned TSUs</p> </div> | | | | | | |
| <div style="text-align: center;"> <p>Costs by entity at ECZ level (M€2017):</p> </div> | | | | | | |
| <div style="text-align: center;"> <p>Costs by nature for main ANSP (M€2017):</p> </div> | | | | | | |

SWITZERLAND: En route charging zone

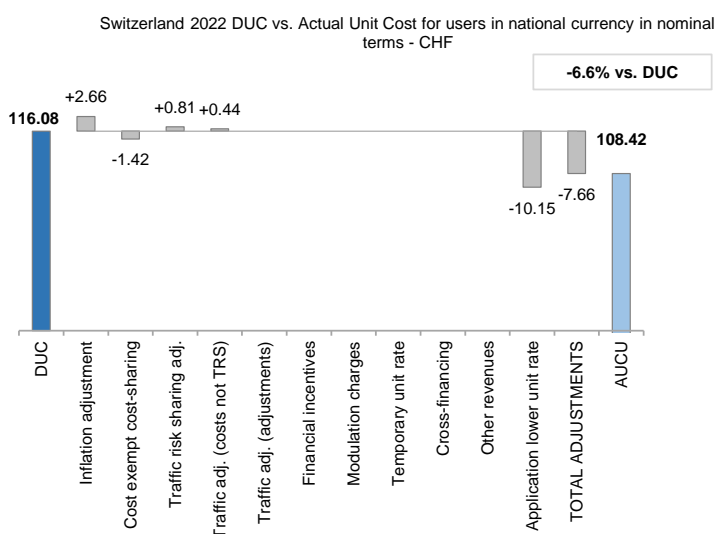
Monitoring of en route COST-EFFICIENCY for 2022

5. Monitoring of the en route actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. En route actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | CHF/SU | € /SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 116.08 | 115.51 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 116.08 | 115.51 |
| Inflation adjustment | 2.66 | 2.65 |
| Cost exempt from cost-sharing | -1.42 | -1.41 |
| Traffic risk sharing adjustment | 0.81 | 0.80 |
| Traffic adj. (costs not TRS) | 0.44 | 0.43 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | 0.00 | 0.00 |
| Application of lower unit rate | -10.15 | -10.10 |
| Total adjustments | -7.66 | -7.62 |
| AUCU | 108.42 | 107.89 |
| AUCU vs. DUC | -6.6% | -6.6% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

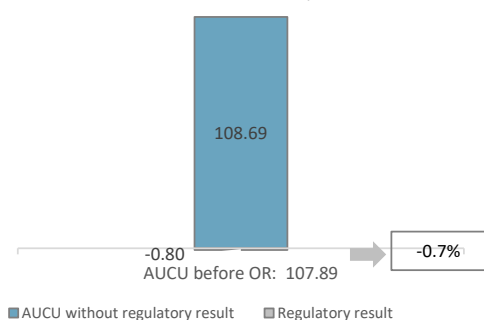
7. En route costs exempt from cost sharing

| | | CHF '000 | € '000 | CHF/SU | € /SU |
|---|--|---------------|---------------|--------------|--------------|
| by item | New and existing investments | -3 059 | -3 044 | -1.98 | -1.97 |
| | Competent authorities and qualified entities costs | 0 | 0 | 0.00 | 0.00 |
| | Eurocontrol costs | 872 | 868 | 0.56 | 0.56 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -2 187 | -2 176 | -1.42 | -1.41 |

Source: These data are taken from the June 2023 en route Reporting Tables (for Eurocontrol costs and costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. En route regulatory result at charging zone level

Share of regulatory result in the AUCU (before deduction of other revenue)



*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on en route AUCU monitoring at charging zone level

The actual en route unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (108.42 CHF or 107.89 €) is -6.6% lower than the nominal DUC (116.08 CHF or 115.51 €). The difference between these two figures (-7.66 CHF/SU or -7.62 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+2.66 CHF/SU or +2.65 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-1.42 CHF/SU or -1.41 €/SU);
- the addition of the traffic risk sharing adjustments (+0.81 CHF/SU or +0.80 €/SU);
- the addition of the traffic adjustment (+0.44 CHF/SU or +0.43 €/SU) for the costs not subject to traffic risk sharing; and
- application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-10.15 CHF/SU or -10.10 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is -0.7%.

SWITZERLAND: En route main ANSP (Skyguide)

Monitoring of en route COST-EFFICIENCY for 2022

10. Monitoring of the en route ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-post RR does not take into account the application of the lower unit rate as per Art. 29.6 in 2022. This application generated losses of -15.7 MCHF for entities providing services in the en route charging zone (-5.3 MCHF for skyguide and -10.3 MCHF for MET SP).

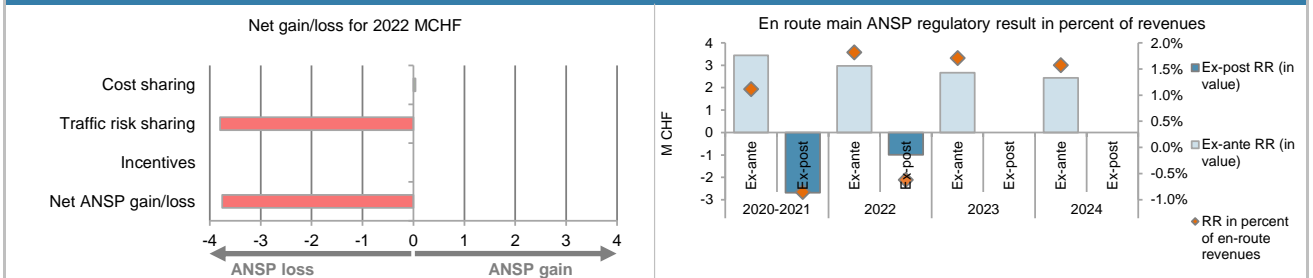
11. Net gain/loss for the main ANSP for the en route activity at charging zone level

| Cost sharing (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|---------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | -10 309 | -755 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 604 | 3 868 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | -215 | -3 071 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | -9 920 | 42 | | |
| Traffic risk sharing (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 1.2% | -3.1% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 309 093 | 163 252 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 3 696 | -3 798 | | |
| Incentives (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on en route activity (CHF '000) | -6 224 | -3 756 | | |
| Net ANSP gain(+)/loss(-) on en route activity (€ '000) | -5 759 | -3 738 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Skyguide planned regulatory result (CHF '000) from RP3 PP | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
|--|----------------|----------------|----------------|----------------|----------------|----------------|
| Total asset base | 147 653 | 130 663 | 278 316 | 130 292 | 116 062 | 105 902 |
| Proportion of financing through equity (in %) | 47% | 22% | 35% | 18% | 23% | 29% |
| RoE pre-tax rate (in %) | 2.8% | 5.1% | 3.5% | 12.9% | 9.9% | 8.1% |
| RoE (in value) | 1 939 | 1 500 | 3 439 | 2 968 | 2 661 | 2 443 |
| Ex-ante regulatory result (+/-) for the en route charging zone | 1 939 | 1 500 | 3 439 | 2 968 | 2 661 | 2 443 |
| Revenue for the en route charging zone | 141 816 | 167 277 | 309 093 | 163 252 | 156 079 | 155 395 |
| Ex-ante regulatory result (+/-) in percent of revenues | 1.4% | 0.9% | 1.1% | 1.8% | 1.7% | 1.6% |
| Ex-ante RoE pre-tax rate (in %) | 2.8% | 5.1% | 3.5% | 12.9% | 9.9% | 8.1% |
| Skyguide actual regulatory result (CHF '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Total asset base | 147 653 | 126 571 | 274 224 | 118 692 | | |
| Proportion of financing through equity (in %) | 47% | 33% | 40% | 35% | | |
| RoE pre-tax rate (in %) | 2.8% | 3.8% | 3.2% | 6.6% | | |
| RoE (in value) | 1 939 | 1 606 | 3 545 | 2 760 | | |
| Net ANSP gain(+)/loss(-) for the en route charging zone | 0 | -6 224 | -6 224 | -3 756 | | |
| Ex-post regulatory result (+/-) for the en route charging zone (see Note 1) | 1 939 | -4 619 | -2 679 | -996 | | |
| Revenue for the en route charging zone | 165 162 | 148 017 | 313 178 | 160 251 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 1) | 1.2% | -3.1% | -0.9% | -0.6% | | |
| Ex-post RoE pre-tax rate (in %) | 2.8% | -11.1% | -2.4% | -2.4% | | |

13. Focus on the main ANSP regulatory result on en route activity



Skyguide net gain on activity in the Switzerland en route charging zone in the year 2022

Skyguide reported a net loss of -3.8 MCHF, as a combination of a gain of +0.04 MCHF arising from the cost sharing mechanism, with a loss of -3.8 MCHF arising from the traffic risk sharing mechanism.

Skyguide overall regulatory results (RR) for the en route activity

Ex-post, the overall RR taking into account the net loss from the en route activity mentioned above (-3.8 MCHF) and the actual RoE (+2.8 MCHF) amounts to -1.0 MCHF (-0.6% of the en route revenues). The resulting ex-post rate of return on equity is -2.4%. See also **Note 1** above.

SWITZERLAND: Other en route ANSPs/METSPs

Monitoring of en route COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for en route activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Switzerland MET planned regulatory result (CHF '000) | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Ex-ante regulatory result (+/-) for the en route charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the en route charging zone | 8 475 | 8 476 | 16 951 | 8 977 | 8 977 | 8 977 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Switzerland MET actual regulatory result (CHF '000) | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Ex-post regulatory result (+/-) for the en route charging zone | 0 | 57 | 57 | -239 | | |
| Revenue for the en route charging zone | 8 475 | 8 511 | 16 986 | 9 237 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 0.7% | 0.3% | -2.6% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the en route activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the en route charging zone for Switzerland (Switzerland MET) corresponds to -2.6% of the en route revenues. The RoE cannot be calculated for Switzerland MET, as it does not report equity. See also Note 1 in item 10. | | | | | | |

SWITZERLAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2022

| 1. Contextual economic information: terminal air navigation services | | | | | | |
|---|----------------------|---------------|--|---------------|---------------|---------------|
| <ul style="list-style-type: none"> Switzerland TCZ represents 7.0% of the SES terminal ANS actual costs in 2022 Number of airports in charging zone in 2022: 2 of which: <ul style="list-style-type: none"> Airports with fewer than 80,000 IFR mvmts: 0 Airports with more than 80,000 IFR mvmts: 2 National currency: CHF Exchange rates (1 EUR=) 2017: 1.11124 CHF 2022: 1.00492 CHF Performance Plan: See item 1 for the en route charging zone(s). | | | | | | |
| 2. Monitoring of the terminal determined unit cost (DUC) at charging zone level | | | | | | |
| <p>The Determined Unit Cost (DUC) is the cost per service unit, at which the service is planned to be provided during the year. The Actual Unit Cost (AUC) reflects the cost per service unit, at which the service has actually been provided during the year.</p> <p>The monitoring of the DUC / AUC is carried out in national currency in real terms, at 2017 prices.</p> | | | | | | |
| 3. Terminal actual unit cost (AUC) vs. terminal determined unit cost (DUC) | | | | | | |
| Switzerland: Data from RP3 Performance Plan | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D |
| Terminal costs (nominal CHF) | 99 524 185 | 109 930 021 | 209 454 206 | 105 207 116 | 104 121 837 | 105 326 817 |
| Inflation % | 0.0% | 0.1% | | 0.3% | 0.8% | 0.9% |
| Inflation index (100 in 2017) | 101.3 | 101.4 | | 101.7 | 102.5 | 103.4 |
| Real terminal costs (CHF2017) | 98 540 501 | 108 730 912 | 207 271 413 | 103 867 436 | 102 170 228 | 102 622 408 |
| Total terminal service units | 111 807 | 128 000 | 239 807 | 245 791 | 267 772 | 279 762 |
| Real terminal DUC per service unit (CHF2017) | 881.34 | 849.46 | 864.32 | 422.59 | 381.56 | 366.82 |
| Real terminal DUC per service unit (€2017) | 793.11 | 764.43 | 777.80 | 380.28 | 343.36 | 330.10 |
| Switzerland: Actual data from Reporting Tables | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A |
| Terminal costs (nominal CHF) | 99 524 185 | 101 058 818 | 200 583 003 | 98 227 665 | | |
| Inflation % | 0.0% | 0.5% | | 2.7% | | |
| Inflation index (100 in 2017) | 101.3 | 101.8 | | 104.6 | | |
| Real terminal costs (CHF2017) | 98 540 501 | 99 651 423 | 198 191 924 | 94 932 284 | | |
| Total terminal service units | 111 807 | 128 412 | 240 219 | 229 487 | | |
| Real terminal AUC per service unit (CHF2017) | 881.34 | 776.03 | 825.05 | 413.67 | | |
| Real terminal AUC per service unit (€2017) | 793.11 | 698.35 | 742.45 | 372.26 | | |
| Difference between Actuals and Planned | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 |
| Terminal costs (nominal CHF) | in value 0 | -8 871 203 | -8 871 203 | -6 979 451 | | |
| | in % - | -8.1% | -4.2% | -6.6% | | |
| Inflation % | in p.p. 0.0 p.p. | 0.4 p.p. | | 2.4 p.p. | | |
| Inflation index (100 in 2017) | in p.p. 0.0 p.p. | 0.4 p.p. | | 2.9 p.p. | | |
| Real terminal costs (CHF2017) | in value 0 | -9 079 489 | -9 079 489 | -8 935 152 | | |
| | in % - | -8.4% | -4.4% | -8.6% | | |
| Total terminal service units | in value 0 | 412 | 412 | -16 304 | | |
| | in % - | +0.3% | +0.2% | -6.6% | | |
| Real terminal unit cost per service unit (CHF2017) | in value 0.00 | -73.43 | -39.28 | -8.91 | | |
| | in % - | -8.6% | -4.5% | -2.1% | | |
| Real terminal unit cost per service unit (€2017) | in value 0.00 | -66.08 | -35.35 | -8.02 | | |
| | in % - | -8.6% | -4.5% | -2.1% | | |
| 4. Focus on terminal DUC monitoring at charging zone level | | | | | | |
| <p>AUC vs. DUC In 2022, the terminal AUC was -2.1% (or -8.91 CHF2017, -8.02 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-8.6%, or -8.9 MCHF2017, -8.0 M€2017) and significantly lower than planned TNSUs (-6.6%). It should be noted that actual inflation index in 2022 was +2.9 p.p. higher than planned.</p> | | | <p>2022 actual vs. planned TNSUs</p> <p>Threshold -10% Threshold +10%</p> <p>Dead-band -2% Dead-band +2%</p> | | | |
| <p>Terminal service units The difference between actual and planned TNSUs (-6.6%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (Skyguide) bearing a loss of -2.9 M€2017.</p> | | | <p>Costs by entity at TCZ level (M€2017):</p> | | | |
| <p>Terminal costs by entity Actual real terminal costs are -8.6% (-8.0 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Skyguide (-8.1%, or -7.2 M€2017) and the MET service provider (-20.2%, or -0.9 M€2017).</p> | | | <p>Costs by nature for main ANSP (M€2017):</p> | | | |
| <p>Terminal costs for the main ANSP (Skyguide) at charging zone level Actual terminal costs in real terms are lower than planned for Skyguide in 2022 (-8.1%, or -7.2 M€2017). However, the differences by nature of costs are distorted by the presentation of the additional costs caused by the change in the capitalisation rule in 2022 (+7.4 M€2017). Indeed, in order for these amounts not to be billed to airspace users, they have also been reported as negative exceptional items in the determined costs, but not in the actual costs (-100% of negative exceptional costs, or +7.4 M€2017). - the significant difference in staff costs (which is overall of -14.7 M€2017 or -26.4%), can be mainly explained by the evolution of the FTEs and salary assumptions, but it is also due to a reimbursement from the pension fund, although partially offset by the provision for ATCO retirement age transition costs.</p> | | | | | | |

SWITZERLAND: Terminal charging zone

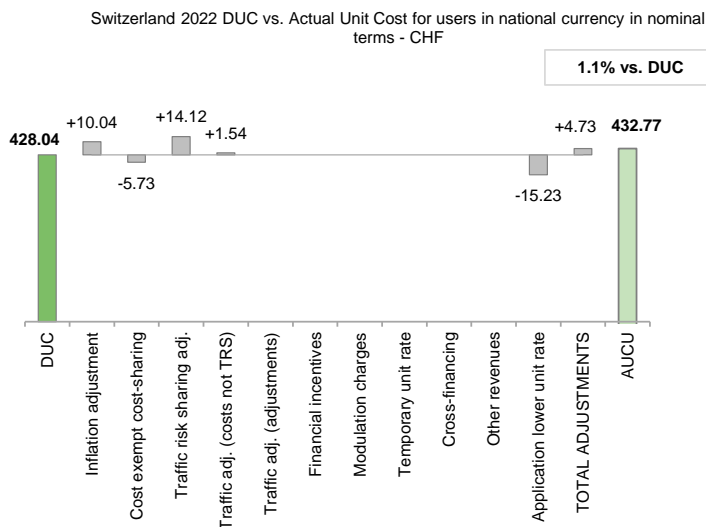
Monitoring of terminal COST-EFFICIENCY for 2022

5. Monitoring of the terminal actual unit cost for users (AUCU) at charging zone level

The **Actual Unit Cost for Users (AUCU)** reflects the price per service unit that is charged *in fine* to users for the services provided in the year. It corresponds to the sum of the DUC for the year and of the different adjustments stemming from that year.

The monitoring of the AUCU is carried out in national currency in nominal terms.

6. Terminal actual unit cost for users (AUCU) at charging zone level



| Components of the AUCU | CHF/SU | €/SU |
|---------------------------------|---------------|---------------|
| Initial DUC charged | 428.04 | 425.94 |
| DUC to be charged retroactively | 0.00 | 0.00 |
| DUC | 428.04 | 425.94 |
| Inflation adjustment | 10.04 | 9.99 |
| Cost exempt from cost-sharing | -5.73 | -5.70 |
| Traffic risk sharing adjustment | 14.12 | 14.05 |
| Traffic adj. (costs not TRS) | 1.54 | 1.53 |
| Traffic adj. (adjustments)* | | |
| Financial incentives | 0.00 | 0.00 |
| Modulation of charges | 0.00 | 0.00 |
| Temporary UR** | | |
| Cross-financing | 0.00 | 0.00 |
| Other revenues | 0.00 | 0.00 |
| Application of lower unit rate | -15.23 | -15.16 |
| Total adjustments | 4.73 | 4.71 |
| AUCU | 432.77 | 430.65 |
| AUCU vs. DUC | 1.1% | 1.1% |

* The traffic adjustment on adjustments is not considered to avoid double counting, as the related adjustments have already been taken into account in full in the AUCU for the current year or previous years.

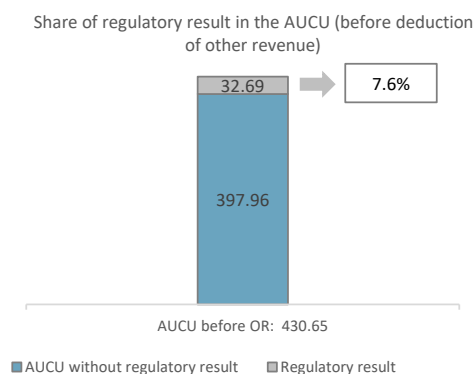
** The difference in revenue due to the application of the temporary unit rates in 2022, if applicable, is already reflected in the DUC (part to be charged retroactively) and is therefore not considered in the total adjustments, in order to avoid double counting.

7. Terminal costs exempt from cost sharing

| | | CHF '000 | € '000 | CHF/SU | €/SU |
|---|--|---------------|---------------|--------------|--------------|
| by item | New and existing investments | -1 314 | -1 308 | -5.73 | -5.70 |
| | Competent authorities and qualified entities costs | 0 | 0 | 0.00 | 0.00 |
| | Eurocontrol costs | 0 | 0 | 0.00 | 0.00 |
| | Pension costs | 0 | 0 | 0.00 | 0.00 |
| | Interest on loans | 0 | 0 | 0.00 | 0.00 |
| | Changes in law | 0 | 0 | 0.00 | 0.00 |
| Total costs exempt from cost sharing | | -1 314 | -1 308 | -5.73 | -5.70 |

Source: These data are taken from the June 2023 terminal Reporting Tables (for costs of competent authorities and qualified entities) and from the "NSA Report on the verification of cost risk sharing for the year 2022" submitted in accordance with Article 28 (7) of Regulation (EU) 2019/317 (for ANSPs costs).

8. Terminal regulatory result at charging zone level



| ANSP(S) | CHF '000 | € '000 | CHF/SU | €/SU |
|-----------------------------------|---------------|---------------|---------------|---------------|
| Skyguide | 6 564 | 6 532 | 28.60 | 28.46 |
| METSP(s) | CHF '000 | € '000 | CHF/SU | €/SU |
| Switzerland-MET | 975 | 970 | 4.25 | 4.23 |
| Total charging zone | 7 539 | 7 502 | 32.85 | 32.69 |
| Actual cost for users*** | 99 314 | 98 828 | 432.77 | 430.65 |
| Regulatory result (% AUCU) | 7.6% | 7.6% | 7.6% | 7.6% |

*** before deduction of other revenues, as is the case for the regulatory results (see items 10 to 14)

9. Focus on terminal AUCU monitoring at charging zone level

The actual terminal unit cost incurred by airspace users (AUCU) in respect of activities performed in 2022 (432.77 CHF or 430.65 €) is +1.1% higher than the nominal DUC (428.04 CHF or 425.94 €). The difference between these two figures (+4.73 CHF/SU or +4.71 €/SU) is due to:

- the positive inflation adjustment resulting from higher than planned inflation (+10.04 CHF/SU or +9.99 €/SU);
- the impact of adjustments resulting from the costs exempted from cost-sharing mechanism (-5.73 CHF/SU or -5.70 €/SU);
- the addition of the traffic risk sharing adjustments (+14.12 CHF/SU or +14.05 €/SU);
- the addition of the traffic adjustment (+1.54 CHF/SU or +1.53 €/SU) for the costs not subject to traffic risk sharing; and
- application of a lower unit rate as foreseen in Art. 29(6) in year 2022 (-15.23 CHF/SU or -15.16 €/SU).

The share of the regulatory result (see items 10 to 14) in the AUCU (before the deduction of other revenues) is 7.6%.

SWITZERLAND: Terminal main ANSP (Skyguide)

Monitoring of terminal COST-EFFICIENCY for 2022

10. Monitoring of the terminal ANSPs regulatory results (RR)

The **Regulatory Result (RR)** corresponds to the revenues generated by the activities of the year, that exceed the direct and indirect operating costs of an ANSP, and so provide for a reasonable return on assets to contribute towards necessary capital improvements. The notion of RR focuses on the ANSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ANSPs financial statements. Also, it does not take into account any opportunity cost.

The RR, when expressed in percentage of the revenues, can be associated to a "margin" generated by the ANSP with respect to the activity of the year, but it is not comparable to the margin that would be calculated straight from ANSPs financial statements.

- Ex-ante, the RR is equal to the RoE (in value) included in the determined cost of capital.

- Ex-post, the RR is the sum of the RoE (in value) in the actual cost of capital and the net gain/loss resulting from risk sharing and incentives generated from that year.

The **net gain/loss** calculated in box 11 results from the combination of three distinct items: a) the outcome of the cost-sharing mechanism to be retained by the ANSP (including the impact of costs exempted from cost-sharing and of the inflation adjustment); b) the outcome of the traffic risk sharing mechanism; and c) the outcome of the financial incentive mechanism for capacity and environment targets (not applicable for 2022).

The monitoring of the RR is carried out in national currency in nominal terms.

Note 1: Ex-post RR does not take into account the application of the lower unit rate as per Art. 29.6 in 2022. This application generated losses of -3.5 MCHF for entities providing services in the terminal charging zone (-0.8 MCHF for skyguide and -2.7 MCHF for MET SP).

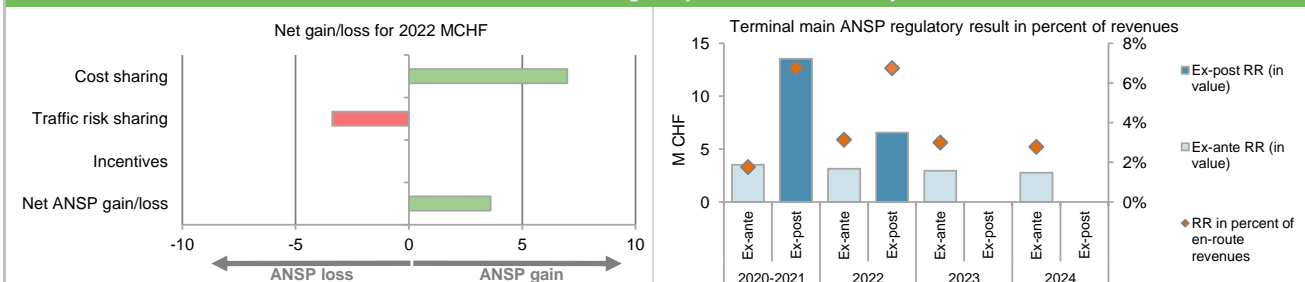
11. Net gain/loss for the main ANSP for the terminal activity at charging zone level

| Cost sharing (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
|--|--------------|---------------|------|------|
| Difference in costs: gain (+)/Loss (-) retained/borne by the ANSP | 8 887 | 6 113 | | |
| Inflation adjustment to be recovered from (+) or reimbursed to (-) users | 361 | 2 170 | | |
| Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users | 408 | -1 290 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of cost sharing | 9 656 | 6 994 | | |
| Traffic risk sharing (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Difference in total service units (actual vs PP) % | 0.2% | -6.6% | | |
| Determined costs subject to traffic risk sharing for the ANSP (PP) | 199 482 | 99 876 | | |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of traffic risk sharing | 343 | -3 386 | | |
| Incentives (CHF '000) | 2020-2021 | 2022 | 2023 | 2024 |
| Gain (+)/Loss (-) to be retained by the ANSP in respect of incentives (bonus/penalty) | 0 | 0 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (CHF '000) | 9 999 | 3 608 | | |
| Net ANSP gain(+)/loss(-) on terminal activity (€ '000) | 9 251 | 3 590 | | |

12. Regulatory result (RR) for the main ANSP at charging zone level

| Skyguide planned regulatory result (CHF '000) from RP3 PP | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
|--|---------------|----------------|----------------|---------------|---------------|---------------|
| Total asset base | 142 645 | 143 487 | 286 132 | 138 028 | 129 237 | 120 278 |
| Proportion of financing through equity (in %) | 47% | 22% | 35% | 18% | 23% | 29% |
| RoE pre-tax rate (in %) | 2.8% | 5.1% | 3.6% | 12.9% | 9.9% | 8.1% |
| RoE (in value) | 1 874 | 1 647 | 3 521 | 3 144 | 2 963 | 2 775 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 1 874 | 1 647 | 3 521 | 3 144 | 2 963 | 2 775 |
| Revenue for the terminal charging zone | 94 537 | 104 944 | 199 482 | 99 876 | 98 791 | 99 996 |
| Ex-ante regulatory result (+/-) in percent of revenues | 2.0% | 1.6% | 1.8% | 3.1% | 3.0% | 2.8% |
| Ex-ante RoE pre-tax rate (in %) | 2.8% | 5.1% | 3.6% | 12.9% | 9.9% | 8.1% |
| Skyguide actual regulatory result (CHF '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Total asset base | 142 645 | 131 200 | 273 845 | 127 135 | | |
| Proportion of financing through equity (in %) | 47% | 33% | 40% | 35% | | |
| RoE pre-tax rate (in %) | 2.8% | 3.8% | 3.2% | 6.6% | | |
| RoE (in value) | 1 874 | 1 664 | 3 538 | 2 956 | | |
| Net ANSP gain(+)/loss(-) for the terminal charging zone | 0 | 9 999 | 9 999 | 3 608 | | |
| Ex-post regulatory result (+/-) for the terminal charging zone (see Note 1) | 1 874 | 11 663 | 13 537 | 6 564 | | |
| Revenue for the terminal charging zone | 94 537 | 106 056 | 200 593 | 97 371 | | |
| Ex-post regulatory result (+/-) in percent of revenues (see Note 1) | 2.0% | 11.0% | 6.7% | 6.7% | | |
| Ex-post RoE pre-tax rate (in %) | 2.8% | 26.9% | 12.3% | 14.6% | | |

13. Focus on main ANSP regulatory result on terminal activity



Skyguide net gain on activity in the Switzerland terminal charging zone in the year 2022

Skyguide reported a net gain of +3.6 MCHF, as a combination of a gain of +7.0 MCHF arising from the cost sharing mechanism, with a loss of -3.4 MCHF arising from the traffic risk sharing mechanism.

Skyguide overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+3.6 MCHF) and the actual RoE (+3.0 MCHF) amounts to +6.6 MCHF (6.7% of the terminal revenues). The resulting ex-post rate of return on equity is 14.6%, which is higher than the 12.9% planned in the PP. See also **Note 1** above.

SWITZERLAND: Other terminal ANSPs/METSPs

Monitoring of terminal COST-EFFICIENCY for 2022

| 14. Other ANSP(s) / METSP(s) regulatory results for terminal activity | | | | | | |
|--|-------|-------|------------|-------|-------|-------|
| Switzerland-MET planned regulatory result (CHF '000) | 2020 | 2021 | 2020-2021D | 2022 | 2023 | 2024 |
| Ex-ante regulatory result (+/-) for the terminal charging zone | 0 | 0 | 0 | 0 | 0 | 0 |
| Revenue for the terminal charging zone | 4 554 | 4 554 | 9 108 | 4 824 | 4 824 | 4 824 |
| Ex-ante regulatory result (+/-) in percent of revenues | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Ex-ante RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | N/A | N/A |
| Switzerland-MET actual regulatory result (CHF '000) | 2020 | 2021 | 2020-2021A | 2022 | 2023 | 2024 |
| Ex-post regulatory result (+/-) for the terminal charging zone | 0 | 3 | 3 | 975 | | |
| Revenue for the terminal charging zone | 4 554 | 4 573 | 9 127 | 4 932 | | |
| Ex-post regulatory result (+/-) in percent of revenues | 0.0% | 0.1% | 0.0% | 19.8% | | |
| Ex-post RoE pre-tax rate (in %) | N/A | N/A | N/A | N/A | | |
| Total other ANSP overall regulatory result (RR) for the terminal activity | | | | | | |
| Ex-post, the overall RR for the other ANSP in the terminal charging zone for Switzerland (Switzerland-MET) corresponds to 19.8% of the terminal revenues. The RoE cannot be calculated for Switzerland MET, as it does not report equity. See also Note 1 in item 10. | | | | | | |

SWITZERLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2022

| 1. Monitoring of gate-to-gate ANS costs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|----------------|---------------|--------------|----------------|---------------|-------------|-----------------------|--------------|--------------|---------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|-----------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|------|------------|-----|-----|--------|-----|-----|
| Charging zones concerned: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route charging zone 1: Switzerland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal charging zone 1: Switzerland | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Switzerland: data from RP3 performance plan | | 2020D | 2021D | 2020-2021D | 2022D | 2023D | 2024D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 143 995 782 | 167 474 769 | 311 470 551 | 164 348 653 | 157 237 011 | 155 805 455 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 88 676 165 | 97 846 470 | 186 522 635 | 93 469 850 | 91 942 540 | 92 349 455 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 232 671 946 | 265 321 239 | 497 993 186 | 257 818 503 | 249 179 551 | 248 154 910 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 61.9% | 63.1% | 62.5% | 63.7% | 63.1% | 62.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Switzerland: actual data from reporting tables | | 2020A | 2021A | 2020-2021A | 2022A | 2023A | 2024A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real en route costs (€2017) | | 164 733 697 | 155 206 749 | 319 940 446 | 162 549 780 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real terminal costs (€2017) | | 88 676 165 | 89 675 878 | 178 352 043 | 85 429 146 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | 253 409 861 | 244 882 628 | 498 292 489 | 247 978 925 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share (%) | | 65.0% | 63.4% | 64.2% | 65.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Difference between actuals and planned (actuals vs. PP) | | 2020 | 2021 | 2020-2021 | 2022 | 2023 | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Real gate-to-gate costs (€2017) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in value | | 20 737 915 | -20 438 612 | 299 303 | -9 839 578 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in % | | 8.9% | -7.7% | 0.1% | -3.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| En route share | | 3.1 p.p. | 0.3 p.p. | 1.7 p.p. | 1.8 p.p. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Share of en route and terminal in gate-to-gate actual costs (2022) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <caption>Share of en route and terminal in gate-to-gate actual costs (2022)</caption> <thead> <tr> <th>Year</th> <th>Type</th> <th>En route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2020</td> <td>Determined</td> <td>62%</td> <td>38%</td> </tr> <tr> <td>Actual</td> <td>65%</td> <td>35%</td> </tr> <tr> <td rowspan="2">2021</td> <td>Determined</td> <td>63%</td> <td>37%</td> </tr> <tr> <td>Actual</td> <td>63%</td> <td>37%</td> </tr> <tr> <td rowspan="2">2020-2021</td> <td>Determined</td> <td>63%</td> <td>37%</td> </tr> <tr> <td>Actual</td> <td>64%</td> <td>36%</td> </tr> <tr> <td rowspan="2">2022</td> <td>Determined</td> <td>64%</td> <td>36%</td> </tr> <tr> <td>Actual</td> <td>66%</td> <td>34%</td> </tr> <tr> <td rowspan="2">2023</td> <td>Determined</td> <td>63%</td> <td>37%</td> </tr> <tr> <td>Actual</td> <td>63%</td> <td>37%</td> </tr> <tr> <td rowspan="2">2024</td> <td>Determined</td> <td>63%</td> <td>37%</td> </tr> <tr> <td>Actual</td> <td>63%</td> <td>37%</td> </tr> </tbody> </table> | | | | | | | Year | Type | En route (%) | Terminal (%) | 2020 | Determined | 62% | 38% | Actual | 65% | 35% | 2021 | Determined | 63% | 37% | Actual | 63% | 37% | 2020-2021 | Determined | 63% | 37% | Actual | 64% | 36% | 2022 | Determined | 64% | 36% | Actual | 66% | 34% | 2023 | Determined | 63% | 37% | Actual | 63% | 37% | 2024 | Determined | 63% | 37% | Actual | 63% | 37% |
| Year | Type | En route (%) | Terminal (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | Determined | 62% | 38% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 65% | 35% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | Determined | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020-2021 | Determined | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 64% | 36% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | Determined | 64% | 36% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 66% | 34% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | Determined | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | Determined | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Actual | 63% | 37% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>In the year 2022, actual gate-to-gate ANS costs are -3.8% (-9.8 M€2017) lower than planned, as en route costs are lower than planned by -1.8 M€2017 and terminal costs are lower than planned by -8.0 M€2017.</p> <p>The actual share of en route in gate-to-gate ANS costs (65.5%) is higher than planned in the PP for 2022 (63.7%).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Gate-to-gate regulatory result (RR) 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In CHF '000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Ex-ante | | Ex-post | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANSP(S) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Skyguide | 6 112 | 263 128 | 2.3% | 5 568 | 257 622 | 2.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METSP(s) | RR | Revenues | RR % revenues | RR | Revenues | RR % revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Switzerland MET | 0 | 13 800 | 0.0% | 736 | 14 169 | 5.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 6 112 | 276 928 | 2.2% | 6 304 | 271 791 | 2.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>For the ANSPs providing services in the en route and terminal charging zones of Switzerland covered by the SES performance scheme, the ex-post gate-to-gate regulatory result in 2022 amounts to +6.3 MCHF (-1.2 MCHF for en route and +7.5 MCHF for terminal - see boxes 10 to 14 for the detailed analysis at charging zones level), corresponding to 2.3% of gate-to-gate ANS revenues.</p> <p>This is higher than the return planned for the year (2.2% of gate-to-gate revenues). See also Note 1 in items 10.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Switzerland gate-to-gate 2022 regulatory result in % of revenues</p> <table border="1"> <caption>Switzerland gate-to-gate 2022 regulatory result in % of revenues</caption> <thead> <tr> <th>Result Type</th> <th>Regulatory Result (%)</th> </tr> </thead> <tbody> <tr> <td>Ex-ante</td> <td>2.2%</td> </tr> <tr> <td>Ex-post</td> <td>2.3%</td> </tr> </tbody> </table> | | | | | | | Result Type | Regulatory Result (%) | Ex-ante | 2.2% | Ex-post | 2.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Type | Regulatory Result (%) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-ante | 2.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex-post | 2.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |