

PRB assessment of the second revision of the draft performance plans for RP3

Annex I – FAB / Member States assessment factbooks

October 2022

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1 INTRODUCTION TO THIS DOCUMENT

- 1 This document describes the methodology followed in the different sections of the factbooks developed by the Performance Review Body (PRB) to assess the revised draft performance plans (hereafter performance plans) as required by Annex IV of Commission Implementing Regulation (EU) 2019/317, hereafter referred to as "the Regulation".
- 2 The sections of the factbooks and the assessment approach are based on the assessment of the draft RP3 performance plans by the PRB in 2020 and have been updated following the implementation of the exceptional measures Regulation.¹
- 3 The aim of this document is to explain how the tool used is organised and what information, figures and tables are shown in each factbook.

1.1 Presentation conventions

- 4 Use and interpretation of check marks (ticks, crosses, warning symbols):

	The check is passed, or the answer to the question is yes, or the result is in the range of expected values, or there is no particular issue to be mentioned.
	The check is not passed, or the answer to the question is no.
	Face value, the check is passed, but possibly due to the use of assumptions that do not seem adequate, or the result is outside the range of expected values.
n/a	The section, the answer or the specific analysis is not applicable since it is not relevant in the specific draft performance plan.

- 5 Grey text boxes are text areas including factual analysis developed by the PRB and Eurocontrol.
Green text boxes are text areas that summarise the PRB conclusions/recommendations. Finally, texts in quotation marks (“ ”) indicate direct quotes from the performance plans.

¹ Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020 on exceptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic.

1.2 Section contents

6 The following table gives a summary of the content to be found in each KPA, and where to find it.

1. Safety	
<p>1.1 Summary of safety key data and assessment results</p> <p>1.1.1 Target for EoSM for ANSPs</p> <p>1.1.2 Measures planned to reach the target</p> <p>1.1.3 Interdependencies and trade-offs</p> <p>1.1.4 Change management</p> <p>1.1.5 PRB conclusions</p>	<ul style="list-style-type: none"> • A summary of key data related to the safety KPA. In particular, it presents: <ul style="list-style-type: none"> ○ The EoSM targets set at the level of the ANSPs. ○ The measures undertaken by Member States and ANSPs in order to achieve the targets. ○ The approach taken by ANSPs and a Member States to address the interdependencies between safety and other KPAs. ○ The description of Change management procedures and transition plans.
<p>1.2 Target for EoSM for ANSPs and measures</p> <p>1.2.1 Target for EoSM for ANSPs and associated measures</p> <p>1.3 Interdependencies and trade-offs</p> <p>1.3.1 Interdependencies and trade-offs</p> <p>1.3.2 Change management practices</p>	<ul style="list-style-type: none"> • The EoSM targets for each management objective for each year of RP3.
2. Environment	
<p>2.1 Summary of environment key data and assessment results</p> <p>2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets</p> <p>2.1.2 PRB conclusions</p>	<ul style="list-style-type: none"> • A summary of key data related to the environment KPA. It presents: <ul style="list-style-type: none"> ○ Comparison of ERNIP reference values and performance plan targets and an overview of the Union-wide targets. ○ The measures undertaken by Member State and ANSP in order to achieve the targets, including: <ul style="list-style-type: none"> ➤ Details of MS's commitment to FRA by 2022; ➤ Major ERNIP recommended measures committed to or implemented; ➤ Status of FUA implementation according to latest LLSIP.
<p>2.2 Measures of achievement</p> <p>2.2.1 Annex IV 2.1(a): Measures of achievement</p> <p>2.2.2 Annex IV 2.1(f): Incentive schemes</p>	<ul style="list-style-type: none"> • A summary of key data related to the measures committed to in the performance plan, enabling the MS to achieve their targets.
3. Capacity	
<p>3.1 Summary of capacity key data and assessment results</p> <p>3.1.1 En route ATFM delay</p> <p>3.1.2 Arrival AFTM delay</p> <p>3.1.3 Incentives</p> <p>3.1.4 Investments</p> <p>3.1.5 PRB conclusions</p>	<ul style="list-style-type: none"> • A summary of key data and insights related to the capacity KPA.
<p>3.2 En route ATFM delay per flight</p> <p>3.2.1 Overview of en route ATFM delay per flight</p>	<ul style="list-style-type: none"> • A review of the measures and data related to the en route ATFM delay per flight.

<p>3.2.2 Review of planned capacity enhancement measures</p> <p>3.2.3 Review of previous and existing capacity profile plans per ACC</p> <p>3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant/special events</p> <p>3.2.5 Review of the measures to increase capacity and address capacity gaps</p> <p>3.2.6 PRB Key Points</p>	<ul style="list-style-type: none"> • 3.2.4 and 3.2.5 are only filled in if relevant based on the performance plan.
<p>3.3 Arrival ATFM delay per flight</p> <p>3.3.1 Overview of arrival ATFM delay per flight</p> <p>3.3.2 Review of targets and comparison with level and trend of past performance during RP2</p> <p>3.3.3 Contribution of individual airports to the national target</p> <p>3.3.4 Comparison of performance with other similar airports</p> <p>3.3.5 PRB Key Points</p>	<ul style="list-style-type: none"> • A review of the measures and data related to the arrival ATFM delay per flight.
<p>3.4 Capacity Incentive schemes</p> <p>3.4.1 En route capacity incentive scheme</p> <p>3.4.2 Terminal capacity incentive scheme</p> <p>3.4.3 Additional capacity incentive scheme</p> <p>3.4.4 PRB Key Points</p>	<ul style="list-style-type: none"> • A summary of the en route, terminal, and additional incentive schemes.
<p>3.5 Investments</p> <p>3.5.1 Determined costs of investments over RP3</p> <p>3.5.2 Major investments and justifications for major investments</p> <p>3.5.2.1 New major investments per ANSP (i.e. above 5M€) – Main ANSP</p> <p>3.5.2.2 Justification for major investments (i.e. above 5M€), which are not required by SES legislation</p> <p>3.5.2.3 Other new and existing investments</p> <p>3.5.3 Review of investments contribution to capacity</p> <p>3.5.4 PRB Key Points</p>	<ul style="list-style-type: none"> • Analyses on how the new and existing investments affect the determined costs, the list of new major investments for the main ANSP and a review of how investments contribute to the capacity target.
4. Cost-efficiency	
<p>4.1 Summary of cost-efficiency key data and assessment results</p> <p>4.1.1 Key data underlying en route cost-efficiency targets</p> <p>4.1.2 Summary of baseline review</p> <p>4.1.3 Summary of cost-efficiency assessment results</p> <p>4.1.4 PRB conclusions</p>	<ul style="list-style-type: none"> • Summary of the key cost-efficiency data from the performance plan, the assessment results on the five criteria listed in Annex IV of the Regulation and the conclusions of the PRB.
<p>4.2 Review traffic forecasts and baseline</p> <p>4.2.1 Overview of service units forecasts for RP3</p> <p>4.2.2 Traffic baseline review</p> <p>4.2.3 Review of the PP traffic forecast</p> <p>4.2.4 PRB Key Points</p>	<ul style="list-style-type: none"> • An analysis of en route traffic forecast (expressed in service units) underpinning the calculation of the DUC, both for the 2019 baseline and the whole RP3 period.

<p>4.3 Review of determined costs and baseline</p> <p>4.3.1 Overview of en route costs in RP2 and RP3</p> <p>4.3.2 Baseline review</p> <p>4.3.3 Review of the RP3 determined costs and incentives</p> <p>4.3.4 PRB Key Points</p>	<ul style="list-style-type: none"> • A review of the determined costs, their components and their evolution in RP3 as well as a review of the 2014 and 2019 cost baselines submitted in the performance plan.
<p>4.3.A Cost of capital</p> <p>4.3.A.1 Determined Costs vs Return on Equity</p> <p>4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure</p> <p>4.3.A.3 WACC review</p> <p>4.3.A.4 Regulated Asset Base review</p> <p>4.3.A.5 PRB Key Points</p>	<ul style="list-style-type: none"> • An analysis of the cost of capital for the major ANSP as submitted by the Member States.
<p>4.3.B Pensions</p> <p>4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)</p> <p>4.3.B.2 Reporting exceptions and planned changes in assumptions</p> <p>4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions</p> <p>4.3.B.4 PRB Key Points</p>	<ul style="list-style-type: none"> • An analysis of the pension information as submitted by the Member States.
<p>4.3.C Method for cost allocation between ER and TRM</p> <p>4.3.C.1 Cost allocation overview</p> <p>4.3.C.2 Review of changes to cost allocation</p> <p>4.3.C.3 PRB Key Points</p>	<ul style="list-style-type: none"> • A review of the methods given for en route/terminal cost allocation.
<p>4.4 Determined unit costs (DUC)</p> <p>4.4.1 Overview and trends of the DUC</p> <p>4.4.2 DUC consistency</p> <p>4.4.3 Analysis of the DUC deviation for achieving the capacity targets</p> <p>4.4.4 Analysis of the DUC deviation due to restructuring costs</p> <p>4.4.5 PRB Key Points</p>	<ul style="list-style-type: none"> • An overview of DUC trends and perform the cost-efficiency target assessment following the five criteria listed in Annex IV of the Regulation.
<p>4.5 Terminal</p> <p>4.5.1 Overview and trends of the terminal DUC</p> <p>4.5.2 Comparison of performance with similar airports</p> <p>4.5.3 Elements subject to review</p> <p>4.5.4 PRB Key Points</p>	<ul style="list-style-type: none"> • An overview of terminal costs, traffic and DUC trends.

PRB Assessment

CYPRUS

Draft Performance Plan

Context and scope

Cyprus

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F5793, F5794, F5796, F5800, F5802, F6462, F6463, F6464, F6465, F6466

Relative weight compared to the SES area (2019):
 % Flight-hours vs SES 1.3%
 % Serv. Units vs SES 1.6%
 % Costs vs SES 0.7%

Scope

FAB: BLUE MED FAB

ANSPs: DCAC Cyprus
 Department of Meteorology of the Ministry of Agriculture and Natural resources of the republic of Cyprus.

ATS/CNS*/AIS
 MET

Other entities (as per Article 1(2) last para. of Regulation 2019/317): National Supervisory Authority
 Search and rescue service

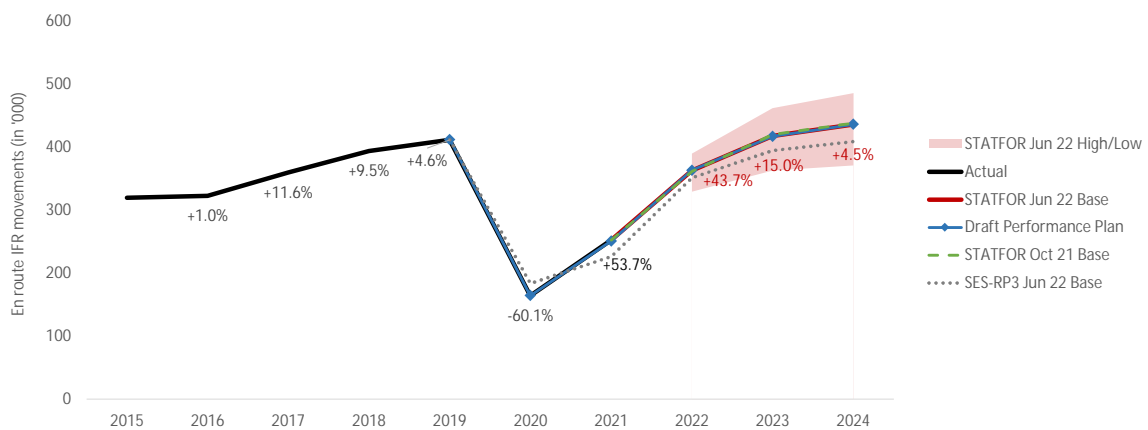
ANS oversight
 SAR

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Cyprus	n/a	No	No	No	
Terminal (TRM)	n/a	0	n/a	n/a	n/a	
Changes in the CZs from RP2		Yes				
No terminal charging zone has been included in the RP3 performance plan.						

Comparator group: Group D Other States in the comparator group: Estonia, Greece, Latvia, Lithuania, Malta

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
CYATS	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Cyprus should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	4.10%	3.84%	3.84%	3.84%	3.84%
<i>Previous submitted PP</i>	4.10%	3.84%	3.84%	3.84%	3.84%

PRB assessment

The PRB concludes that the environment targets proposed by Cyprus should be approved.

- Cyprus's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Cyprus did not achieve the 2021 target of 3.84% in its performance plan.
- Due to insufficient environmental performance in past years and lack of adoption of H24 free route airspace before 2025, Cyprus remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for <u>en route</u> ATFM delay per flight (min)	1.00	0.10	0.16	0.15	0.15
National target for <u>terminal</u> and airport ANS ATFM arrival delay per flight (min)	n/a	n/a	n/a	n/a	n/a
<i>Previous submitted PP (en route)</i>	1.00	0.10	0.30	0.40	0.30
<i>Previous submitted PP (terminal)</i>	n/a	n/a	n/a	n/a	n/a

PRB assessment

The PRB concludes that the capacity targets proposed by Cyprus should be approved.

- Cyprus may experience a minor capacity gap in 2023 and 2024 without implementing additional capacity enhancement measures.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined cost of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

4. Cost-efficiency



Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	49.85	30.92	29.35	29.11	+2.3%	-1.4%
Target for determined unit cost (DUC) (€2017) - Terminal	n/a	n/a	n/a	n/a	n/a	n/a
<i>Previous submitted PP (en route)</i>	49.85	34.14	32.52	32.26	+4.9%	-0.2%
<i>Previous submitted PP (terminal)</i>	n/a	n/a	n/a	n/a	n/a	n/a

PRB assessment

The PRB concludes that the cost-efficiency targets proposed by Cyprus should be approved.

- Cyprus is not consistent with the RP3 DUC trend in terms of average reduction.
- Cyprus is consistent with the long-term Union-wide DUC trend.
- Cyprus is consistent with the average DUC baseline of the comparator group.
- Cyprus presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

5. PRB recommendations

CAPACITY:

- Cyprus should revise the incentive scheme so that it has a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

SAFETY

- Cyprus should define explicit measures to improve maturity levels over RP3 to specifically address Safety Risk Management area.
- Cyprus should include additional NSA derived measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

ENVIRONMENT

- Cyprus should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Cyprus should revise the performance plan, introduce additional measures if necessary and set more ambitious en route ATFM delay targets to achieve consistency with Union-wide targets in each calendar year of RP3.
- Cyprus should address the capacity gap projected in their capacity plans by implementing structural enablers and current plans in a timely manner, as well as by developing additional capacity enhancement measures to align to the reference values.
- Cyprus should revise the incentive scheme so that no bonuses are incurred by the ANSP while delay performance is worse than the national reference values.

COST-EFFICIENCY

- Cyprus should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Cyprus should consider in the RP3 cost base the 19.3M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.

CYPRUS

Safety KPA

1.1 Summary of safety key data and assessment results

Cyprus

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained at the beginning of RP3.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan lists measures in the area of safety culture, policy and objectives, risk management and assurance and safety promotion. The measures are considered relevant to improve safety maturity levels over RP3. Additionally, the NSA provides the measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

1.1.3 Interdependencies and Trade-offs

The performance plan indicates that the interdependencies of safety and other KPAs during the implementation of the change to the ATM functional system are mitigated in accordance with the usual risk management practices, which are documented in the ANSP's safety management system. It is considered that the approach is appropriate to ensure that safety will not be compromised during the implementation of the changes.

1.1.4 Change Management

The performance plan claims that Cyprus ANSP revised its change management processes to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Cyprus should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

1.2 Targets for EoSM for ANSPs and Measures

Cyprus

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actuals	Actuals	Target	Target	Target	Target	Target		
DCAC	Safety policy and objectives	B	B	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	C	D	D	D	D	D	✓	
	Safety assurance	B	B	C	C	C	C	C	✓	
	Safety promotion	B	B	C	C	C	C	C	✓	
	Safety culture	B	B	C	C	C	C	C	✓	

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, and were planned to be attained at the beginning of RP3. DCAC started RP3 with maturity levels that are lower than the RP3 targets and needs to improve in five management objectives.

The performance plan describes various measures such as safety culture survey and awareness campaign, increasing staff and resources to improve the safety policy and the SMS procedures, development of the policies and procedures for the management of Human Factors' Risks.

In close cooperation with the NSA, the ANSP plans to revise the current change management procedure in accordance with Commission Implementing Regulation (EU) 2017/373. Moreover, Cyprus has recently adopted its 2020-2024 State Safety Program with clear commitment to the effective safety oversight of ANSPs (including relevant KPIs and safety targets).

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan indicates that the interdependencies between safety and other KPAs during the implementation of the change to the ATM functional system are mitigated in accordance with the usual risk management practices, which are documented in the ANSP's safety management system. The performance plan states that "Safety will always have the highest priority", thus the trade-off against other KPAs are not allowed. Additionally, the NSA monitors through regular audits and inspections that the safety levels are not degraded during the implementation of the major changes.

1.3.2 Change Management Practices

Cyprus plans to implement one major investment during RP3 (the installation of a new ATM system in a new ACC location). The performance plan claims that Cyprus ANSP revised its change management processes to ensure compliance with Commission Implementing Regulation (EU) 2017/373 and consequently to assure effectively manage the risks associated with significant functional system changes necessary to improve the level of services within RP3.

CYPRUS

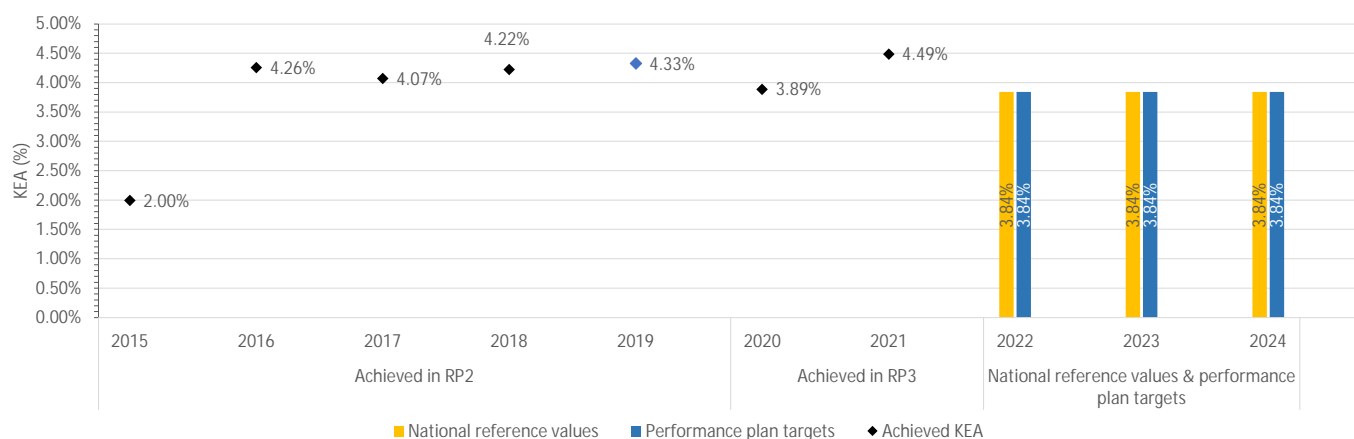
Environment KPA

2.1 Summary of Key Data and Assessment Results

Cyprus

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	4.10%	3.84%	3.84%	3.84%	3.84%
Performance plan targets	4.10%	3.84%	3.84%	3.84%	3.84%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Cyprus should be approved.

- Cyprus' horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Cyprus did not achieve the 2021 target of 3.84% in its performance plan.
- Due to insufficient environmental performance in past years and lack of adoption of H24 free route airspace before 2025, Cyprus remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

2.2 Measures of Achievement

Cyprus

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
According to the LSSIP, Cyprus plans to offer free route airspace (FRA) in 2022.		3.2.1	Page 49
Major 2021 ERNIP Recommended Measures:	4	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1	Page 196
NICFRA	✓	Annex P	Page 211
PBN transition plan	✓	Annex P	Page 127
SPICE – Phase 1	✓	Annex P	Page 138
SPICE – Phase 2	✓		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

Cyprus aims to, in cooperation with the Network Manager (NM), constantly revise its route network, in an effort to offer the most environmentally friendly and cost-efficient routings. No reference was made to achieving the ERNIP Part 2 projects or (FRA) implementation plans.

The chart in section 2.1.1 shows that Cyprus achieved a KEA of 3.89% in 2020. In 2021, Cyprus reached a KEA of 4.49% which means it did not achieve the 2021 target of 3.84% in its performance plan.

Cyprus did not provide any indication as to why performance has degraded, however commitment to the PBN transition plan, the implementation of SPICE, and the commitment to NICFRA (aiming to offer free route airspace between FL205 and FL660) provide context as to how Cyprus plans to achieve targets in the future.

The PRB expects FRA to be key in improving environmental performance in Cyprus. However, the performance plan does commit to FRA, NICFRA phase 2 (FRA on a 24-hour basis) will be not be introduced until 2025, making Cyprus one of the latest adopters in the SES.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Cyprus plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

CYPRUS

Capacity KPA

3.1 Summary of capacity key data and assessment results

3.1.1 En route ATFM delay

The proposed national capacity targets are equal to the national reference values and are lower than the range of the delay forecast for 2023-2024. Cyprus may experience a minor capacity gap in 2023-2024 without implementing additional capacity improvement measures.

The implementation of the new ATM system may introduce capacity constraints in 2024. The performance plan does not provide detailed mitigation measures to reduce such potential effects.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

n/a

3.1.3 Incentives

En route:

The Maximum bonus and penalty is set at 0.5% of determined costs.

There are no modulations of the pivot values which are set equal to the proposed national capacity targets, significantly higher than the reference values.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal: not applicable.

3.1.4 Investments

The actual CAPEX for RP2 was 43% of the planned for the same period and the amount underspent was 7.5M€. The airspace users have financed 19M€ for investments that have not been materialised. In the airspace users consultation, Cyprus noted that some alleviations have been made to the terminal cost base through State funding to reflect the RP2 underinvestment. Airspace users asked for further clarifications since for now it is not traceable.

A capacity shortage is expected in Cyprus during RP3.

There are capacity enhancing investments planned for RP3 linked to PCP/CP1 ATM Functionality AF6, but they do not result in sufficient capacity increase by the end of RP3. Other investments contribute mainly to resilience.

3.1.5 PRB conclusions

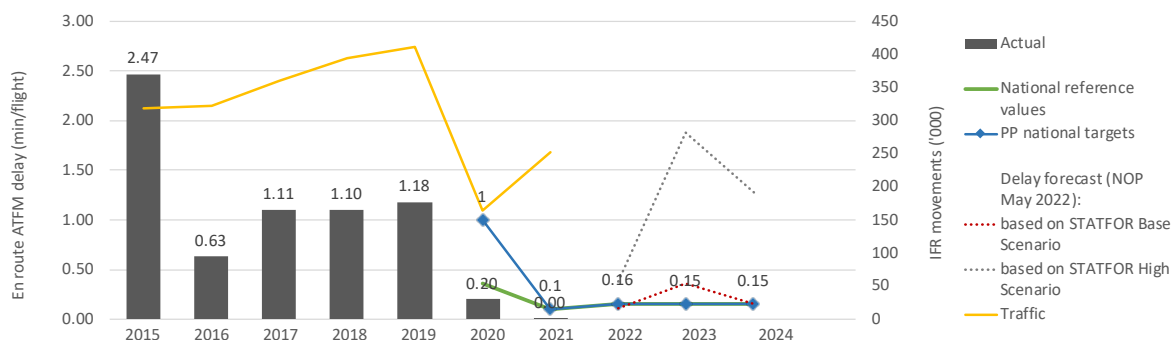


The PRB concludes that the capacity targets proposed by Cyprus should be approved.

- Cyprus may experience a minor capacity gap in 2023 and 2024 without implementing additional capacity enhancement measures.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined cost of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.
- Cyprus should revise the incentive scheme so that it has a material impact on the revenues.

3.2 En route ATFM delay per flight

3.2.1 Overview of en route ATFM delay per flight



Traffic variation	+5%	+1.0%	+11.6%	+9.5%	+4.5%	-60.1%	+53.7%			
Actual delay/flight	2.47	0.63	1.11	1.10	1.18	0.20	0.10	0.16	0.15	0.15
National reference values						0.36	0.10	0.16	0.15	0.15
PP national targets						1.00	0.10	0.16	0.15	0.15
Delay forecast*:										
Based on STATFOR High Scenario						-	0.38	1.88	1.28	
Based on STATFOR Base Scenario						-	0.11	0.36	0.16	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.2.2 Review of planned capacity enhancement measures

Assessment of capacity enhancement measures and review against NOP

During RP2, Cyprus experienced capacity constraints related mostly to ATM capacity, staffing issues, and ASM, mostly achieving the local capacity targets and positively contributing to the FAB-level targets. ATM capacity and ASM issues were linked in many cases to exogenous factors associated with the geo-political situation in the region. The staffing levels showed worsening trend negatively affecting the capacity performance.

The performance plan contains the following capacity enhancement measures:

- Enhancement of ATSp staffing levels (management + ATCOs) via a continuous recruitment process,
- Upgrading of necessary ATM infrastructure (2022-2024) with new HMI and functionalities in 2024,
- Implementation of an operational excellence project with NM assistance and additional airspace restructuring activities (e.g. FRA),
- Improvement of air traffic flow and capacity management techniques, and
- Institutional changes (ATSP corporatisation) identified in the performance plan submitted in November 2021 is not addressed or detailed in the revised plan. Cyprus expects new revision of the plan as soon as the cost for the move will be known.

The NOP provides a list of capacity measures to cover the capacity gaps, some of which are difficult to identify in the performance plan due to the low level of details. It is however believed that measures are covered by the above mentioned capacity enhancements.

The number of ATCO FTEs is planned to increase by 22 FTEs (28% increase compared to 2019) over 2020-2024. This performance plan is consistent with the performance plan submitted in November 2021.

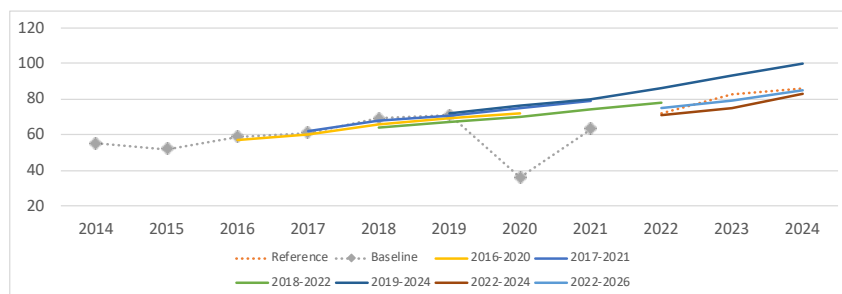
Despite the planned measures, the NOP expects Cyprus to generate delays in 2023 and 2024 regardless the STATFOR forecast scenario.

ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Nicosia ACC (LCCC)	Additional ATCOs in OPS to start working in the OPS room	0	0	0	8	11	10	8	+22
	ATCOs in OPS to stop working in the OPS room	0	3	5	3	2	3	2	
	ATCOs in OPS to be operational at year-end	81	78	73	78	87	94	100	
Total - DCAC Cyprus (en route)	Additional ATCOs in OPS to start working in the OPS room	0	0	0	8	11	10	8	+22
	ATCOs in OPS to stop working in the OPS room	0	3	5	3	2	3	2	
	ATCOs in OPS to be operational at year-end	81	78	73	78	87	94	100	

3.2.3 Review of previous and existing capacity profile plans per ACC

Nicosia ACC (LCCC)



- Historical data shows that the baseline values have increased by an average of 5.5 % over RP2, also including a drop in 2015 and an increase of over 13% in 2016 and 2018. The planned values closely oscillated around the baseline showing effort to adapt operational experience from the previous year in order to achieve local capacity targets, except for 2015.

- The latest planned profile shows an average annual growth of 6.5% over 2022-2024. This results in a surplus of 4% in 2022, a capacity gap of -5% in 2023, and a minor capacity gap of -1% in 2024.

- The planned increase in ATCO FTEs corresponds to the planned increase in capacity profiles. It is not clear how other capacity enhancement measures will contribute to capacity improvements.

- The performance plan already foresees difficulty to achieve targets during 2023 and 2024 if traffic levels grow according the STATFOR high traffic forecast.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									72	83	86
Baseline	55	52	59	61	69	71	36	63			
2016-2020			57	60	66	69	72				
2017-2021				62	68	71	75	79			
2018-2022					64	67	70	74	78		
2019-2024						72	76	80	86	93	100
2022-2024									71	75	83
2022-2026									75	79	85
Latest vs Reference									4%	-5%	-1%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

Review of the planned impact of special events in some years of RP3

Both the performance plan and the NOP identify the new ATM system and the transition to the new ACC centre as a special event, which may influence capacity provision. The performance plan does not provide quantitative evaluation of the capacity impact.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

The performance plan does not provide details on mitigating measures

3.2.5 Review of the measures to increase capacity and address capacity gaps

a)	Performance plan contains additional measures compared to the NOP in order to close the capacity gap? There are no additional measures included in the performance plan compared to those included in the NOP.	✓
b)	Measures proposed by the NM to enhance capacity are planned and described in the performance plan? Measures proposed by the NM are included in the plan although with low level of details.	!
c)	The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? n/a	n/a
d)	The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? There is no information in the performance plan about measures proposed by the NSA.	✗
e)	Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? Staffing plans address the capacity gap closure, although it is not clear if these are sufficient to close the gap.	!
f)	The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? The performance plan provides only high-level description and references practices of ATCOs working approx. 20% overtime.	!
g)	The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? The performance plan does not indicate the limitations of the current ATM system directly, however, it describes the investment in the new ATM system and relocation of the ACC center as one of the main capacity enhancement contributing measures.	✓

3.2.6 PRB Key Points

- The proposed national capacity targets are equal to the national reference values and are lower than the range of the delay forecast for 2023 - 2024.
- Cyprus may experience a minor capacity gap in 2023-2024 without implementing additional capacity improvement measures.
- The implementation of the new ATM system may introduce capacity constraints in 2024. The performance plan does not provide detailed mitigation measures to reduce such potential effects.

3.3. Arrival ATFM delay per flight - not applicable

Cyprus

3.4 Capacity Incentive schemes

Cyprus

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.02 min	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
NOP reference values			0.16	0.15	0.15
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.16	0.15	0.15
Pivot values for RP3			0.16	0.15	0.15

Threshold and pivot value review

The pivot value is fixed for each year of the reference period. The pivot value is set at the NOP reference value. The threshold is symmetric around the pivot value.

Modulation review

No modulation is applicable.

Review of financial advantages/disadvantages

A maximum bonus of 0.5% of revenue is applicable and countered with a reduced maximum penalty of 0.5% (1% previously but from a much higher target).

3.4.2 Terminal capacity incentive scheme

n/a

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

- The maximum bonus and penalty is set at 0.5% of determined costs.
- There are no modulations of the pivot values which are set equal to the proposed national capacity targets, significantly higher than the reference values.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.5 Investments

Cyprus - DCAC Cyprus

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total	
Total determined costs of investments*	M€ (nominal)	2.4	2.4	4.2	5.7	6.3	20.9	
	En route	M€ (nominal)	2.4	2.4	4.2	5.7	6.3	20.9
	Terminal	M€ (nominal)	0.0	0.0	0.0	0.0	0.0	0.0

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	NEW ATM SYSTEM - PHASE 1	A new ATM system, comprising both hardware and software components, to enable the operation of at least 10 ATC sectors at Nicosia ACC. During Phase 1, the new software will be installed in the backup system so as to test its robustness. The service will be provided at the existing ACC. Some of the new software functionalities will be installed also in the main system.	6.1	Yes	No	3.1	0.0
2	NEW ATM SYSTEM - PHASE 2	A new ATM system, comprising both hardware and software components, to enable the operation of at least 10 ATC sectors at Nicosia ACC. During Phase 2, the new software will be installed in both the main and the backup systems. New hardware will be installed and the service will be provided at the new ACC. Shadow mode operations are planned during the transition from the old to the new ACC. Additional ATC sectors will be available at the new Centre.	5.2	Yes	Yes	1.9	0.0
Total:						5.0	0.0

Airspace user feedback regarding major investments

In 2021, the airspace users commented that they do not have sufficient information to assess the investment plans and expressed their concerns that the investments may include costs which may rather belong to the terminal part.

The airspace users also inquired about the inclusion of costs associated with terminal in the performance plan, specifically for the inclusion of ILS replacement. Cyprus noted that the numerical calculations included in the performance plan do not include any costs associated with terminal projects and invited the airspace users to a bilateral meeting to discuss further details of the investment plans.

In 2022, airspace users reiterated concerns about insufficient information to assess the investment plans. A bilateral meeting to discuss further details of the investment plans will take place.

Review of investments

New major investments represent 24% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 43% of the planned for the same period and the amount underspent was 7.5M€. In terms of depreciation and cost of capital, the airspace users have financed 19M€ for investments that have not been materialised. Cyprus noted in Annex T of the performance plan that they decided to not charge terminal costs to airspace users flying to and from Cyprus, the associated costs represent approximately 50M€. Cyprus noted that it should be considered as an indirect reimbursement to airspace users for the RP2 underspending.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	40.3	35.8	0.2	0.6	1.8	2.9	3.6	9.0
Existing investments			2.1	1.4	1.2	1.1	1.0	6.9

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	ESSENTIAL INFRASTRUCTURE WORKS at the new ACC	3.1	3.1	0.0	0.1	0.3	0.3	0.3	1.1	These are costs associated with the installation of appropriate electrical and data networks necessary for the new ACC to commence operations.
2	SURVEILLANCE (RADAR) INFRASTRUCTURE UPGRADES	4.6	4.6	0.0	0.0	0.2	0.8	0.8	1.8	These are costs associated mainly with the replacement of end-of-life systems.

3.5.3 Review of investments contribution to capacity

- a) Investments contribute to the rectification of identified capacity shortfalls? 🔍
- Nicosia ACC is expected to have a capacity surplus of 4% in 2022 but a capacity gap is expected for the remainder of RP3 with -5% in 2023 and -1% in 2024.
- There are two major investments planned for RP3 in Cyprus, New ATM system phase 1 and New ATM system Phase 2 investments, which are linked to PCP/CP1 ATM Functionality AF6. While the Cyprus performance plan notes that both phases contribute to capacity enhancement, it can be argued that as phase 1 system is installed in back-up facility only with services being provided by the current ATM system, the capacity benefits do not materialise until phase 2 in 2023 when services are being delivered with the new system.
- The other (non-major) investments (network upgrades, building works and surveillance end-of-life replacement) contribute mainly to resilience. Links with PCP/CP1 ATM Functionalities are not defined for the other (non-major) investments.
- b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP? ✅
- The new ATM system phases 1 and 2 will enable operating more ATC sectors and introduce new advanced features such as datalink and trajectory information sharing in line with the European ATM evolution.
- c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? 🔍
- The new ATM system will not be installed and deployed in time, or does not provide sufficient capabilities, to generate sufficient benefits to avoid slight capacity shortfalls during the last two years of RP3. It should also be noted that the information provided by Cyprus concerning the new ATM system is somewhat contradictory: in LSSIP Cyprus 2021 it is noted that a replacement of the system is "*not planned as system was installed in 2013*".

3.5.4 PRB Key Points

- The actual CAPEX for RP2 was 43% of the planned for the same period and the amount underspent was 7.5M€. The airspace users have financed 19M€ for investments that have not been materialised. Cyprus noted in Annex T of the performance plan that they decided to not charge terminal costs to airspace users flying to and from Cyprus, the associated costs represent approximately 50M€. Cyprus noted that it should be considered as an indirect reimbursement to airspace users for the RP2 underspending.
- A capacity shortage is expected in Cyprus during RP3.
- There are capacity enhancing investments planned for RP3 linked to PCP/CP1 ATM Functionality AF6, but they do not result in sufficient capacity increase by the end of RP3.
- Other investments contribute mainly to resilience.

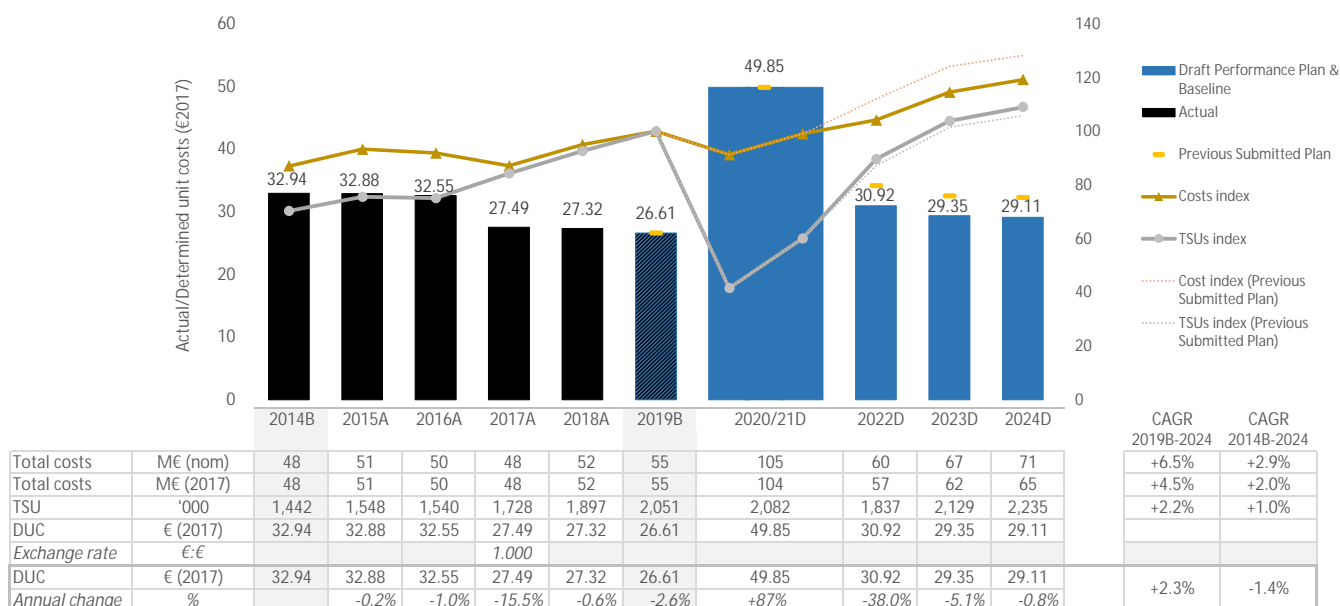
CYPRUS

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Cyprus - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



4.1.2 Summary of baseline review

DUC 2019 baseline consistent with <u>actual unit costs</u> or deviation adequately justified?	26.61 €2017	✓
No major issues identified.		

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	+2.3%	✗
The DUC is planned to increase on average by +2.3% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	-1.4%	✓
The DUC is planned to decrease on average by -1.4% between 2014 and 2024, which is slightly better than the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (D) average (27.91 €2017)?	-4.7%	✓
The 2019 DUC level is -4.7% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

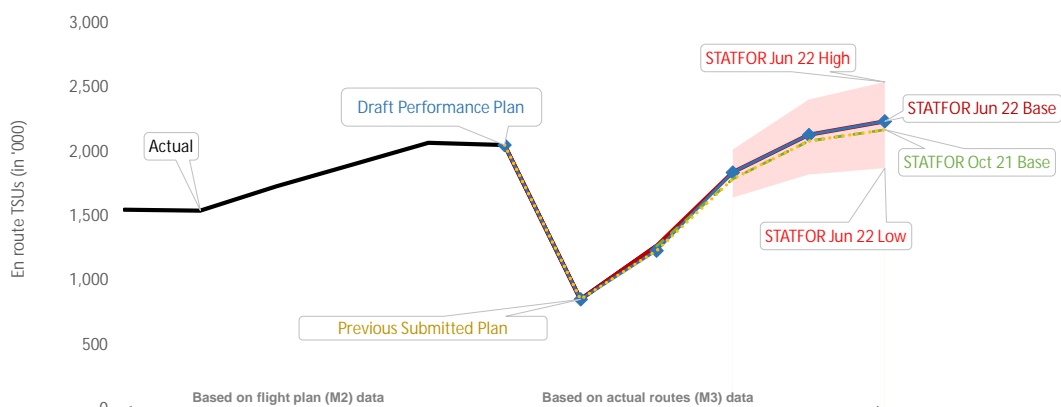
The PRB concludes that the cost-efficiency targets proposed by Cyprus should be approved.

- Cyprus is not consistent with the RP3 DUC trend in terms of average reduction.
- Cyprus is consistent with the long-term Union-wide DUC trend.
- Cyprus is consistent with the average DUC baseline of the comparator group.
- Cyprus presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.2 Review traffic forecasts and baseline

Cyprus - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	1,548	1,540	1,728	1,897	2,068	2,051	853	1,266				
	Annual change %		-0.5%	+12.2%	+9.8%	+9.0%	+8.1%	-58.4%	+48.5%				
STATFOR Jun 22 Base	'000 TSUs									1,837	2,129	2,235	+9.0%
	Annual change %									+45.1%	+15.8%	+5.0%	
STATFOR Oct 21 Base	'000 TSUs									1,789	2,083	2,169	+5.8%
	Annual change %									+41.3%	+16.4%	+4.2%	
Performance Plan	'000 TSUs						2,051	853	1,230	1,837	2,129	2,235	+9.0%
	Annual change %						+8.1%	-58.4%	+44.3%	+49.4%	+15.9%	+5.0%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019	2,051	
2019B (PP baseline, M3)	2,051	
2019A (as in the Reporting tables, M2)	2,068	
2019B/ 2019A	-0.85%	-0.85%
2014	1,442	
2014B (PP baseline)	1,442	
2014A (as in the Reporting tables, M2)	1,454	
2014B/ 2014A	-0.85%	-0.85%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

The 2019 and 2014 traffic baselines were adjusted by the CRCO 12-months M2/M3 coefficient (-0.85%).

Review of 2014 and 2019 traffic baseline

The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-0.85%). The coefficient slightly decreases the number of 2014 and 2019 traffic baselines while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

The en route traffic forecast presented in the performance plan of Cyprus is in line with the STATFOR June 2022 base forecast.

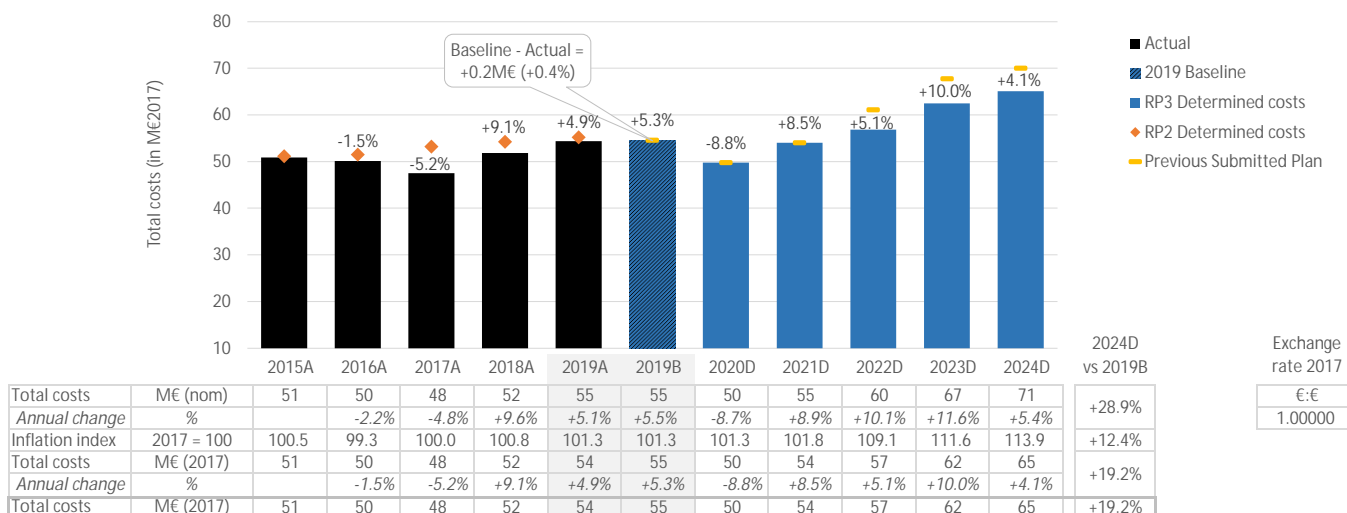
4.2.4 PRB Key Points

- Cyprus en route traffic forecast is in line with STATFOR June 2022.
- No major issues identified.

4.3 Review of determined costs and baseline

Cyprus - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3

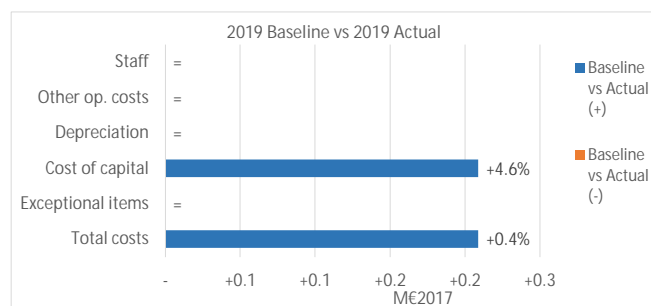


Is inflation in PP in line with IMF (April 2022 forecast)?

Deviation from index < 1p.p. in 2024

4.3.2 Baseline review

Baseline analysis	Δ M€2017	%
2014B vs 2014A	0.0	+0%
2019B vs 2019A	0.2	+0.4%



2019 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Correction on the application of the Cost of Capital methodology	ANSP	Cost of cap.	+0.2
#2 - Correction on the application of the Cost of Capital methodology	MET	Cost of cap.	+0.0
#3 - Correction on the application of the Cost of Capital methodology	NSA/EUROCONTROL	Cost of cap.	+0.0

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

- No adjustments were implemented on the 2014 cost baseline, which is in line with the actual 2014 costs.

- The 2019 cost baseline indicated by Cyprus in the performance plan amounts to 54.6M€2017, +0.4% above the actual 2019 costs.

The additional +0.2M€2017 included in the 2019 cost baseline reflect the revision of the methodology used for calculating the sum of the average net book value of fixed assets, which was incorrectly applied during RP2. The adjustment affects the computation of the cost of capital for all the entities included in Cyprus en route charging zone.

2014/2019 baseline analysis

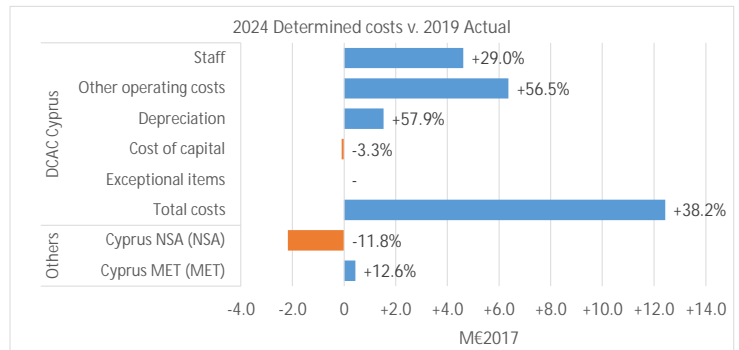
Cyprus claims that the additional +0.2M€2017 of cost of capital added to the 2019 cost baseline, reflects a correction to the methodology used in RP2 to compute the average net book value of fixed assets. The total adjustment (+0.2M€2017) amounts to +0.4% of the total 2019 actual costs. The impact is considered marginal.

4.3.3 Review of the RP3 determined costs and incentives

Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.9	+1.9%
2021 determined vs actual	+3.1	+6.1%

Review of cost elements	
Investments (see details in 3.5)	
Cost of capital (see details in 4.3.1)	
Pension costs (see details in 4.3.2)	
Allocation ER-TCZ methodology (see details in 4.3.3)	

Incentives (see details in 3.4)	
Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	1.00%
Additional incentives?	No



Although reduced compared to the performance plan submitted in November 2021, Cyprus 2024 total determined costs included in the July 2022 revised performance plan are expected to increase by +19.7% (+10.7M€2017) in 2024 as compared to the 2019 actual costs. The main contributor to this increase is DCAC (which accounts on average 66% of Cyprus total en route cost base).

DCAC determined costs are expected to increase steadily over RP3 and to reach, in 2024, +38.2% (+12.4M€2017) of the 2019 actual costs. Specifically, the following trends are noted:

- A steady increase in staff costs (+29.0% in 2024 as compared to 2019, or +4.6M€2017) over the RP3 period. According to the information provided, this trend is explained by the necessity to gradually increase the number of ATCOs, which in 2024 is expected to be about +25-30% higher than in 2019 to enable opening additional ATC sectors. Additionally, support and managerial staff will be recruited in the 2022-2024 period to manage essential tasks and functions mandated by the SES regulation. Finally, overtime costs are expected to increase between 2022 and 2024 as a result of the involvement of operational ATCOs in major investment projects.
- Other operating costs are expected to increase by +56.5% in 2024 as compared to 2019 actual costs (+6.4M€2017). Higher other operating costs are linked to the preparation for the operation of the new ACC, including additional maintenance costs, new technical investments, and training costs for ATCOs. Additionally, subscription costs for datalink services are expected to contribute to the observed increase.
- Depreciation costs (+57.9%, or +1.5M€2017 in 2024 vs 2019 actuals) are planned to increase sharply between 2022 and 2024, after an initial reduction in 2020 and 2021. The noted increase over the end of RP3 results from the implementation of new major projects (e.g. new ATM system and ACC building).
- Lower cost of capital (-3.3% in 2024 vs 2019), resulting from the application of a substantially lower WACC.

As far as it concerns the other entities included in Cyprus cost base, the planned NSA/Eurocontrol costs are expected to reduce by -11.8% (-2.2M€2017) over RP3. Within NSA/Eurocontrol costs, search and rescue costs decreased by -12% (-0.5M€2017) for the period 2022-2024 compared to the performance plan submitted in November 2021. While MET costs are expected to increase by +0.4M€2017 (+12.6%) in 2024 as compared to 2019.

4.3.4 PRB Key Points

- There are adjustments to the 2019 cost baseline. The impact of the adjustments is only marginal.
- Between 2019 and 2024, the total costs for DCAC are planned to increase by +38.2% (+12.4M€2017).
- Staff costs, operating costs, and depreciation costs are expected to increase over the period.
- In RP2, in terms of depreciation and cost of capital, airspace users have financed 19M€ for investments that have not been materialised. Cyprus noted in Annex T of the performance plan that they decided to not charge terminal costs to airspace users flying to and from Cyprus, the associated costs represent approximately 50M€. Cyprus noted that it should be considered as an indirect reimbursement to airspace users for the RP2 underspending.

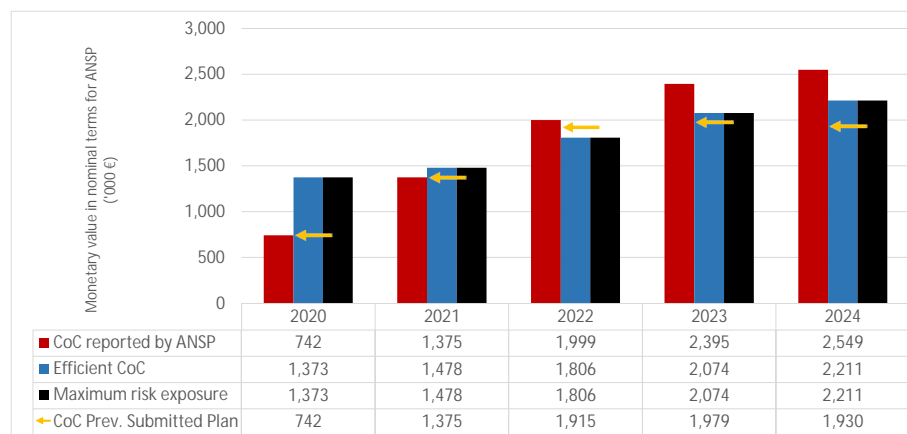
4.3.A Cost of capital

DCAC Cyprus - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	31,208	33,588	41,042	47,138	50,245
Monetary value of Return on Equity	742	1,375	1,999	2,395	2,549
Ratio RoE/DC (%)	2.4%	4.1%	4.9%	5.1%	5.1%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Total 2020-2024	118
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Difference CoC reported by ANSP vs Efficient ('000 €)	2020	2021	2022	2023	2024
	-631	-103	193	321	338

4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	4.7%	n/a	4.8%	n/a	5.0%	n/a	5.3%	n/a	5.7%	n/a
Interest on debts	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a
Capital structure (% debt)	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a
WACC	4.7%	8.7%	4.8%	5.2%	5.0%	4.5%	5.3%	4.6%	5.7%	4.9%

Is the interest on debts in line with the market?	n/a
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- DCAC is fully financed through equity, thus no interest on debts is specified.
- The WACC reported in the performance plan has been calculated based on the CAPM and seems in line with the efficient approach. The efficient cost of capital has been computed in line with the maximum risk exposure (based on option 4).
- Even though adjustments to the proposed cost of capital do not seem to be necessary over RP3, the monetary value of the embedded return on equity is not commensurate to the determined costs for 2022-2024 (ranging between 4.9% and 5.1% in those years).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	10,836	23,138	33,461	37,879	36,964
Net current assets	4,949	5,504	6,509	7,316	7,749
Adjustments total assets	0	0	0	0	0
Total asset base	15,785	28,643	39,970	45,195	44,713

- The fixed asset base will significantly increase over the period, in line with the investments as detailed in section 3.5 of this document.
- Net current assets will increase over RP3 and seem excessive compared to the expected cash flow.
- The RAB does not include adjustments to the total asset base.
- The total asset base will increase over RP3, due to the increase in both the fixed asset base and the net current assets.

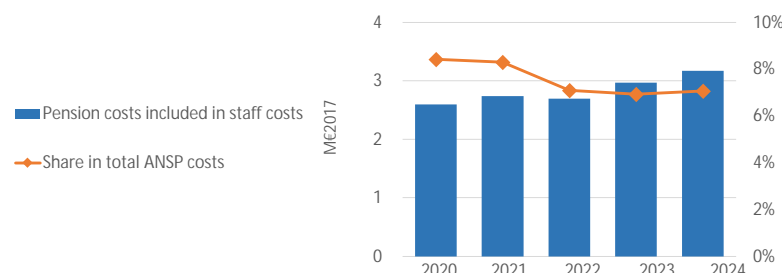
4.3.A.5 PRB Key Points

- Net current assets will increase over RP3 and seem excessive compared to the expected cash flow.
- Even though adjustments to the proposed cost of capital do not seem to be necessary over RP3, the monetary value of the embedded return on equity is not commensurate to the determined costs for 2022-2024 (ranging between 4.9% and 5.1% in those years).

4.3.B Pensions

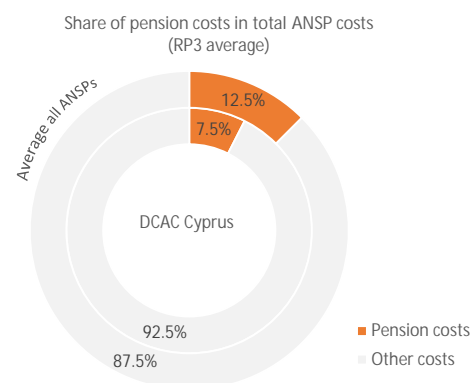
DCAC Cyprus - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



Pension costs included in staff costs	M€2017	2.6	2.7	2.7	3.0	3.2
Year on year variation	% change		+5.5%	-1.7%	+10.3%	+6.8%
Share in total ANSP costs	%	8.4%	8.3%	7.1%	6.9%	7.1%
Year on year variation	p.p.		-0.1p.p.	-1.2p.p.	-0.2p.p.	0.1p.p.

What is the trend of pension costs share in the total ANSP costs between 2020 and 2024?	Decrease
---	----------



Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average?	Lower
---	-------

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **n/a**

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **No**

According to the information provided in the performance plan, the assumptions underlying the calculations of defined benefit scheme are the ones which apply to the entire Public Sector and to all civil servants.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

The ANSP itself cannot take such actions since it is a State entity and the pensions policy applies to all civil servants.

4.3.B.4 PRB Key Points

- No major issues identified.



4.3.C Methodology for cost allocation between ER and TRM

Cyprus

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Cyprus did not mention changing the cost allocation methodology with respect to RP2.
- Costs are allocated to different air navigation services based on: the activities or tasks performed, the personnel employed, and the assets/projects employed to the various air navigation services.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

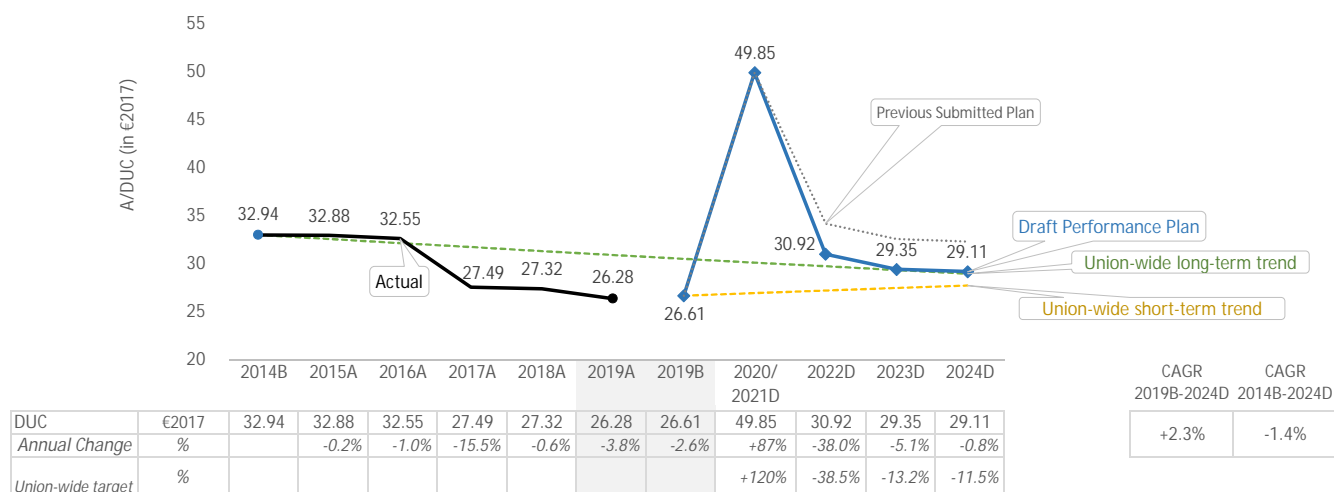


- Cyprus did not mention changing the cost allocation methodology with respect to RP2.
- No major issues identified.

4.4 Determined unit costs (DUC)

Cyprus - En route CZ

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency

✗ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan	Union-wide	Difference
✓ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-1.4%	+1.0%	+1.3p.p.
✓ DUC level consistency	2019 baseline	Performance Plan	Average comparator group	Difference
		26.61	27.91	-4.7%

- The DUC is planned to increase on average by +2.3% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -1.4% between 2014 and 2024, which is slightly better than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -4.7% lower than the average of the comparator group. It is also noted that the DUC for Cyprus is expected to remain below the average DUC of the comparator group for the remainder of RP3.
- Cyprus presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs

n/a

4.4.5 PRB Key Points

✓

- Cyprus is not consistent with the RP3 DUC trend in terms of average reduction.
- Cyprus is consistent with the long-term Union-wide DUC trend.
- Cyprus is consistent with the average DUC baseline of the comparator group.
- Cyprus presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.5 Terminal

Cyprus

Cyprus has not established any terminal charging zone for RP3.

PRB Assessment

FABEC

Draft Performance Plan

Context and scope

FABEC

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317)
Documents no: F6125, F6126, F6129

Dated: 13/07/22

Relative weight compared
to the SES area (2019):

% Flight-hours vs SES 38.4%
% Serv. Units vs SES 36.4%
% Costs vs SES 46.7%

Scope

FAB: _____

FABEC

ANSPs: _____

skeyes
DSNA
DFS
ANA LUX
LVNL
Skyguide
MUAC
Météo France
Deutscher Wetterdienst (DWD)
Royal Netherlands Meteorological Institute (KNMI)
Office Fédéral de la Météorologie et de Climatologie
MétéoSuisse

ATM, MET
ATM
ATM
ATM, MET
ATM
ATM
MET
MET
MET
MET

Other entities (as per Article 1(2) last
para. of Regulation 2019/317):

Belgian Supervisory Authority for Air Navigation
Services (BSA-ANS)
French Civil Aviation Authority, Air Transport
Directorate
German Federal Supervisory Authority for Air
Navigation Services
Luxembourg Civil Aviation Authority

NSA The Netherlands
Federal Office for Civil Aviation (FOCA), Safety Division
Infrastructure
Eurocontrol

Competent authority
Competent authority
Competent authority
Competent authority
Competent authority
Competent authority
NM/CRCO

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges
En route (ER)	Belgium-Luxembourg	n/a	No	No	No
	France	n/a	No	No	No
	Germany	n/a	No	No	No
	Netherlands	n/a	No	No	No
	Switzerland	n/a	No	No	No
Terminal (TRM)	Belgium EBBR	1	No	No	Yes
	France - Zone 1	2	No	No	No
	France - Zone 2	56	No	No	No
	Germany - TCZ	16	No	No	No
	Luxembourg - TCZ	1	No	No	Yes
	Netherlands - TCZ	4	No	No	No
	Switzerland - TCZ	2	No	No	No
Changes in the CZs from RP2	Yes				
Explanations: See Belgium, Luxembourg, and Switzerland.					

Comparator group: _____

n/a

Other States in the comparator group: _____

n/a

Currency: _____

n/a

Exchange rate: _____

n/a

1. Safety See Member States' conclusions2. Environment ✓

Environment PP targets

	2020	2021	2022	2023	2024
FAB target for horizontal en route flight efficiency (KEA) (%)	3.25%	2.75%	2.75%	2.75%	2.75%
<i>Previous submitted PP</i>	3.25%	2.75%	2.75%	2.75%	2.75%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC should be approved.

- FABEC's horizontal flight efficiency targets are consistent with the reference values published in the June 2021 ERNIP.
- The 2021 performance shows that FABEC did not achieve the 2021 target of 2.75% in its performance plan.
- Due to insufficient environmental performance in past years and lack of measures introduced in the performance plan to achieve RP3 targets, FABEC remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity ✓

Capacity PP targets

	2020	2021	2022	2023	2024
FAB target for en route ATFM delay per flight (min)	3.45	0.27	0.37	0.37	0.37
<i>Previous submitted PP (en route)</i>	3.45	0.27	0.37	0.37	0.37

PRB assessment

The PRB concludes that the capacity targets proposed by FABEC Member States should be approved.

- En route capacity targets are below the range of the delay forecast in 2023 and 2024, thus the capacity targets may not be achieved without additional measures compared to those included in the NOP to achieve the targets.
- The incentive scheme defined on the FAB level may negate the effects of the local incentive schemes.

4. Cost-efficiency See Member States' conclusions

5. PRB recommendations

ENVIRONMENT

- FABEC should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- FABEC Member States should consider introducing additional capacity enhancement measures and ensure that all capacity enhancement measures which are included in the performance plan and the NOP are properly implemented.
- FABEC Member States should revise the FAB level incentive scheme so that it has a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

ENVIRONMENT

- FABEC should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- FABEC Member States should consider introducing additional capacity enhancement measures and ensure that all capacity enhancement measures which are included in the performance plan and the NOP are properly implemented.
- FABEC Member States should revise the FAB level incentive scheme so that it has a material impact on the revenues.

FABEC

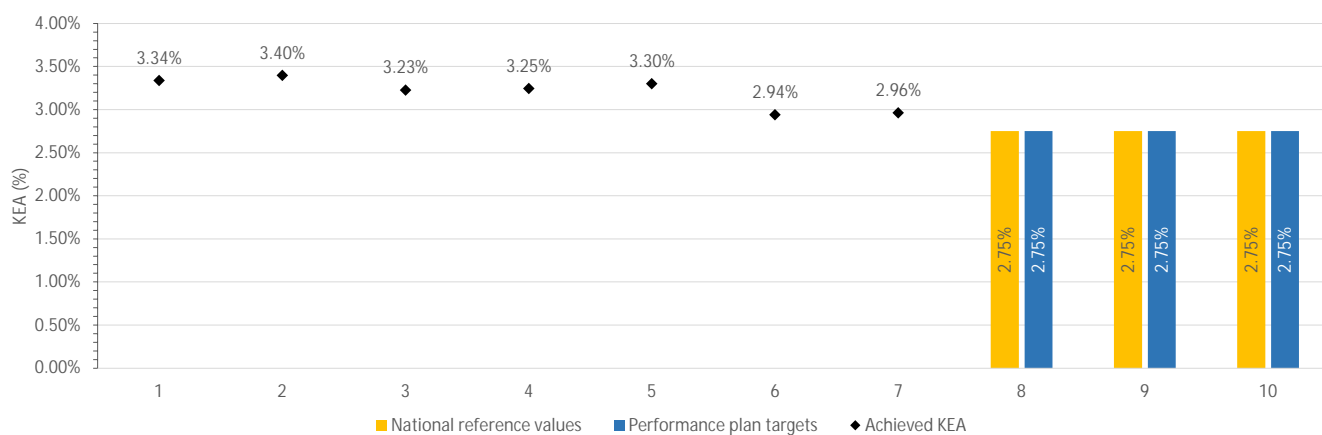
Environment KPA

2.1 Summary of Key Data and Assessment Results

FABEC

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	0.00%	2.75%	2.75%	2.75%	2.75%
Performance plan targets	3.25%	2.75%	2.75%	2.75%	2.75%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC should be approved.

- FABEC's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that FABEC did not achieve the 2021 target of 2.75% in its performance plan.
- Due to insufficient environmental performance in past years and lack of measures introduced in the performance plan to achieve RP3 targets, FABEC remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- FABEC should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

FABEC

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?		Reference in PP	Reference in LSSIP
<p>Belgium-Luxembourg operates an ATS route network in lower airspace (GND - FL195) and upper airspace lower than FL245. Above FL245, MUAC offers free route airspace (FRA) in the Brussels flight information region (FIR).</p> <p>France operates an ATS route network in lower and upper airspace. It does not plan for a full FRA until 2025.</p> <p>With effect from 1 March 2018, DFS implemented free route airspace above FL245 within the part of Germany that is controlled by DFS and lies within the vertical limits described below, i.e. Karlsruhe UAC and the respective parts of Bremen ACC and München ACC. FRA Cells EDMM East, EDMM South, and EDWW East will remain available only during the night (2230-0400 UTC).</p> <p>No FRA airspace has been identified in the Amsterdam FIR managed by LVNL below FL245 since it is not required by the PCP. MUAC controls upper airspace above FL245 where 24-hour FRA has been available since December 2019.</p> <p>A free route airspace (FRA) project that will allow airspace users to plan and fly direct routes, is in progress and should become effective in 2022. An ATS route network is still in place in lower airspace (GND to FL195) and upper airspace (FL195 to FL660).</p> <p>Therefore, FABEC as a whole is still working towards implementing FRA and plans to do so by the end of RP3.</p>	✓	3.2.1(c)	See member states

Major 2021 ERNIP Recommended Measures:		Reference in PP	Reference in ERNIP
Measure included within performance plan?			See member states
N/A - see member states projects			

FUA Implementation according to latest LSSIP	Implementation
1	✓
2	✓
3	✓

The chart in section 2.1.1 shows that FABEC achieved a KEA of 2.94% in 2020. In 2021, FABEC reached a KEA of 2.96% which means it did not achieve the 2021 target of 2.75% in its performance plan.

In its FAB-level explanation of the targets, FABEC claims that although it plans to achieve the RP3 targets, the interdependency between the environment and capacity KPAs means that if the traffic evolution is volatile and creates capacity issues, the environment targets may not be achieved. However, it is worth noting that in 2021 FABEC achieved the capacity reference values but not the environment reference values. Thus, whilst interdependency does exist, it is not the only factor affecting FABEC's achievement of the environment targets.

FABEC suggested that the environment KPI does not measure its efforts to improve noise pollution around airports, vertical flight efficiency, or its work to avoid the creation of contrails. The performance scheme enables plans to include optional performance indicators such as those highlighted by FABEC in their plan. However, the FABEC performance plan did not propose any such optional indicators.

In terms of the specific measures planned by FABEC, it referred the PRB to the planned projects within the June 2021 ERNIP.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does FABEC plan for an environmental incentive scheme?	
	✗

The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

FABEC

Capacity KPA

3.1 Summary of capacity key data and assessment results

FABEC

3.1.1 En route ATFM delay

FABEC proposes capacity targets which are consistent with the FAB level reference values. The target values fall below the range of the delay forecast for 2022-2024. FABEC commits to all measures included in the NOP and also considers additional measures to ensure adequate capacity. Based on the delay forecast, such additional measures may be required to achieve the capacity targets.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

3.1.3 Incentives

En route:

Used as a filter to determine if local incentive schemes will result in penalties or bonuses.

The FAB target is modulated according to the CRSTMP attributed ATFM delay codes only. The pivot value is modulated by the RP2 average ratio for CRSTMP delays compared to total delays, which FABEC reports as 67%.

If the delays exceed the pivot value and the dead band, then no ANSP can earn a bonus and ANSPs failing to achieve their local targets will be liable for penalties. If the delays are less than the pivot value, minus the dead band, then no ANSP should incur a penalty and any ANSP exceeding their local target can earn a bonus.

The financial impact of the bonus or penalty is determined by the local incentive scheme.

3.1.4 Investments

3.1.5 PRB conclusions

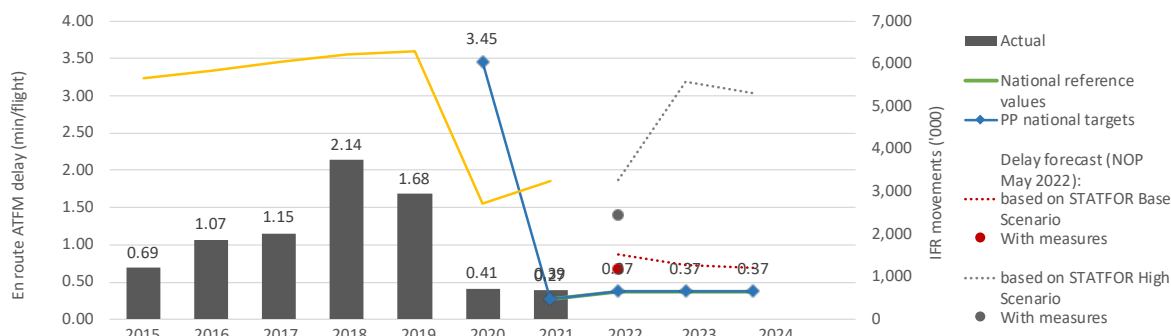


The PRB concludes that the capacity targets proposed by FABEC Member States should be approved.

- En route capacity targets are below the range of the delay forecast in 2023 and 2024, thus the capacity targets may not be achieved without additional measures compared to those included in the NOP to achieve the targets.
- The incentive scheme defined on the FAB level may negate the effects of the local incentive schemes.
- FABEC Member States should consider introducing additional capacity enhancement measures and ensure that all capacity enhancement measures which are included in the performance plan and the NOP are properly implemented.
- FABEC Member States should revise the FAB level incentive scheme so that it has a material impact on the revenues.

3.2 En route ATFM delay per flight

3.2.1 Overview of en route ATFM delay per flight



Traffic variation	+2%	+3.2%	+3.4%	+3.1%	+1.0%	-56.8%	+19.4%				
Actual delay/flight	0.69	1.07	1.15	2.14	1.68	0.41	0.39				
National reference values						n/a	0.27	0.37	0.37	0.37	
PP national targets						3.45	0.27	0.37	0.37	0.37	
Delay forecast*:											
Based on STATFOR High Scenario	w/o measures							-	1.87	3.19	3.04
	with measures								-	1.39	-
Based on STATFOR Base Scenario	w/o measures								-	0.87	0.72
	with measures								-	0.67	-

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.2.2 Review of planned capacity enhancement measures

Assessment of capacity enhancement measures and review against NOP

The FABEC performance plan claims that all FAB level and local capacity enhancement measures, capacity profile calculations, and other relevant aspects are fully in line with the latest edition of the NOP.

Instead of listing the capacity enhancement measures, the plan directly references:

- The NOP 2022-2024 and the updated version 2022-2026,
- ERNIP Part2 and included FABEC airspace projects, and
- FABEC Member States' performance plans.

Additionally, the following capacity enhancement measures are listed in the performance plan as FAB level initiative:

- The establishment of FABEC/NM Airspace Design Coordination Group (ADCG),
- FABEC Optimised Airspace Structure,
- An optimum FABEC sectorisation, and
- FRA cross-border operations and ATS route structure below FRA.

The FABEC performance plan also claims that FABEC Member States and ANSPs have considered additional assumptions and measures compared to those included in the NOP when setting their capacity targets.

3.2.3 Review of previous and existing capacity profile plans per ACC

See FABEC Member States' factbooks

3.2.4	Review of capacity enhancement measures related to mitigating higher delays due to significant / special events	n/a
3.2.5	Review of the measures to increase capacity and address capacity gaps	n/a
a)	Performance plan contains additional measures compared to the NOP in order to close the capacity gap? The performance plan claims that such additional measures have been considered and planned, and might also be activated if necessary.	✓
b)	Measures proposed by the NM to enhance capacity are planned and described in the performance plan? The performance plan explicitly commits to all measures in the NOP, and also explicitly declares consistency with the NOP and the ERNIP.	✓
c)	The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? n/a	n/a
d)	The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? There is no reference in the performance plan to specific measures proposed by the NSA.	✗
e)	Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? The planned number of ATCO FTEs are analysed in the individual FABEC Member States' factbooks.	n/a
f)	The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? The performance plan refers to further measures related to the flexible use of operational personnel. Details are also analysed in the individual FABEC Member States' factbooks.	✓
g)	The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? Investments and ATM system upgrades are assessed in the individual FABEC Member States' factbooks.	n/a
3.2.6	PRB Key Points	✓

- FABEC proposes capacity targets, which are consistent with the FAB level reference values. The target values fall below the range of the delay forecast for 2022-2024.
- FABEC commits to all measures included in the NOP and also considers additional measures to ensure adequate capacity. Based on the delay forecast, such additional measures may be required to achieve the capacity targets.

3.4 Capacity Incentive schemes

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±23.0%	0.500%	0.500%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.37	0.37	0.37
Alert threshold (Δ Ref. value in fraction of min)			±0.059	±0.059	±0.059
Performance Plan targets			0.37	0.37	0.37
Pivot values for RP3			0.25	0.25	0.25

Threshold and pivot value review

The pivot value is modulated. There is also a dead band of +/-23% around the modulated pivot value before penalties or bonuses are applied. If delays exceed the dead band (0.306 minutes per flight), no bonuses can be earned and individual ANSPs that do not achieve local performance targets will incur penalties. If delays are less than the dead band (0.192 minutes per flight), no penalties will be incurred and individual ANSPs that do better than local performance targets can earn a bonus.

Modulation review

The pivot value is modulated according to the average FAB-wide ratio for CRSTMP delays causes compared to all delays for the entire RP2 (2014-2019). FABEC reports this as being 67%, which is applied to the FAB targets for each year. Only ATFM delays attributed to CRSTMP are included in the scope of the incentive scheme.

Review of financial advantages/disadvantages

There is no direct financial impact associated with the FAB incentive scheme, it is a filter to determine if local incentive schemes will result in penalties or bonuses.

3.4.2 Terminal capacity incentive scheme

n/a

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

⚠

En route:

- Used as a filter to determine if local incentive schemes will result in penalties or bonuses.
- The FAB target is modulated according to the CRSTMP attributed ATFM delay codes only. The pivot value is modulated by the RP2 average ratio for CRSTMP delays compared to total delays, which FABEC reports as 67%.
- If the delays exceed the pivot value and the dead band, then no ANSP can earn a bonus and ANSPs failing to achieve their local targets will be liable for penalties. If the delays are less than the pivot value, minus the dead band, then no ANSP shall incur a penalty and any ANSP exceeding their local target can earn a bonus.
- The financial impact of the bonus or penalty is determined by the local incentive scheme.

PRB Assessment

BELGIUM

Draft Performance Plan

Context and scope

Belgium

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6125, F6126, F6129, F6127, F5859, F5820, F5821, F5822, F5823, F5824, F5825, F5826, F5827, F5828, F5829, F6130

Relative weight compared to the SES area (2019):

 % Flight-hours vs SES 2.10%
 % Serv. Units vs SES 2.10%
 % Costs vs SES 3.30%

Scope

FAB: FABEC

ANSPs: skeyes
 MUAC

Other entities (as per Article 1(2) last para. of Regulation 2019/317): Belgian Supervisory Authority for Air Navigation Services (BSA-ANS)
 Eurocontrol

ATM, MET
 ATM

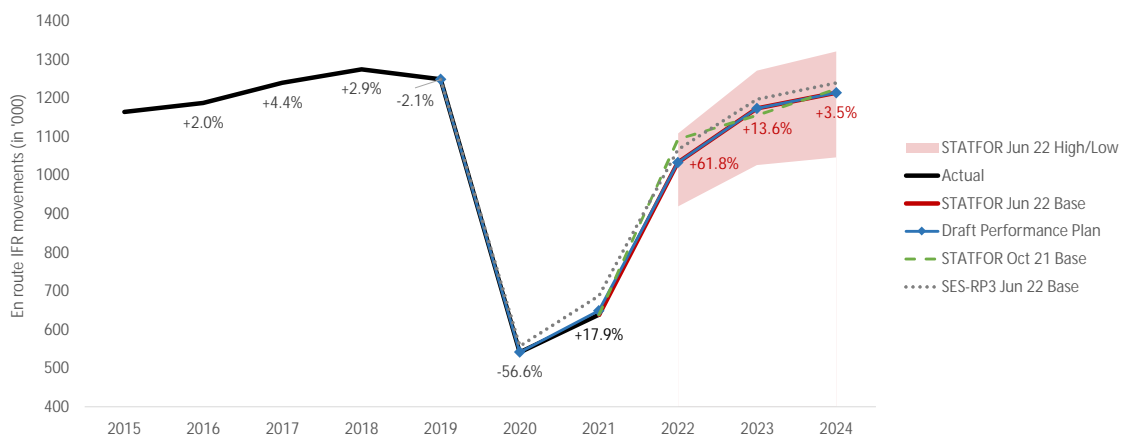
Competent authority
 NM/CRCO

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Belgium-Luxembourg	n/a	No	No	No	
Terminal (TRM)	Belgium EBBR	1	No	No	Yes	
Changes in the CZs from RP2		Yes	In RP3 there is only one terminal CZ (five in RP2) covering EBBR airport. As detailed in Annex M of the performance plan, air navigation services at Brussels airports are 75% financed by airspace users and 25% by the authorities, as it was the case in RP2. Detailed explanations about key costs allocation are provided in section 4.3.C of this document.			

Comparator group: Group E Other States in the comparator group: Austria, Netherlands, Switzerland

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
skeyes	Safety policy and objectives	B	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	B	B	C	C	C

Previous submitted PP

skeyes	Safety policy and objectives	B	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	B	B	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Belgium should be approved.

- The EoS safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
ANSP target for horizontal en route flight efficiency (KEA) (%)		3.10%	3.05%	3.00%	3.00%
Previous submitted PP		3.10%	3.05%	3.00%	3.00%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC for Belgium-Luxembourg should be approved.

- Belgium-Luxembourg's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Belgium-Luxembourg did not achieve the 2021 target of 3.10% in its performance plan. For this reason, Belgium-Luxembourg remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for <u>en route</u> ATFM delay per flight (min)	0.64	0.07	0.12	0.13	0.12
National target for <u>terminal</u> and airport ANS ATFM arrival delay per flight (min)	1.82	1.08	1.08	1.08	1.08
Previous submitted PP (en route)	0.64	0.07	0.12	0.13	0.12
Previous submitted PP (terminal)	1.82	1.08	1.08	1.08	1.08

PRB assessment

The PRB concludes that the capacity breakdown values proposed by Belgium should be approved.

- The incentive schemes defined in the draft performance plan for Belgium do not have a material impact on the revenue at risk.

4. Cost-efficiency



Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	189.52	104.47	94.18	89.87	+1.9%	+1.1%
Target for determined unit cost (DUC) (€2017) - Terminal	398.33	252.17	239.68	232.82	+4.5%	n/a
Previous submitted PP (en route)	189.52	113.26	108.51	103.82	+5.7%	+4.0%
Previous submitted PP (terminal)	398.33	270.44	252.79	249.82	+6.3%	n/a

PRB assessment

The PRB concludes that the cost-efficiency targets proposed by Belgium-Luxembourg should not be approved.

- Belgium-Luxembourg is not consistent with the RP3 DUC trend in terms of average reduction.
- Belgium-Luxembourg is not consistent with the long-term Union-wide DUC trend.
- Belgium-Luxembourg is not consistent with the average DUC baseline of the comparator group.
- Belgium-Luxembourg presents justifications for a possible deviation to achieve capacity targets. However, even assuming the request as appropriate, the deviation cannot be considered exclusively for the purpose of achieving capacity targets.

5. PRB recommendations

CAPACITY

- Belgium should revise the incentive schemes so that they have a material impact on the revenues.
- Belgium should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.

COST-EFFICIENCY

- Belgium-Luxembourg should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Belgium-Luxembourg should apply the inflation from the IMF April 2022 forecast.
- Belgium-Luxembourg should consider in the RP3 cost base the 20.6M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Belgium should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends and with respect to similar airports, or should revise terminal RP3 cost-efficiency targets downwards.

6. PRB recommendations from the performance plans submitted in November 2021

CAPACITY

- Belgium-Luxembourg should align capacity profile plans, capacity enhancement measures and proposed capacity breakdown values.
- Belgium should revise the incentive schemes so that they have a material impact on the revenues.
- Belgium should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.

COST-EFFICIENCY

- Belgium-Luxembourg should significantly revise downwards the RP3 cost base.
- Belgium-Luxembourg should adjust the cost baseline, and further clarify the 10M€2017 difference between en route and terminal cost allocation adjustments.
- Belgium-Luxembourg should consider in the RP3 cost base the 20.6M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Belgium should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends and with respect to similar airports, or should revise terminal RP3 cost-efficiency targets downwards.

BELGIUM

Safety KPA

1.1 Summary of safety key data and assessment results

Belgium

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3 and are set in accordance with the RP3 Union-wide safety targets. The EoSM targets levels are planned to be progressively attained towards the end of RP3.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered relevant to improve and further ensure the required safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA level. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

The change management practices are defined and supported by the NSA. Considering the level of details provided in the performance plan, these practices, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Belgium should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

Belgium

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
skeyes	Safety policy and objectives	B	B	B	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	C	C	C	C	D	D	✓	
	Safety assurance	B	C	B	B	B	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	B	B	B	B	C	C	C	✓	

The performance plan defines the EoSM targets for the entire period of 2020-2024. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained towards the end of RP3. Belgium has to improve four out of five management objectives over RP3.

The performance plan describes the specific measures applied at the level of the ANSP, the CAA, and the FABEC authorities.

At ANSP level, the measures are planned to be implemented in the following areas:

- Safety culture assessment and promotion;
- Improvement of the integration of contractors into the SMS;
- Yearly rehearsal and update of all emergency procedures;
- Improvements in safety management area addresses ANSP's key risks;
- Management of performance deviations and deficiencies from its operational risk baseline; and
- Continuous improvement of the SMS through yearly conduct of internal SMS audits.

At the level of the competent authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373 applicable to EoSM improvements are regularly reviewed and verified.

Furthermore, FABEC authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

Considering the current safety levels, the measures are considered relevant to improve and further ensure the required safety levels over RP3.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan states that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment). Indicators, issues, and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

The performance plan describes a dedicated change management procedure aiming at minimising the negative impact on network performance during the implementation of SAS3 Programme. The procedure, based on internal safety and risk assessment, is submitted for the approval of the Belgian Supervisory Authority. Considering the level of details provided in the performance plan, the procedure, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

BELGIUM-LUXEMBOURG

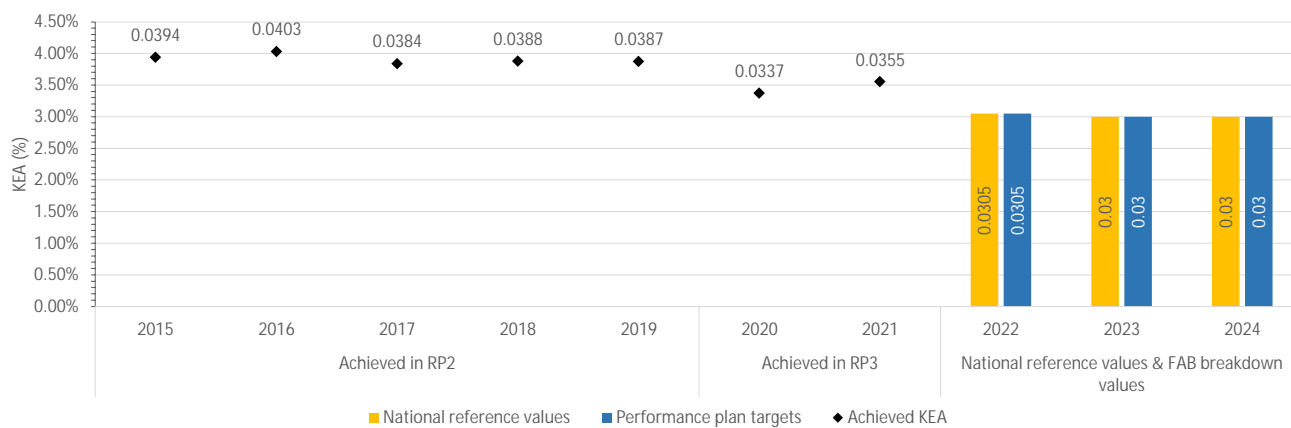
Environment KPA

2.1 Summary of Key Data and Assessment Results

Belgium-Luxembourg

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	7.09%	3.10%	3.05%	3.00%	3.00%
FAB breakdown values	n/a	3.10%	3.05%	3.00%	3.00%
Comparison of draft breakdown values with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC for Belgium-Luxembourg should be approved.

- Belgium-Luxembourg's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Belgium-Luxembourg did not achieve the 2021 target of 3.10% in its performance plan. For this reason, Belgium-Luxembourg remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

2.2 Measures of Achievement

Belgium-Luxembourg

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Belgium operates an ATS route network in lower airspace (GND - FL195) and upper airspace lower than FL245. Above FL245, MUAC offer FRA in the Brussels FIR.		3.2.1(a)	Page 30
Commitment to FRA by 2022?	✘	Reference in PP	Reference in LSSIP
Belgium-Luxembourg operates an ATS route network in lower airspace (GND - FL195) and upper airspace lower than FL245. Above FL245, MUAC offer FRA in the Brussels FIR. FRA in airspace controlled by skeyes is not considered a priority for Belgium-Luxembourg, as it is deemed to be outside the CP1 geographical scope of FRA (above FL305).		3.2.1(a)	Page 52
Major 2021 ERNIP Recommended Measures:	2		
Measure included within performance plan?		Reference in PP	Reference in ERNIP
EBCI procedures	✓	3.2.1(b)	Page 205
CDO/CCO improvement at Belgian airports	✓	3.2.1(b)	Page 218
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Belgium-Luxembourg achieved a KEA of 3.37% in 2020. In 2021, Belgium-Luxembourg reached a KEA of 3.55% which means it did not achieve the 2021 target of 3.10% in its performance plan.

Belgium-Luxembourg believes the Network Manager (NM) campaign to fly as filed (to increase capacity) makes it difficult to offer direct routes and improve KEA. However, this was already the case in 2019 and since traffic has reduced, the same measures are unlikely to be needed (the latest forecast suggests that traffic in Belgium-Luxembourg will not return to 2019 levels until 2025). Therefore, Belgium-Luxembourg has room to improve its performance.

Belgium-Luxembourg acknowledged the PRB's view that free route airspace (FRA) is an important enabler for improved routing, but suggests that this improvement is out of scope since it controls airspace below FL245. In response, the PRB suggests that Belgium-Luxembourg considers initiatives across the Single European Sky (SES), where many Member States have offered FRA from GND to FL660, to understand the full benefits.

Belgium-Luxembourg did not elaborate on the specifics of how its environment action plan will help to achieve the targets, i.e. the impact of ATS route improvements or sector re-designs. Instead, it only explained that the plan will help improve horizontal and vertical flight efficiency.

2.3.1 Annex IV 2.1(f): Measures for achievement of targets

Does Belgium-Luxembourg plan for an environmental incentive scheme?	✘
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

BELGIUM

Capacity KPA

3.1 Summary of capacity key data and assessment results

Belgium

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values, and fall within the range of the delay forecast. Capacity plans indicate that Belgium will have a sufficient capacity to meet the demand throughout 2022-2024.

The implementation of the new ATM system may introduce capacity constraints in 2023-2024. The performance plan does not provide any mitigation measures to reduce such potential effects.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Brussels is the only airport included in the Belgian performance plan for RP3. The proposed target (all causes) is constant during 2021-2024 and equals to 1.08 minutes per arrival, which is higher than the observed performance in RP2 (0.95 minutes per arrival) for Brussels, therefore it does not represent an improvement with respect to the past performance.

3.1.3 Incentives

En route:

Belgium has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the national incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

Belgium has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.

Maximum penalty is set at 0.5%, maximum bonus is set at 0.125%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined cost of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

While some investments above 5M€ are detailed in annex E of the performance plan, they are not included in the "new major investments" section. It is unclear if those investments are existing or split into multiple projects below 5M€.

The actual CAPEX for RP2 was 72% of the planned for the same period and the amount underspent was 25.2M€. The airspace users have financed 20.6M€ for investments that have not been materialised. The NSA noted that from a legal point of view, the legislation on underinvestment was different in RP2 than in RP3, therefore there is no legal requirement to re-fund users.

The 2019 submission of the performance plan included a drone detection system as other new investment. However, the investment was not included in the 2021 submission.

Major investments targeting capacity, flexibility, resilience, and scalability are planned, however capacity benefits may only be achieved following RP3. Major investments contribute to PCP/CP1 ATM Functionalities AF1, AF2, AF3, AF4, and AF6.

Other investments are also planned which contribute to flexibility, resilience, and scalability.

3.1.5 PRB conclusions

The PRB concludes that the capacity breakdown values proposed by Belgium should be approved.

- The incentive schemes defined in the draft performance plan for Belgium do not have a material impact on the revenue at risk.

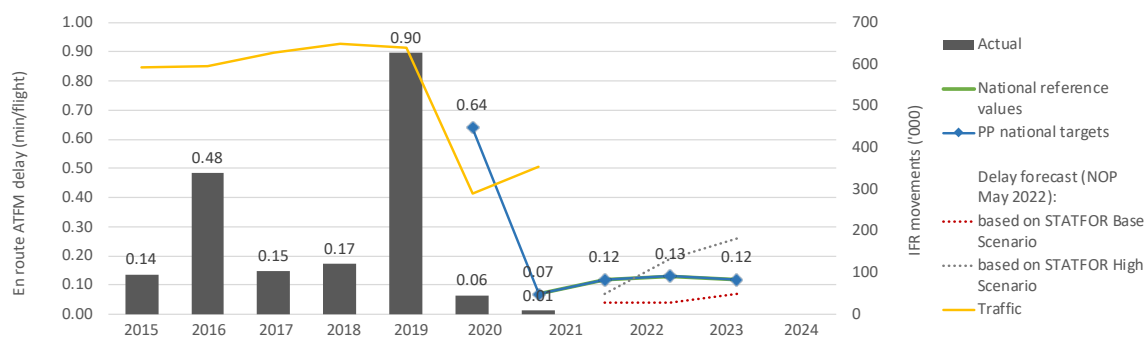
- Belgium should revise the incentive schemes so that they have a material impact on the revenues.

- Belgium should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.

3.2 En route ATFM delay per flight

Belgium - skeyes

3.2.1 Overview of en route ATFM delay per flight



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Traffic variation	+5%	+0.6%	+5.6%	+3.3%	-1.5%	-54.7%	+22.0%			
Actual delay/flight	0.14	0.48	0.15	0.17	0.90	0.06	0.01			
National reference values						n/a	0.07	0.12	0.13	0.12
PP national targets						0.64	0.07	0.12	0.13	0.12
Delay forecast*:										
Based on STATFOR High Scenario							-	0.07	0.19	0.26
Based on STATFOR Base Scenario							-	0.04	0.04	0.07

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.2.2 Review of planned capacity enhancement measures



Assessment of capacity enhancement measures and review against NOP

During RP2, Belgium experienced capacity constraints mainly related to staffing, ATM capacity, and weather issues. Belgium missed the capacity targets during all years of RP2. The NOP expects the traffic recovery to the 2019 levels already in 2024.

The main capacity enhancement measures introduced by the performance plan include:

- ATM system upgrade, and
- ATCO recruitment.

The following measures are listed only in the NOP but could be part of the measures listed by the performance plan in more detail:

- enhanced FUA (AUP/UUP rolling plan),
- improved route network, and
- enhanced civil-military procedures.

All measures are identified by the NOP and are expected to positively contribute to the network capacity although some of the benefits are envisaged only in RP4 and later. An update of the ATM system is expected only by the end of RP3. Without additional details, it is not possible to accurately determine how the upgrade will benefit the airspace users during RP3.

The number of ATCO FTEs is planned to increase by 8 (+12% compared to 2019) between 2021 and 2024, which is less than in the performance plan submitted in November 2021.

ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P
Brussels ACC (EBBU)	Additional ATCOs in OPS to start working in the OPS room	0.8	5		4	2	7	8
	ATCOs in OPS to stop working in the OPS room	4	12.3		1	3	6	3
	ATCOs in OPS to be operational at year-end	87.8	80.5	5	86.5	85.5	86.5	91.5
Total - skeyes (en route)	Additional ATCOs in OPS to start working in the OPS room	0.8	5	5	4	2	7	8
	ATCOs in OPS to stop working in the OPS room	4	12.3	83.8	1	3	6	3
	ATCOs in OPS to be operational at year-end	87.8	80.5	83.5	86.5	85.5	86.5	91.5

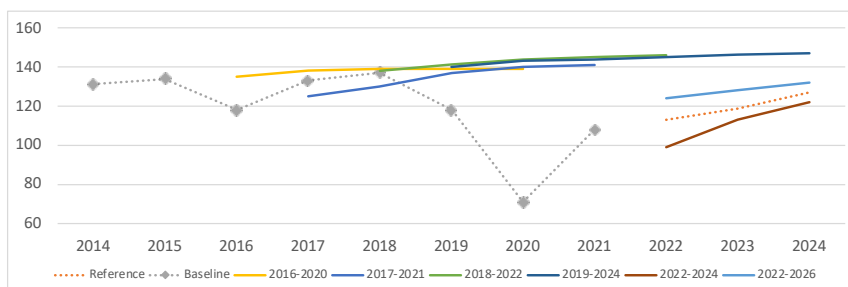
2024 (end) -
2020 (beg.)
+11

+11

3.2.3 Review of previous and existing capacity profile plans per ACC



Brussels ACC (EBBU)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									113	119	127
Baseline	131	134	118	133	137	118	71	108			
2016-2020			135	138	139	139	139				
2017-2021				125	130	137	140	141			
2018-2022					138	141	144	145	146		
2019-2024						140	143	144	145	146	147
2022-2024									99	113	122
2022-2026									124	128	132
Latest vs Reference									10%	8%	4%

- Historical data shows a significant drop in baseline values in 2016, which is reflected in actual delay values as well. In all other years, the baseline and planned values were consistent, except for 2017, where the planned capacity was lower than the actual baseline value. The average growth of baseline values was 1.5% annually between 2015-2018 and significantly decreased in 2019.

- The latest planned capacity profile shows an average annual growth of 3.2% over 2022-2024. Based on the capacity plan, a capacity surplus is expected in all remaining years of RP3.

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps



- a) Performance plan contains additional measures compared to the NOP in order to close the capacity gap? n/a
The performance plan contains no additional measures compared to the NOP, although generic references to some initiatives are made. The NOP expects delays to increase between 2023 and 2024 in case of traffic reaching STATFOR high forecast values.
- b) Measures proposed by the NM to enhance capacity are planned and described in the performance plan? ✓
The capacity enhancement measures are in line with those of the NOP.
- c) The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? ✓
The capacity enhancement measures are in line with those of the NOP.
- d) The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? n/a
The performance plan contains no reference to additional measures proposed by the NSA.
- e) Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? ⚠
The performance plan provides information on staffing and the evolution of the number of ATCO FTEs during RP3, although, it is not clear based on the submitted evidence to what extent the planned increase in staffing levels contributes to reaching the capacity objectives.
- f) The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? ⚠
The performance plan contains no information regarding the flexible use of operational staff.
- g) The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? ✓
The performance plan contains a reference to the implementation of a new ATM system in 2024-2025, which will be CP1 compliant.

3.2.6 PRB Key Points

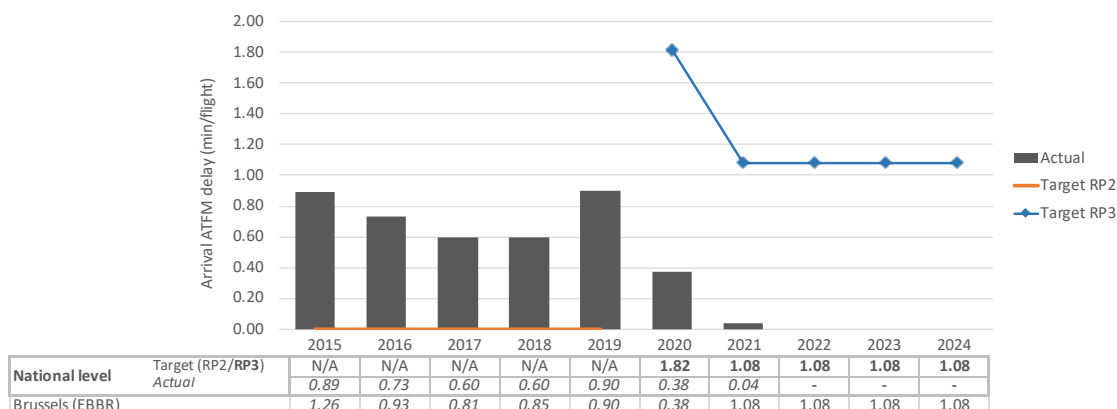


- The ANSP breakdown values are consistent with the ANSP reference values and fall within the range of the delay forecast.
- Capacity plans indicate that Belgium will have a sufficient capacity to meet the demand throughout 2022-2024.
- The implementation of the new ATM system may introduce capacity constraints in 2023-2024. The performance plan does not provide any mitigation measures to reduce such potential effects.

3.3. Arrival ATFM delay per flight

Belgium

3.3.1 Overview of arrival ATFM delay per flight



	Target (RP2/RP3)											
	Target (RP2/RP3)	Actual	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level	N/A	N/A	N/A	N/A	N/A	N/A	1.82	1.08	1.08	1.08	1.08	1.08
Brussels (EBBR)	1.26	0.93	0.81	0.85	0.90	0.38	1.08	1.08	1.08	1.08	1.08	1.08

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

Belgium did not set any targets for arrival ATFM delay in RP2. The national level in the graph above concerns the performance of the five airports included in the performance plan for RP2. For RP3, the only airport in the performance plan is Brussels, where the actual delays decreased along RP2 from 1.26 minutes per arrival in 2015 to 0.90 minutes per arrival in 2019. The performance plan uses the STATFOR October 2021 base forecast that estimates a CAGR (2019-2024) of -0.6% for Brussels.

The proposed target (all causes) is constant for the 2021-2024 and equal to 1.08 min per arrival, which is higher than the observed performance in RP2 (0.95 minutes per arrival) for Brussels, therefore it does not represent an improvement with respect to the average past performance.

The plan reports that ATCO recruitment is set at full pace to compensate forecasted retirements and to manage forecasted traffic, and the A-SMGCS system will be replaced during RP3 to ensure improved terminal capacity in Brussels during deteriorated weather conditions.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Brussels (EBBR)	1.08
National Target	1.08



As Brussels is the only airport included in the performance plan, the national target coincides with the airport target and the potential delay contribution is only associated to this airport.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Brussels (EBBR)	GROUP I	0.65	0.95	+0.30	1.08	+0.43

* GROUP I - Avg. mvts. in 2016-2018 $\geq 225,000$; GROUP II - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and seasonal;
GROUP III - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 $< 80,000$

The performance of Brussels in the past reference period was worse than the median of similar airports (+0.30 min per arrival). The target set for RP3 represents a further worsening with respect to the actual performance of similar airports (+0.43 minutes more delay per arrival).

3.3.5 PRB Key Points

- Brussels is the only airport included in the Belgian performance plan for RP3. The proposed target (all causes) is constant during 2021-2024 and equals to 1.08 minutes per arrival, which is higher than the observed performance in RP2 (0.95 minutes per arrival) for Brussels, therefore it does not represent an improvement with respect to the past performance.

3.4 Capacity Incentive schemes

Belgium

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.03 min	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.12	0.13	0.12
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.12	0.13	0.12
Pivot values for RP3			0.10	0.10	0.10

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A deadband of +/- 0.03 minutes is applied around modulated pivot value before any incentives apply. Maximum penalties or bonuses apply at +/- 0.05 minutes from pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 80% of total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of determined costs.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±25.0%	0.125%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.060	±0.060	±0.060
Performance Plan targets			1.08	1.08	1.08
Pivot values for RP3			0.12	0.12	0.12

Threshold and pivot value review

The terminal incentive scheme includes a deadband of +/- 25% that allows for small variations in the arrival ATFM delay with no resulting bonuses or penalties. The pivot value, modulated to CRSTMP causes, is 0.12 minutes per arrival, which is higher than the reported CRSTMP delays during RP2 (average 0.08 minutes per arrival).

Modulation review

Belgium has chosen to modulate the pivot values according to CRSTMP causes.

The CRSTMP ratio has been calculated based on the average ratio CRSTMP/all causes of the last five years (2014-2018). This gave a CRSTMP ratio of 11,11%, resulting in a pivot value of 0.12 minutes per arrival.

Review of financial advantages/disadvantages

The penalty (only 0.5%) and very low bonus (only 0.125%), together with the relatively low risk of not meeting the targets, do not seem to incentivise the ANSP to improve its performance.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✗

En route:

- Belgium has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation are the reference values for the ANSP.
- In addition to the national incentive scheme, a FAB-level incentive scheme also applies.
- Maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

- Belgium has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.
- The maximum penalty is set at 0.5%, the maximum bonus is set at 0.125%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined cost of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.
- As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.5 Investments

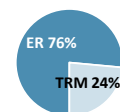
Belgium - skeyes

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	15.1	13.4	13.0	15.7	20.2	77.3
	En route	11.6	10.3	10.1	12.0	15.1	59.1
	Terminal	3.5	3.0	2.9	3.7	5.1	18.2

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	ATM Next Generation	This program focuses on replacing the current ATM system with a single, integrated and harmonised air traffic management system to support the integration of civil and military ATM services and to improve capacity and operational efficiencies. The program includes the upgrade of the current ATM system to extend its lifetime until the commissioning of the new system	86.6	Yes	Yes	1.2	0.3
2	remote radio sites	This project focuses on improving the redundancy and resilience of the air-ground radio communication infrastructure (Chain A, B and C), and involves the installation of 18 "new" sites for Enroute and Approach. The project comprises two investments: Remote radio sites and the electronic equipment transmitting and receiving centre.	12.8	No	No	1.2	0.2
3	Wide Area Networking	From mid 2022 onwards, skeyes' existing WAN (SDH network) will no longer be supported by the current Telco service provider, thus becoming obsolete. The creation of a new Wide Area Network (WAN) will support all skeyes operational and business critical processes and related IT systems. In particular, it will provide highly available, secure and scalable network connectivity to interconnect all skeyes locations (point of presence).	7.6	No	No	1.3	0.2
4	A-SMGCS 2 systeem EBRR	This project focuses on replacing the existing Advanced Surface Movement Guidance and Control (A-SMGCS) data fusion system, three Surface Movement Radars (SMR), and the MLAT system at Brussels Airport. The project comprises two investments: the A-SMGCS system and the cameras	5.9	Yes	Yes	0.0	1.0
Total:						3.7	1.7

Airspace user feedback regarding major investments

In 2021 the airspace users raised remarks about: (i) the necessity of investments on Air Traffic Safety Electronics Personnel; (ii) the inclusion of some investments in the en route part of the performance plan; (iii) the correlation of staffing increase with investments; and (iv) the increase in OPEX planned for RP3. Skeyes noted that investments are necessary due to end-of-life of existing systems. The level of investments initially decreased due to the impact of the pandemic, but will increase in 2022 in order to prepare for the subsequent increase in traffic. Synergies with the Belgian Defense were set up in order to mitigate the costs.

In 2022 airspace users raised several questions regarding the investment plan of skeyes during the consultations, more specifically on the allocation keys of some of the investments, on the impact and benefits the investments are expected to bring, and on the increase in depreciation. The NSA noted during the stakeholder consultation that further information regarding investments will be provided to airspace users.

Review of investments

While some investments above 5M€ are detailed in annex E of the performance plan, they are not included in the "new major investments" section. It is unclear if those investments are existing or split into multiple projects below 5M€.

Investment #4 was included in the RP2 performance plan and will continue throughout RP3. New major investments represent 7% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 72% of the planned for the same period and the amount underspent was 25.2M€. In terms of depreciation and cost of capital, the airspace users have financed 20.6M€ for investments that have not been materialised. The NSA noted that from a legal point of view, the legislation on underinvestment was different in RP2 than in RP3, therefore there is no legal requirement to re-fund users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Remote radio sites	Network, Local	Safety, Capacity	Increased level of safety for airspace users as a result of improved communication service resilience, guaranteed business continuity of air navigation services through reduced traffic disruption. Reduce risk of traffic disruption (traffic disruption due to system failure led to 52,920 minutes delay in 2015 and 7,442 minutes delay in 2018).
2	Wide Area Networking	Network, Local	Safety, Capacity, Cost-efficiency	Business continuity of air navigation services through reduced risk of data traffic disruption. Cost reduction and efficiency gains through the use of a more efficient, scalable network. Reduce risk of traffic disruption (traffic disruption due to system failure led to 52,920 minutes delay in 2015 and 7,442 minutes delay in 2018).

Additional information

Remote radio sites: "This investment includes the installation of remote radio sites including radio equipment, electronic equipment and infrastructure (shelters and pylons). The project includes installation of 18 "new" sites for Enroute and Approach communications with the following objectives:

- Objective 1: Installation of geo-redundant A+B sites (main redundant) to minimise risks.
- Objective 2: Installation of separate C-chain with nationwide coverage.
- Objective 3: Remove the need for implementation of Climax."

Wide Area Networking: "From mid 2022 onwards, skeyes' existing WAN (SDH network) will no longer be supported by the current Telco service provider, thus becoming obsolete. Skeyes has decided to implement a new network that will be easily upgradable both in capacity and size in order to address future demands. WAN is an important investment in skeyes' planning as many of the proposed RP3 investments depend on a reliable and efficient network. The new WAN will limit the risk of data traffic disruption at a national and local level due to reduced network issues (i.e. loss of data transfer)."

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	133.9	68.3	0.8	1.8	1.3	2.9	6.3	13.2
Existing investments			16.5	13.1	11.4	11.2	10.5	62.7

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls?

Belgium is expected to have a capacity surplus of 10% in 2022, reducing to 4% in 2024.

The main investment contributing to en route capacity enhancement is the ATM Next Generation project. However, the shared data services solution associated with the investment will mainly be developed during RP3 and deployed in RP4 indicating that the capacity contributions will not materialise, at least in full, during RP3.

In addition to the ATM Next Generation investment, the other major investments related to remote radio sites, wide area network renewal and replacement of co-operative surveillance sensors contribute to scalability, flexibility, and resilience.

The ATM Next Generation investment contributes to PCP/CP1 ATM Functionalities AF1, AF3, AF4, and AF6 and the A-SMGCS 2 system for EBBR investment contributes to AF2 and AF4.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?

The ATM Next Generation investment will upgrade the current ATM system and improve integration of the civil and military ATM components. Additionally, a contingency solution will be enabled and flexibility in the controller working position and airspace sector configuration allocation will be improved through the implementation of a shared data services solution between the civil and military ATM actors.

The investment related to the remote radio sites replaces the current communications infrastructure where the radio communications infrastructure operates from a single site improving resilience of service provision.

WAN investments are needed due to the existing WAN being no longer supported by the telco service provider, and the new WAN will be scalable both in terms of capacity and size, enabling addressing of future communications demands.

Investments in co-operative surveillance sensors – Mode-S and WAM – are required during RP3 in order to guarantee business continuity, enabling sensor diversity reducing the risk of common modes of failure and improving resilience.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?

The current ATM system received a mid-life upgrade in November 2018 (LSSIP Belgium 2018) and planning the renewal of the system has hence only just started. The ATM Next Generation investment will, for the most part, generate capacity benefits after RP3. Based on the recency of the mid-life upgrade, it can be argued that the renewal project is timed properly as the current system progresses towards end-of-life.

3.5.4 PRB Key Points

- While some investments above 5M€ are detailed in annex E of the performance plan, they are not included in the "new major investments" section. It is unclear if those investments are existing or split into multiple projects below 5M€.
- The actual CAPEX for RP2 was 72% of the planned for the same period and the amount underspent was 25.2M€. The airspace users have financed 20.6M€ for investments that have not been materialised.
- The 2019 submission of the performance plan included a drone detection system as other new investment. However, the investment was not included in the 2021 submission.
- Major investments targeting capacity, flexibility, resilience, and scalability are planned, however capacity benefits may only be achieved following RP3. Major investments contribute to PCP/CP1 ATM Functionalities AF1, AF2, AF3, AF4, and AF6.
- Other investments are also planned which contribute to flexibility, resilience, and scalability.

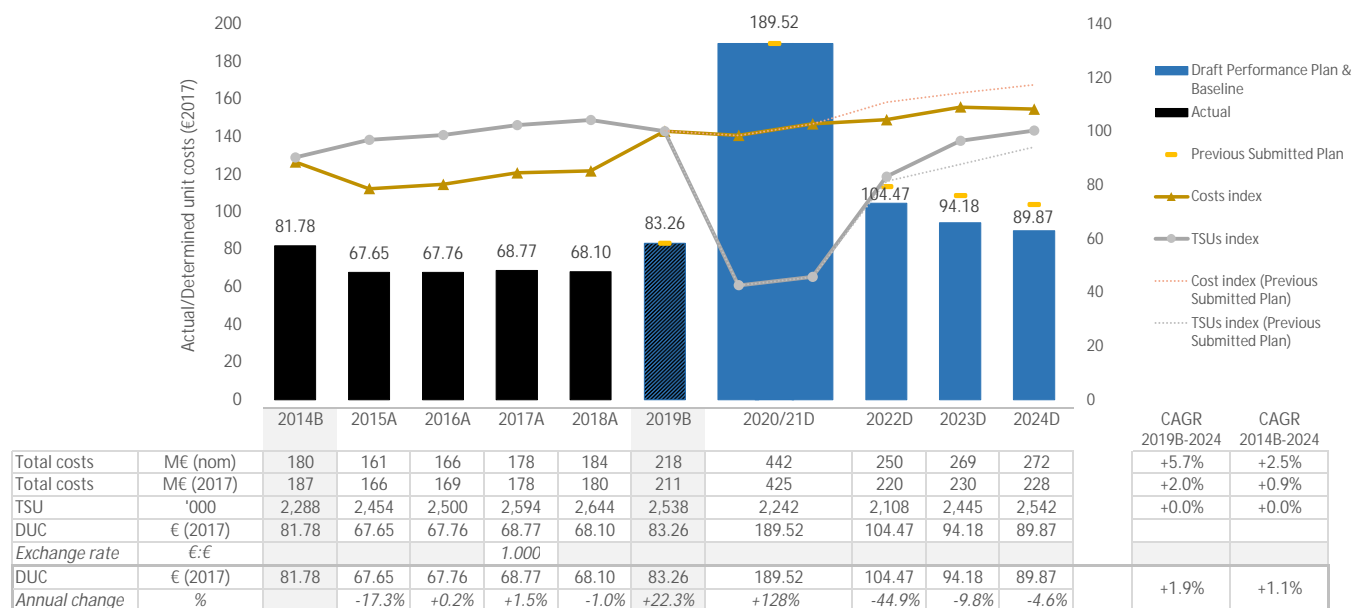
BELGIUM-LUXEMBOURG

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Belgium-Luxembourg - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified?

83.26 €2017



Several adjustments have been done to the 2019 cost baseline, the main one being linked to a change in the cost allocation methodology, resulting in a transfer of costs from the terminal charging zones to the en route charging zone. Overall the increase to the 2019 DUC baseline is significant (+22.3% compared to the actual unit cost for 2019).

4.1.3 Summary of cost-efficiency assessment results

a)	DUC trend 2019-2024 (RP3) consistent with Union-wide target?	+1.9%	✗
	The DUC is planned to increase on average by +1.9% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).		
b)	DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	+1.1%	✗
	The DUC is planned to increase on average by +1.1% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).		
c)	DUC level (2019 baseline) lower than the average of comparator group (E) average (73.53 €2017)?	+13.2%	✗
	The 2019 DUC level is +13.2% higher than the average of the comparator group.		
d)	Deviation exclusively due to measures necessary to achieve the capacity targets?		✗
	Even when assuming the request as appropriate, the deviation would not allow for the achievement of the cost-efficiency targets.		
e)	Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions



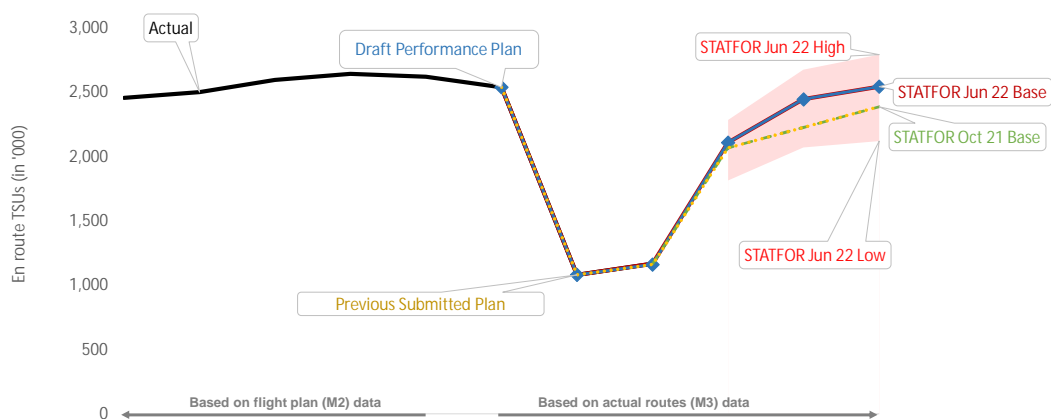
The PRB concludes that the cost-efficiency targets proposed by Belgium-Luxembourg should not be approved.

- Belgium-Luxembourg is not consistent with the RP3 DUC trend in terms of average reduction.
- Belgium-Luxembourg is not consistent with the long-term Union-wide DUC trend.
- Belgium-Luxembourg is not consistent with the average DUC baseline of the comparator group.
- Belgium-Luxembourg presents justifications for a possible deviation to achieve capacity targets. However, even assuming the request as appropriate, the deviation cannot be considered exclusively for the purpose of achieving capacity targets.
- Belgium-Luxembourg should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Belgium-Luxembourg should apply the inflation from the IMF April 2022 forecast.
- Belgium-Luxembourg should consider in the RP3 cost base the 20.6M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Belgium should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends and with respect to similar airports, or should revise terminal RP3 cost-efficiency targets downwards.

4.2 Review traffic forecasts and baseline

Belgium-Luxembourg - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	2,454	2,500	2,594	2,644	2,620	2,538	1,081	1,167				
Annual change	%		+1.9%	+3.7%	+1.9%	-0.9%	-4.0%	-57.4%	+8.0%				
STATFOR Jun 22 Base	'000 TSUs									2,108	2,445	2,542	+0.2%
Annual change	%									+80.6%	+16.0%	+4.0%	
STATFOR Oct 21 Base	'000 TSUs									2,066	2,226	2,387	-5.9%
Annual change	%									+77.1%	+7.7%	+7.2%	
Performance Plan	'000 TSUs						2,538	1,081	1,161	2,108	2,445	2,542	+0.2%
Annual change	%						-4.0%	-57.4%	+7.4%	+81.5%	+16.0%	+4.0%	

4.2.2 Traffic baseline review

2019	'000 TSUs	CRCO 12-month coefficient	2014	'000 TSUs	CRCO 12-month coefficient
2019B (PP baseline, M3)	2,538		2014B (PP baseline)	2,288	
2019A (as in the Reporting tables, M2)	2,620		2014A (as in the Reporting tables, M2)	2,362	
2019B/ 2019A	-3.13%	-3.13%	2014B/ 2014A	-3.13%	-3.13%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

The 2019 and 2014 traffic baselines were adjusted by the M2/M3 CRCO 12-months coefficient (-3.13%).

Review of 2014 and 2019 traffic baseline

The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-3.13%). The coefficient decreases the number of 2014 and 2019 traffic baselines while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

The en route traffic forecast presented in the performance plan is in line with the STATFOR June 2022 base scenario.

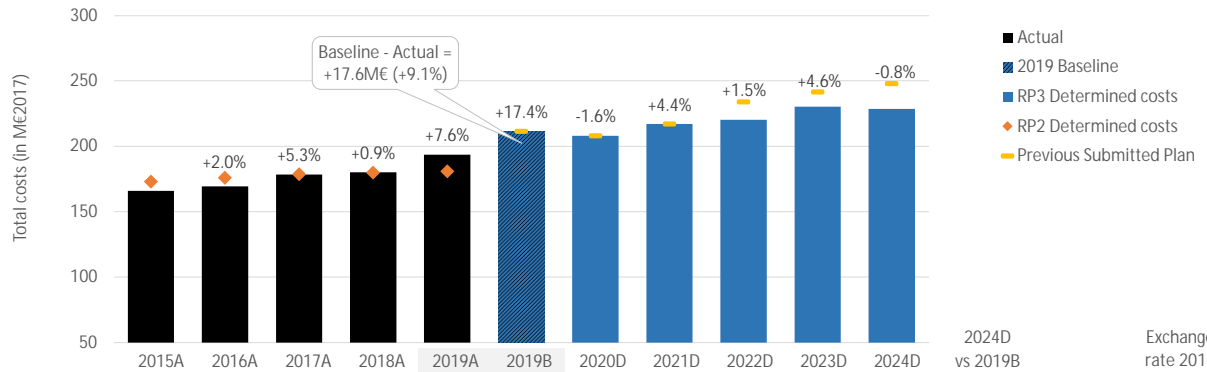
4.2.4 PRB Key Points

- Belgium-Luxembourg en route traffic forecast is in line with STATFOR June 2022 forecast.
- No major issues identified.

4.3 Review of determined costs and baseline

Belgium-Luxembourg - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



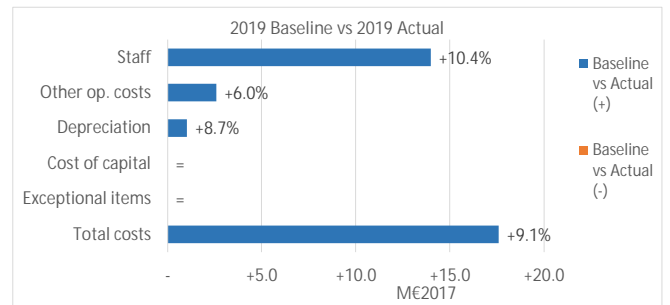
		2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B	Exchange rate 2017
Total costs	M€ (nom)	161	166	178	184	199	218	215	227	250	269	272	+24.8%	€:€
Annual change	%		+3.5%	+7.2%	+2.9%	+8.7%	+18.6%	-1.3%	+5.9%	+10.0%	+7.7%	+0.8%	+17.7%	1.00000
Inflation index	2017 = 100	96.1	97.8	100.0	102.3	103.5	103.5	103.9	105.7	115.6	119.6	121.8	+8.1%	
Total costs	M€ (2017)	166	169	178	180	194	211	208	217	220	230	228	+8.1%	
Annual change	%		+2.0%	+5.3%	+0.9%	+7.6%	+17.4%	-7.6%	+4.4%	+7.5%	+4.6%	-0.8%	+8.1%	
Total costs	M€ (2017)	166	169	178	180	194	211	208	217	220	230	228	+8.1%	

✗ Is inflation in PP in line with IMF (April 2022 forecast)? No

The inflation in the performance plan is not in line with IMF April 2022 forecast. The inflation index for 2022-2024 in the performance plan was computed using the inflation rate forecast of the Belgian Federal Planning Bureau (FPB). Belgium-Luxembourg considers "the application of the IMF inflation forecast for the updated submission of the performance plan as inappropriate. The inflation rates of the Federal Planning Bureau are consistent with the salary indexation and are in our opinion reflecting better the current economic situation with high pressure on oil, gas and food commodity prices."

4.3.2 Baseline review !

Baseline analysis	Δ M€2017	%
2014B vs 2014A	25.6	+15.9%
2019B vs 2019A	17.6	+9.1%



2014 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Cost base of ANA Luxembourg added	ANSP	Staff	+3.5
#2 - Cost base of ANA Luxembourg added	ANSP	Other ops.	+2.0
#3 - Cost base of ANA Luxembourg added	ANSP	Depreciation	+0.3
#4 - Change in APP allocation key	ANSP	Staff	+11.0
#5 - Change in APP allocation key	ANSP	Other ops.	+1.5
#6 - Change in APP allocation key	ANSP	Depreciation	+1.6
#7 - Adjustment of cost base	ANSP	Staff	+4.0
#8 - Adjustment of cost base	ANSP	Other ops.	+2.0
#9 - adjustment of cost base	NSA/EUROCONTROL	Staff	-0.3
#10 - adjustment of cost base	NSA/EUROCONTROL	Other ops.	-0.1

2019 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Change in APP allocation key	ANSP	Staff	+10.7
#2 - Change in APP allocation key	ANSP	Other ops.	+2.6
#3 - Change in APP allocation key	ANSP	Depreciation	+1.0
#4 - Adjustment of cost base	ANSP	Staff	+3.3
#5 - Adjustment of cost base	ANSP	Other ops.	+0.0
#6 - adjustment of cost base	NSA/EUROCONTROL	Staff	-0.2
#7 - adjustment of cost base	NSA/EUROCONTROL	Other ops.	+0.0
#8 - Change of allocation keys - effect on staff costs	ANSP	Staff	+0.1345
#9 - Change of allocation keys - effect on other operating costs	ANSP	Other ops.	-0.0052
#10 - Change of allocation keys - effect on depreciation costs	ANSP	Depreciation	-0.0066
#11 - Change of allocation keys - effect on cost of capital	ANSP	CoC	-0.0045

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

- The 2014 cost baseline has been adjusted to take account of ANA Lux, which was not included in the cost base in RP1 but only in the RP2 one. To compare over years, this effect should be neutralised and the cost base of 2014 for ANA Lux was added to the baseline value of 2014. The adjustment is mainly related to staff costs and other operating costs.
- The 2014 cost baseline (adjustments 4 to 6 above) and the 2019 (adjustments 1 to 3 above) have been adjusted for skeyes due to a change in the allocation key of the approach costs (detailed in Annex M of the performance plan and in 4.3.C of this document).
- The 2014 (adjustments 7 to 8) and 2019 (adjustments 4 to 5) cost baselines have been adjusted for MUAC in relation to the transfer of costs from the Eurocontrol budget to the MUAC budget (for tax compensation on pensions and agency support costs). The pension tax compensation related to MUAC is progressively borne by the four States of MUAC (over a period of seven years from 2016 to 2022). These pension tax compensation costs have been included since 2016 in a special Annex (to the general budget of Eurocontrol) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). Regarding the support costs, there is no progressive approach for these costs and they are supported directly at 100% by the four MUAC States. As from 2022 these costs will be included at 100% in MUAC (Part III) general budget. These adjustments are then deducted from Eurocontrol cost base and then from the 2014 baseline (adjustments 9 to 10) and from 2019 baseline (adjustments 6 to 7).
- The 2019 baseline has been adjusted to take into account the actual revised allocation keys of ANA Lux (adjustments 8 to 11), applicable for RP2 and reflects changes in the services provided and cost centres. The adjustments are related to staff costs, other operating costs, depreciation, and cost of capital.

2014/2019 baseline analysis

- The 2014 cost baseline adjustments, related to ANA Lux (adjustments 1 to 3 above) inclusion in the Belgium-Luxembourg en route cost base is justified and acceptable. The calculated adjustment (5.8M€2017) is lower when compared with the total 2015 actual costs, reported for the ANSP ANA Lux, in the reporting tables (6.3M€2017). Therefore the amount seems to be reasonable.
- The 2014 and 2019 cost baseline adjustments, relating to skeyes (adjustments 4 to 6 for 2014, 1 to 3 for 2019 above) due to a change in the methodology compared to RP2 in the allocation between en route and terminal, results in a transfer from the terminal charging zones to the en route charging zone. The impact on the en route baseline is significant with an increase of +14.2M€2017 for 2014 and +14.3M€2017 for 2019. The terminal 2019 baseline adjustment for EBBR presents a reduction of -4.4M€2017.
- The MUAC costs related adjustments to the 2014 and 2019 baselines (adjustments 7 to 10 for 2014, 4 to 7 for 2019 above) for the tax compensation and agency support costs seem justified.
- The 2019 baseline adjustment relating to the revised allocation keys of ANA Lux (adjustments 8 to 11) has a limited impact on the baseline value. However, it would have been expected that the baseline value matches the allocation changes applied in the Luxembourg's terminal charging zone.

4.3.3 Review of the RP3 determined costs and incentives

Review of 2020/2021 determined costs

2020 determined vs actual
2021 determined vs actual

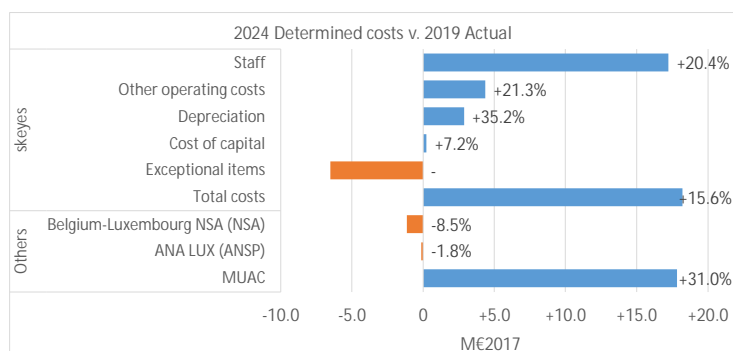
M€2017	%
+0.0	+0.0%
+11.9	+5.8%

Review of cost elements

- 🕒 Investments (see details in 3.5)
- ✅ Cost of capital (see details in 4.3.1)
- 🕒 Pension costs (see details in 4.3.2)
- 🕒 Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



The total costs of Belgium-Luxembourg is planned to increase by +18.0% (+34.8M€2017), between 2019 actuals and planned 2024. The main contributors to this planned increase in costs are skeyes (+15.6%, or +18.2M€2017) and MUAC (+31.0%, or +17.8M€2017).

For skeyes, the planned increase in costs is largely driven by additional staff costs (+20.4%, or +17.2M€2017 between 2019 and 2024).

- According to the information in Annex A of the performance plan, the increase in staff costs is related to the recruitment and training of new ATCOs to address the wave of pre-retirement and to prepare for traffic recovery, the growing number of pre-retired ATCO and the associated charge over RP3, the recruitments of the necessary technical and project resources for the roll out of the investment plan bound to compulsory replacement and regulations, and inflation and indexation on wages. Staff costs were revised downwards compared to the performance plan submitted in November 2021 by -21.6M€2017 for 2022 to 2024 altogether (or by -6.7% for the 3-year period).

- The other operating costs are planned to increase by +4.4M€2017 (+21.3%) between 2019 and 2024, due to external project management and maintenance associated with new investments. Other operating costs were revised downwards compared to the performance plan submitted in November 2021 by -8.6M€2017 for 2022 to 2024 altogether (or by -10.7% for the 3-year period).

- The increase in depreciation costs (+35.2%, or 2.9M€2017 between 2019 and 2024) is explained by the fact that the "fixed assets base is expected to increase significantly (71% increase in NBV over RP3) due to important CAPEX projects most of which are either for replacement and continuity (e.g. Surveillance Radars. Radio communication,...) or for investing in a sustainable capacity (NextGen ATM)". Depreciation costs were revised downwards compared to the performance plan submitted in November 2021 by -5.1M€2017 for 2022 to 2024 altogether (or by -15% for the 3-year period).

- The cost of capital is planned to increase by +0.2M€2017 (+7.2%) between 2019 and 2024, it is arising from the growth in fixed assets, whereas the RoE and WACC rates are lower. The costs of capital "has been kept totally unchanged in value compared to the performance plan submitted in November 2021 despite rising interest rates and increased turbulences on the financial markets which represent a higher investor's risk". "The future receivables arising from the correction mechanism and the traffic Gap from the covid are not and were not included in the calculation base".

- According to BSA instructions, the difference between the determined cost 2021 and the 2021 actual values will be refunded to airspace users in 2024 through negative exceptional costs recorded in 2024. This leads to a difference of -6.4M€2017 compared to the performance plan submitted in November 2021.

MUAC costs for Belgium-Luxembourg (30.5% of the en route cost-base in 2024) show a +31.5% cost increase between 2019 and 2024, mainly due to an increase in staff costs. The main reasons are: the indexation of remuneration, the integration of costs for tax compensation, the additional ab initio intake, and the "General Condition of Employment package". In 2019, a new GCE agreement was concluded which resulted in a rise in wages for each ATCO in return for extra workload (+/- 10% pay rise in return for +/-10% extra shifts).

Overall, the revised determined costs have been revised downwards compared to the performance plan submitted in November 2021 (-41.4M€2017, or -9.5% in total for the 3-year period 2022-2024, while the forecast TSUs have been revised upwards by +6.2%).

4.3.4 PRB Key Points



- The inflation in the performance plan is not in line with IMF April 2022 forecast. The inflation index for 2022-2024 in the performance plan was computed using the inflation rate forecast of the Belgian Federal Planning Bureau (FPB).

- Several adjustments have been made to the 2014 and 2019 cost baseline, the main one being linked to a change in the cost allocation methodology, resulting in a transfer of costs from the terminal charging zones to the en route charging zone. Moreover, the adjustment related to ANA Lux does not match the changes applied to its terminal charging zone.

- The total costs of Belgium-Luxembourg are planned to increase by +18.0% (+34.8M€2017), between 2019 actuals and planned 2024. The main contributors to this planned increase in costs are skeyes (+15.6%, or +18.2M€2017) and MUAC (+31.0%, or +17.8M€2017). For both skeyes and MUAC, the planned increase in costs is largely driven by additional staff costs.

- In RP2, in terms of depreciation and cost of capital, airspace users have financed 20.6M€ for investments that have not been materialised. The NSA noted that from a legal point of view, the legislation on underinvestment was different in RP2 than in RP3, therefore there is no legal requirement to re-fund users.

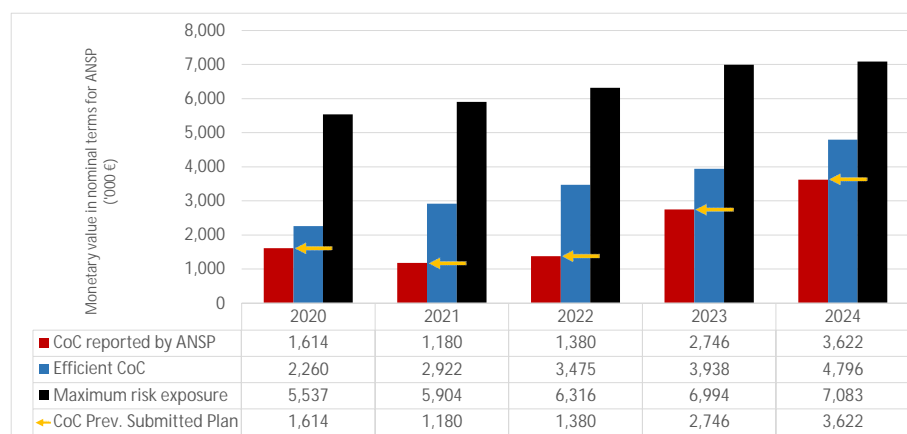
4.3.A Cost of capital

skeyes - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	125,844	134,183	143,554	158,956	160,967
Monetary value of Return on Equity	1,532	1,157	1,368	2,729	3,597
Ratio RoE/DC (%)	1.2%	0.9%	1.0%	1.7%	2.2%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	2.2%	3.9%	2.3%	5.3%	2.5%	5.5%	3.8%	5.2%	3.8%	5.4%
Interest on debts	1.0%	0.0%	0.1%	1.3%	0.0%	1.5%	0.1%	1.3%	0.1%	1.3%
Capital structure (% debt)	10.7%	25.6%	28.3%	28.8%	31.7%	29.3%	25.6%	29.1%	16.7%	29.1%
WACC	2.1%	2.9%	1.7%	4.2%	1.7%	4.3%	2.8%	4.1%	3.2%	4.2%

Is the interest on debts in line with the market? Yes

- Skeyes received three loans, one from Eurocontrol in the autumn of 2020 and two from the Belgian Federal State in 2020 and 2021. The loan from Eurocontrol is being reimbursed by the loans received from the State. The interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.
- The WACC reported in the performance plan has been calculated based on the CAPM. The efficient WACC has been calculated based on option 1.
- The embedded return on equity over RP3 varies from a minimum of 0.9% to a maximum of 2.2%. The monetary value of the embedded return on equity is commensurate to the determined costs over RP3.
- Adjustments to the proposed cost of capital do not seem to be necessary over RP3.

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	75,149	77,122	92,732	110,889	125,777
Net current assets	2,811	-6,994	-12,584	-14,362	-12,153
Adjustments total assets	0	0	0	0	0
Total asset base	77,960	70,127	80,148	96,528	113,624

- The fixed asset base is planned to significantly increase over RP3, in line with the increase in investments described in section 3.5 of this document.
- The net current assets do not seem to present major issues.
- The RAB does not include adjustments to the total asset base.
- The total asset base will increase over RP3, driven by the increase in the fixed asset base.

4.3.A.5 PRB Key Points

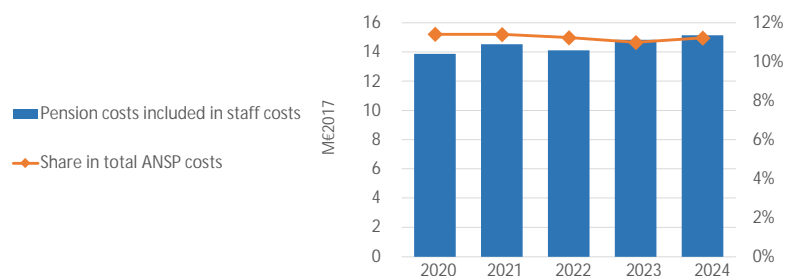


- The cost of capital does not present major issues.

4.3.B Pensions

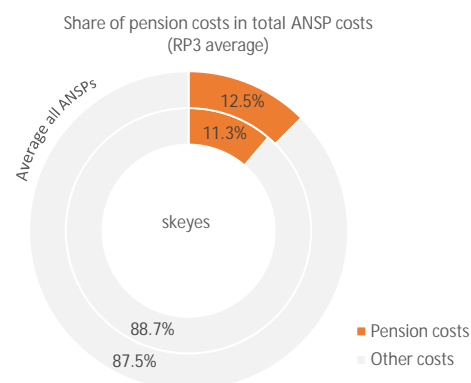
skeyes - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	ME2017	2020	2021	2022	2023	2024
Pension costs included in staff costs		13.9	14.5	14.1	14.8	15.1
Year on year variation	% change		+4.8%	-2.9%	+5.1%	+2.0%
Share in total ANSP costs	%	11.4%	11.4%	11.2%	11.0%	11.2%
Year on year variation	p.p.		0.0p.p.	-0.2p.p.	-0.2p.p.	0.2p.p.

What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight decrease**



Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **No**

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **No info**

No information is provided in the performance plan regarding the main actuarial assumptions, apart from the number of employees that the employer contributes for this scheme, that grows from 385 in year 2020 up to 425 in 2024.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

No specific action is described in the performance plan apart from indicating that the pension costs have been determined based on existing regime and that "any unforeseen changes on the costs to be passed on to airspace users will be duly motivated".

4.3.B.4 PRB Key Points

- The increase in pensions costs is related to the increase in the number of staff.
- No major issues identified, but no information is provided in the performance plan regarding the main actuarial assumptions of the defined benefit scheme.

4.3.C Methodology for cost allocation between ER and TRM

Belgium

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Skeyes reports to have an "activity-based costing system" designed to allocate as many costs as possible directly to the appropriate cost/activity centre. Skeyes lists cost centres at four levels: 1) organisational units, 2) type of services, 3) final products (e.g. ACC, APP, terminal, etc), and 4) airports. Also, skeyes structures the cost centres in various groups including: 1) corporate, 2) operations (ATS, "Meteo" and AIS), 3) equipment, 4) finance and administration, and 5) buildings. For costs that may not be allocated directly to cost centres, skeyes defines allocation keys based on the general principle that every user (internal customer) is paying for the requested services.
- The expenses directly allocated by skeyes to en route include: 1) staff costs of en route controllers and engineers working on development and maintenance of en route systems, 2) depreciation of equipments, systems and buildings used in ACC, and 3) communication of en route data and maintenance costs of en route systems.
- Allocation keys of shared expenses vary with the nature of the cost. Examples of keys are the number of positions, number of controllers, m², frequencies, time spent in the area, etc.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

Yes

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

Belgium reports that for RP3 it changed the cost allocation methodology of: 1) approach services and 2) supervision costs. Skeyes proposes to assign the costs of approach services entirely to en route, while keeping the aerodrome control services within terminal. Skeyes justifies this change stating that it better reflects the operational arrangements and the airspace structure in RP3.

In RP2, skeyes obtained the en route share of approach costs by estimating the total volume of controlled airspace from which it deducted a 20km "cylinder" around an airport. However, according to skeyes, most of the workload of approach controllers occurs outside the 20km cylinder, and therefore the allocation method in RP2 assigned a disproportionate part of approach costs to terminal.

For supervision costs in RP3, the cost allocation methodology will better reflect the workload related to each charging zone and each regional airport. Belgium states that the cost allocation key in RP3 "is based on the proportion of notifications of changes with potential impact on safety related to each unit (ACC, APP, TWR) during the last 3 years". In contrast, the RP2 supervision costs were allocated proportionally to the cost base of each charging zone and each final product (that is ACC, APP, and TWR).

2.2. Are these changes in cost allocation duly described and justified?

Yes

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

Yes

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

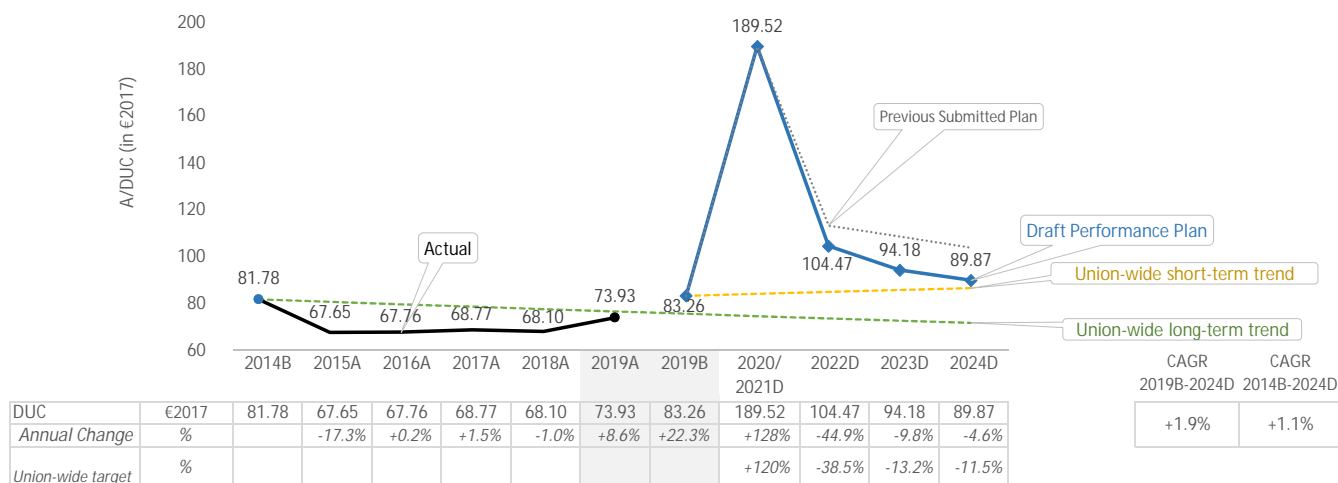
The impact on the 2019 baseline due to the change in the approach allocation methodology is an increase of +14.3M€2017 in en route costs. In Annex M, the sum of the total impact of all the airports corresponds to the absolute amount reallocated to en route, while in the performance plan the only terminal charging zone is EBBR airport (-4.4M€2017). Belgium explains that the difference of the absolute amounts deducted from airports is due to the airspace structure (some airports having larger TMAs than others). It is however questionable that the deduction for EBBR airport is equivalent to the deductions of EBCL and EBLG airports, considering the differences of size of these airports.

4.3.C.3 PRB Key Points



- Belgium changed the cost allocation methodology with respect to RP2 for approach services and supervision costs on the basis of operational requirements. There is no record of airspace users opposing to the proposed changes to the cost allocation methodology during the performance plan consultation. However, allocating the approach services fully to en route implies that overflights are financing approach services which they do not use (see PRB en route and terminal cost allocation methodology review).
- The impact on the 2019 baseline due to the change in the approach allocation methodology is an increase of +14.3M€2017 in en route costs, which corresponds to the sum of the total impact of all the airports, while in the performance plan the only terminal charging zone is EBBR airport (-4.4M€2017). Belgium explains that the differences of the absolute amounts deducted from airports is due to the airspace structure. It is however questionable that the deduction for EBBR airport is equivalent to the deductions of EBCL and EBLG airports, considering the differences of size of these airports.

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency

	Trend (CAGR 2019B-2024)	Performance Plan	Union-wide	Difference
✗ DUC consistency with the Union-wide RP3 DUC target		+1.9%	+1.0%	+0.9p.p.
✗ DUC consistency with the Union-wide long-term DUC target trend		+1.1%	-1.3%	+2.4p.p.

	2019 baseline	Performance Plan	Average comparator group	Difference
✗ DUC level consistency		83.26	73.53	+13.2%

- The DUC is planned to increase on average by +1.9% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
 - The DUC is planned to increase on average by +1.1% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
 - The 2019 DUC level is +13.2% higher than the average of the comparator group. It is also noted that the DUC for Belgium-Luxembourg is expected to remain higher than the average DUC of the comparator group for the remainder of RP3.
 - Belgium-Luxembourg presents justifications for a deviation to achieve capacity targets.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

Deviation (in M€2017): vs RP3 criteria +8.2 vs RP2+RP3 criteria +43.7

Additional determined costs related to measures necessary to achieve the en route capacity targets (in M€2017)

	2020D	2021D	2020/2021D	2022D	2023D	2024D	Σ 2020-2024	PP deviation
Staff	4.2	4.9	9.1	5.4	6.4	6.8	27.7	9.2
of which, pension costs	0.3	0.4	0.8	0.4	0.5	0.5	2.3	0.8
Other operating costs	4.4	6.6	11.0	8.9	10.1	10.1	40.2	13.4
Depreciation	-	-	-	-	-	-	-	-
Cost of capital	-	-	-	-	-	-	-	-
Exceptional items	-	-	-	-	-	-	-	-
Total additional costs of measures	8.6	11.5	20.1	14.3	16.5	16.9	67.8	22.6

Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

Skeyes:

To prepare for the expected resumption of air traffic during RP3, skeyes must ensure its ATCO capacity is maintained at appropriate levels. Skeyes has an aging ATCO population, resulting in a large number of ATCOs reaching pre-retirement age during RP3 and RP4. To compensate, additional ATCOs shall be recruited and trained to ensure skeyes operational capacity is retained. Furthermore, skeyes intends to replace its ATM system with a single, integrated and harmonised airspace management system with MUAC and BEL DEF to support the integration of civil and military ATM services and to improve capacity and operational efficiencies.

MUAC:

In 2019, an agreement was closed on new general conditions on employment, which increases ATCO availability in order to mitigate the gap between staff availability and traffic demand. In addition, and to provide a structural solution, additional ATCOs were hired and consequently also needed to be trained, causing an additional training cost.

The PABI project aims to optimize further the planning of daily operations.

The Manpower planning system-tool aims to create a more advanced rostering system.

Demonstration that the deviation is exclusively due to the additional costs related to measures necessary to achieve the capacity targets

Together with the replacement of end of life equipments, the recruitment and training of new ATCO, and the ATM next gen are mandatory to safeguard business continuity and capacity over RP3. This is developed more in depth in the annexes E and R of the performance plan.

Analysis

Based on the information provided in annex R and E of the performance plan:

- An ATCO recruitment plan seems justified. Skeyes report in a table in annex R of the performance plan an adverse age pyramid in its ATCO population, with 36% of the operational air traffic controllers older than 50 years who will reach the pre-retirement age during RP3, and an extra 19% who will reach pre-retirement in RP4 as they are currently older than 45 years.
- Regarding investment costs, the RP2 CAPEX monitoring report shows that the actual CAPEX that was foreseen for RP2 was not realised and, over the whole reference period, the total actual investment costs have been significantly lower than those determined in the performance (by -30%). However, the claim seems valid since it is related to operational costs associated to investments that will be finally executed and not to investments needs of RP3 that may have been charged to users in RP2 while not being implemented.
- Belgium-Luxembourg is deviating by +8.2M€2017 and +43.7M€2017 from the RP3 and long-term trend, respectively. The costs considered for the PP deviation amounts to 22.6M€2017, which are greater than the deviations from the RP3 trend. However, they do not suffice to cover the deviation from the long-term trend. Moreover, more details are needed to justify the deviation, especially more transparency is required with respect to the changes included in the revised performance plan against the performance plan submitted in November 2021.

✘ Can it be considered that the deviation is exclusively for the purpose of achieving the capacity targets? No

4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

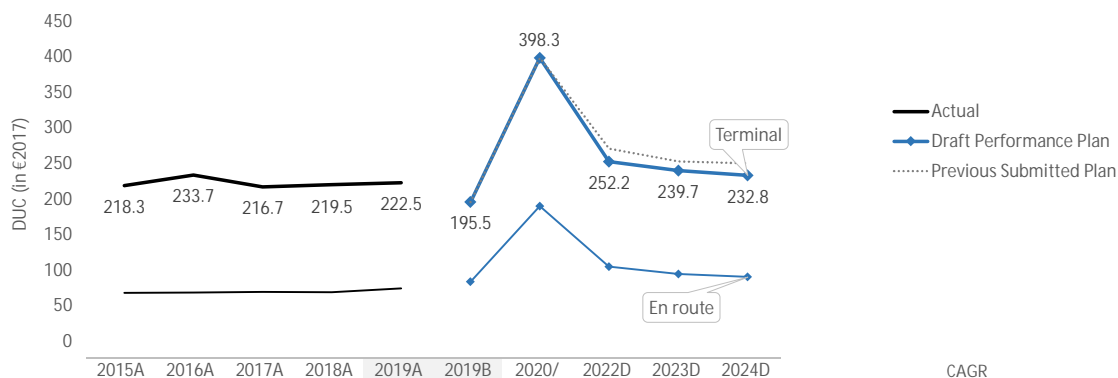
4.4.5 PRB Key Points ✘

- Belgium-Luxembourg is not consistent with the RP3 DUC trend in terms of average reduction.
- Belgium-Luxembourg is not consistent with the long-term Union-wide DUC trend.
- Belgium-Luxembourg is not consistent with the average DUC baseline of the comparator group.
- Belgium-Luxembourg presents justifications for a possible deviation to achieve capacity targets. Even when assuming the request as appropriate, the deviation cannot be considered exclusively for the purpose of achieving capacity targets.

4.5 Terminal

Belgium

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	218.3	233.7	216.7	219.5	222.5	195.5	398.3	252.2	239.7	232.8	+4.5%
Annual Change	%		+7.1%	-7.3%	+1.3%	+1.4%	-11.0%	+104%	-36.7%	-5.0%	-2.9%	
DUC - En route	€2017	67.6	67.8	68.8	68.1	73.9	83.3	189.5	104.5	94.2	89.9	+1.9%
Annual Change	%		+0.2%	+1.5%	-1.0%	+8.6%	+22.3%	+128%	-44.9%	-9.8%	-4.6%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Brussels (EBBR)	GROUP I	138.9	224.1	+61.4%	176.0	271.9	+54.5%

* GROUP I - Avg. mvts. in 2016-2018 \geq 225,000; GROUP II - Avg. mvts. in 2016-2018 \geq 80,000 and $<$ 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 \geq 80,000 and $<$ 225,000 and not seasonal; GROUP IV - mvts. in 2016-2018 $<$ 80,000

The average unit cost for Brussels (EBBR) was significantly higher than the median of their comparator group during RP2 (+61.4%). The difference is planned to be slightly lower during RP3 (+54.5%).

4.5.3 Elements subject to review

Baseline review (terminal)

Traffic

Traffic Baseline analysis		Δ '000 TSUs	%
2019B vs 2019A	TCZ1	0.0	+0%
2019 Traffic Baseline Adjustments	TCZ1	No	

Costs

Cost Baseline analysis		Δ M€2017	%
2019B vs 2019A	TCZ1	-4.4	-12.2%

2019 Cost Baseline Adj.	TCZ	Entity Type	Nature	M€2017
#1 - Change in APP allocation key	TCZ1	ANSP	Staff	-3.3
#2 - Change in APP allocation key	TCZ1	ANSP	Other ops.	-0.8
#3 - Change in APP allocation key	TCZ1	ANSP	Depreciation	-0.3

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

The 2019 cost baseline has been adjusted for skeyes due to a change in the allocation key of the approach costs. Detailed information is provided in annex M of the performance plan.

2019 baseline analysis

There is a change in the allocation key of the approach costs for skeyes. The change in the methodology compared to RP2 corresponds to a transfer from the terminal charging zones to the en route charging zone. The impact on the en route baseline is very significant with an increase of +14.3M€2017. The terminal 2019 baseline adjustment for EBBR presents a reduction of -4.4M€2017. The impact of the cost allocation change on the different airports of Belgium is provided in annex M of the performance plan.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024?	Yes
--	-----

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

As for en route, the terminal traffic forecast presented in the performance plan is in line with the STATFOR June 2022 base scenario.

Determined costs (terminal)

✘ Is inflation in PP in line with IMF (April 2022 forecast)? No

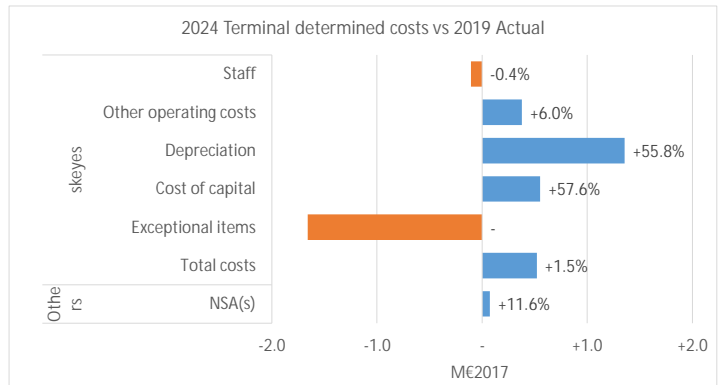
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+2.4	+7.6%

Cost elements - skeyes (terminal)

- 🔴 Investments (see details in 3.5)
- ✅ Cost of capital
 - Interest on loans
 - RoE
 - WACC
- 🔴 Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.13%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



- The share of terminal investment costs (24%) is slightly higher than the share of terminal total costs (21%).
- Terminal WACC and its parameters are equivalent to the ones for en route for the whole period.
- The share of terminal pension costs in total pension costs (21%) are equivalent to the share of terminal total determined costs.
- The terminal DUC trend over RP3 planned for Belgium TCZ (+4.5% p.a.) is higher than the one planned for en route (+1.9% p.a.).
- For skeyes, total costs in 2024 are planned to be above the 2019 actuals (+1.5%, or +0.5M€2017). The main driver is not the staff costs, as it is the case for en route. For terminal the increase in the planned costs is mainly due to the depreciation costs, which are +55.8% (+1.4M€2017) higher in 2024. No specific information about terminal determined costs is available in the terminal additional information (section F) to the reporting tables, since the very same information is reported in this section F for en route. In annex E of the performance plan, skeyes provides detailed information on the new investments and the cost allocation between en route and terminal, which shows an extensive agenda of investments planned in RP3 for terminal (detailed analysis of investments is provided in section 3.5 of this document). This accelerate level of investments has an impact as well in operating costs that are higher (+6.0%, or +0.4M€2017) due to the external project management and maintenance associated with new investments, and in higher costs of capital (+57.6%, or +0.6M€2017) mainly due to a significant increase in fixed assets and net current assets.
- Overall, the revised determined costs have been revised downwards compared to the performance plan submitted in November 2021 (-4.9M€2017, or -4.4% in total for the 3-year period 2022-2024) while the forecast TNSUs have been revised upwards by +2.0%.

4.5.4 PRB Key Points ✘

- The terminal RP3 DUC trend is +4.5%, which is worse than the en route RP3 DUC trend of +1.9%.
- The terminal RP3 DUC trend is +4.5%, which is worse than the terminal RP2 DUC trend of +0.5%.
- Brussels airport, the only airport included in the scope of the performance plan, had a DUC +61.4% higher than the median of its comparator group over RP2. The difference is expected to become +54.5% over RP3.
- Belgium applies STATFOR June 2022 base scenario forecast.
- The 2019 cost baseline has been adjusted following a change in the cost allocation between terminal and en route.
- Skeyes total costs in 2024 are planned to be +1.5%, or +0.5M€2017 above 2019 actuals.

PRB Assessment

FRANCE

Draft Performance Plan

Context and scope

France

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6125, F6126, F6129, F5736, F5737, F5738, F5739, F5740, F5741, F5653-F5689, F5691, F5692, F5693, F5694, F5695, F5696

Relative weight compared to the SES area (2019):

% Flight-hours vs SES 18.4%
 % Serv. Units vs SES 17.3%
 % Costs vs SES 21.2%

Scope

FAB: FABEC

ANSPs: DSNA
 Météo France

Other entities (as per Article 1(2) last para. of Regulation 2019/317): French Civil Aviation Authority, Air Transport Directorate
 Eurocontrol

ATM
 MET

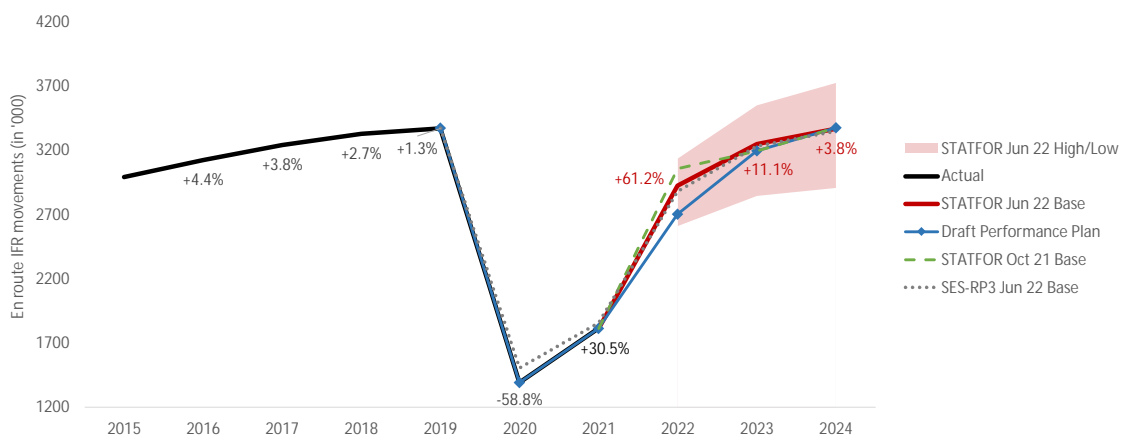
Competent authority
 NM/CRCO

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	France	n/a	No	No	No	
Terminal (TRM)	France - Zone 1 France - Zone 2	2 56	No No	No No	No No	
Changes in the CZs from RP2	No					

Comparator group: Group A Other States in the comparator group: Germany
 Italy
 Spain

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
DSNA	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	B	B	C	C	C

Previous submitted PP

DSNA	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	B	B	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by France should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
ANSP target for horizontal en route flight efficiency (KEA) (%)	-	2.92%	2.83%	2.83%	2.83%
Previous submitted PP	3.33%	2.92%	2.83%	2.83%	2.83%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC for France should be approved.

- France's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that France did not achieve the 2021 target of 2.92% in its performance plan.
- Due to insufficient environmental performance in past years and missing measures introduced to achieve RP3 targets, France remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	3.12	0.18	0.25	0.25	0.25
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.40	0.40	0.40	0.40	0.40
Previous submitted PP (en route)	3.12	0.18	0.25	0.25	0.25
Previous submitted PP (terminal)	0.00	0.40	0.40	0.40	0.40

PRB assessment

The PRB concludes that the capacity breakdown values proposed by France should be approved.

- France may experience a major capacity gap in Reims ACC during all years of RP3, in Brest ACC and Bordeaux ACC in 2023 and 2024, if additional capacity enhancement measures are not implemented.
- There are discrepancies in the performance plan between capacity profile plans, planned number of ATCO FTEs, proposed capacity enhancement measures, and proposed breakdown values.
- The incentive schemes defined in the performance plan do not have a material impact on the revenue at risk.
- The transition projects in French ACCs will likely have a significant impact on the ANSPs of neighbouring Member States and on the European ATM Network during 2022-2024.
- Due to the foreseen major capacity gaps and the network-wide effects associated with the planned transition projects in French ACCs, France has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.

4. Cost-efficiency 

Cost-efficiency PP targets

		2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route		132.06	76.14	62.09	58.56	-0.4%	-1.2%
	TCZ1	189.83	114.46	102.21	97.81	+0.6%	n/a
Target for determined unit cost (DUC) (€2017) - Terminal		659.13	354.93	338.81	319.52	-2.4%	n/a
	TCZ2	659.13	354.93	338.81	319.52	-2.4%	n/a
<i>Previous submitted PP (en route)</i>		<i>132.06</i>	<i>76.14</i>	<i>62.09</i>	<i>58.56</i>	<i>-0.4%</i>	<i>-1.2%</i>
	TCZ1	<i>189.83</i>	<i>114.46</i>	<i>102.21</i>	<i>97.81</i>	<i>+0.6%</i>	<i>n/a</i>
<i>(terminal)</i>		<i>659.13</i>	<i>354.93</i>	<i>338.81</i>	<i>319.52</i>	<i>-2.4%</i>	<i>n/a</i>
	TCZ2	<i>659.13</i>	<i>354.93</i>	<i>338.81</i>	<i>319.52</i>	<i>-2.4%</i>	<i>n/a</i>

PRB assessment

The cost-efficiency targets of France have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

The PRB concludes that the cost-efficiency targets proposed by France should be approved.

- France is consistent with the RP3 DUC trend in terms of average reduction.
- France is not consistent with the long-term Union-wide DUC trend. However, the difference is negligible therefore the trend can be considered consistent with the Union-wide one.
- France is consistent with the average DUC baseline of the comparator group.
- France presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

5. PRB recommendations

ENVIRONMENT

- France should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- France should ensure that all capacity enhancement measures are properly implemented and are aligned with the reference values.
- France should reduce and mitigate the significant impact of its transition projects on the ANSPs of neighbouring Member States and the airspace users by closely coordinating with the Network Manager.
- France should align capacity profile plans, capacity enhancement measures, and proposed capacity breakdown values.
- France should revise the incentive schemes so that they have a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

ENVIRONMENT

- France should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- France should ensure that all capacity enhancement measures are properly implemented and are aligned with the reference values.
- France should reduce and mitigate the significant impact of its transition projects on the ANSPs of neighbouring Member States and the airspace users by closely coordinating with the Network Manager.
- France should align capacity profile plans, capacity enhancement measures and proposed capacity breakdown values.
- France should revise the incentive schemes so that they have a material impact on the revenues.

FRANCE

Safety KPA

1.1 Summary of safety key data and assessment results

France

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2022. France has already met the RP3 safety targets in 2021.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered sufficient and adequate to maintain the required safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA levels. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

The performance plan describes detailed change management processes and transition plans compliant with Commission Implementing Regulation (EU) 2017/373. The processes provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by France should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

France

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
DSNA	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	D	D	D	D	D	D	D	✓	
	Safety assurance	C	C	C	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	B	C	B	B	C	C	C	✓	

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2022. In 2021, France has already met the RP3 safety targets.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA, and the FABEC Authorities.

At ANSP level, the measures are planned to be implemented in the following areas:

- Safety culture assessment and promotion;
- Review and update of the hazard identification and analysis processes;
- Management of improvements in safety that address key risks;
- Application of data science to systematically learn from safety data; and
- Update of Safety Risk Target document and corresponding Unit Safety Case.

At the level of the Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373, applicable to EoSM improvements are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment).

Indicators, issues and possible trade-offs are discussed, explained, and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

Change management practices and transition plans for the implementations of major airspace changes or the ATM system improvements are handled with "Managing Successfully Programs", a specific method established by DSNA. The practices are compliant with Commission Implementing Regulation (EU) 2017/373.

Additionally, a specific safety-orientated approach was developed, called the "Integrated Safety Approach". The approach aims to improve the safety management system, particularly related to safety event analysis in the safety studies, harmonisation and optimisation of safety studies and improved management of the human factor element in the functional system. The new approach built on Commission Implementing Regulation (EU) 2017/373 further improves the safety management system in important areas.

All described processes provide assurance that the new implementation will be conducted in a manner that it minimises any negative impact on the network performance.

FRANCE

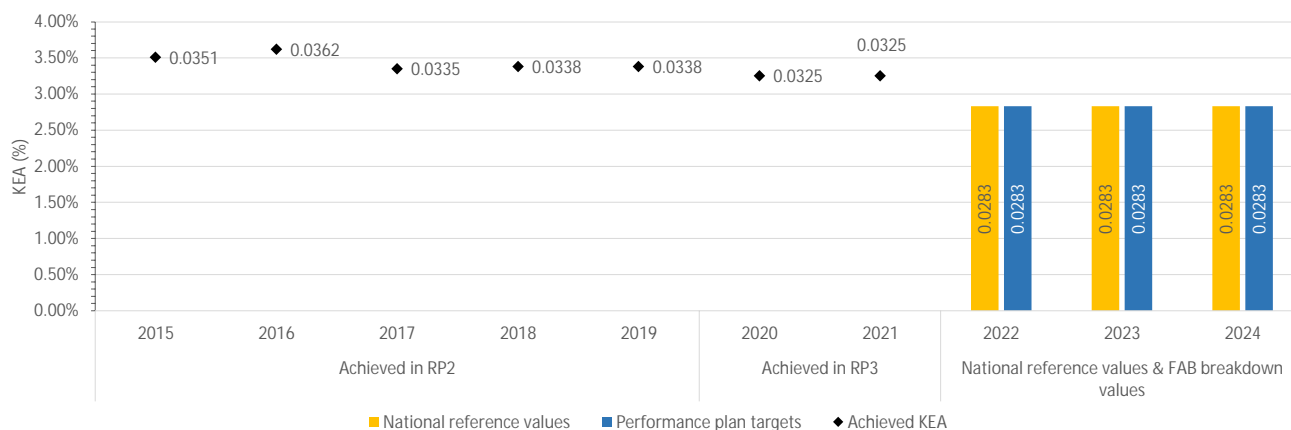
Environment KPA

2.1 Summary of Key Data and Assessment Results

France

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	2.90%	2.92%	2.83%	2.83%	2.83%
FAB breakdown values	n/a	2.92%	2.83%	2.83%	2.83%
Comparison of draft breakdown values with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC for France should be approved.

- France's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that France did not achieve the 2021 target of 2.92% in its performance plan.
- Due to insufficient environmental performance in past years and missing measures introduced to achieve RP3 targets, France remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- France should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

France

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✘	Reference in PP	Reference in LSSIP
France operates H24 FRA in parts of upper airspace (Bordeaux, Brest, and Paris ACC) above FL195. An ATS route network remains in the rest of French airspace. It does not plan for a full free route airspace (FRA) until 2025.		3.2.1(a)	Page 94
Major 2021 ERNIP Recommended Measures:	18	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1(a)	Page 201
PBN transition plan	✔	3.2.1(a)	Page 121
Brest ACC re-organisation	✔	n/a	Page 116
Improved interface LIRR/LFMM concerning Sardegna	✘	n/a	Page 140
MODOU Project	✘	3.2.1(a)	Page 150
FRA Bordeaux – Step 1	✔	3.2.1(a)	Page 149
FRA Brest Atlantic – Step 1	✔	3.2.1(a)	Page 150
FRA Paris – Step 1.1	✔	n/a	Page 180, 181
Brest ACC re-organisations step 6 and 7	✘	3.2.1(a)	Page 205
Free Route Airspace Brest Continental West- Step 1.2	✔	3.2.1(a)	Page 216
Free Route Airspace Marseille ACC - Step 2.0	✔	3.2.1(a)	Page 216
Free Route Airspace Brest Continental East- Step 1.3	✔	3.2.1(a)	Page 215
Free Route Airspace Reims - Step 2.0	✔	n/a	Page 215
LUMAS, Phase 2b Marseille FIR - Barcelona FIR	✘	n/a	Page 219
Airspace Structure Improvement Bordeaux ACC	✘	3.2.1(a)	Page 224
Airspace Structure Improvement Reims ACC	✔	n/a	Page 223
ELIXIR Phase 1	✘	n/a	Page 224
ELIXIR Phase 2	✘	3.2.1(a)	Page 221
Paris ACC re-organisation - Phase 3	✔		
FUA Implementation according to latest LSSIP	Implementation		
1	✔		
2	✔		
3	✔		

The chart in section 2.1.1 shows that France achieved a KEA of 3.25% in 2020. In 2021, France reached a KEA of 3.25% which means it did not achieve the 2021 target of 2.92% in its performance plan.

There are several projects in the ERNIP that are expected to be implemented by France, but not all of them are committed to nor mentioned in the performance plan. Implementation of all projects on time is important to maximise the ability to achieve the environment targets.

France mentioned establishing new environment indicators to improve environmental performance but does not include them as additional performance indicators.

France acknowledges the importance of flexible use of airspace (FUA) and free route airspace (FRA) to achieve the targets set. Additionally, France is planning the following significant initiatives to improve the environmental performance:

- New DCTs;
- XStream in Paris ACC;
- Dynamic sectorisation in Reims;
- Improvements to interfaces between Marseille ACC and Geneva ACC;
- Focus on improving most penalised city pairs; and
- 24 hour CDO at CDG airport.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does France plan for an environmental incentive scheme?	✘
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

FRANCE

Capacity KPA

3.1 Summary of capacity key data and assessment results

France

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values. The proposed breakdown values are lower than the range of the delay forecast for 2022-2024. The capacity plans indicate that France will face a capacity gap throughout 2022-2024 without implementing additional measures compared to those described in the latest NOP.

The implementation of the new ATM system may introduce capacity constraints in RP3. The performance plan does not provide any mitigation measures to reduce such potential effects.

There are inconsistencies in the performance plan between capacity profile plans, planned number of ATCO FTEs, proposed capacity enhancement measures, and proposed breakdown values.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

France included 58 airports in the performance plan. National targets are set lower than RP2 targets, and represent an improvement compared to the average past performance.

Paris Charles de Gaulle and Paris Orly are the main contributors for airport arrival delays.

There are planned local works and significant international events, which might affect airport capacity negatively during RP3.

The performance of Paris Charles de Gaulle is expected to be better than that of the group of similar airports, while all other airports are expected to achieve worse performance than their respective groups of similar airports, with the exception of Lyon Saint Exupéry.

3.1.3 Incentives

En route:

France has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the national incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

France has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

Most of the investments were included in the RP2 performance plan and will continue throughout RP3.

The actual CAPEX for RP2 was 0.5% higher than the planned for the same period and the amount overspent was 4.2M€. Despite overspending on investments, in terms of depreciation and cost of capital, the total actual costs related to investments was 54M€ lower than determined. It is unknown if this amount will be reimbursed to the airspace users.

In the 2019 submission, France included an investment in "Airspace projects" as an other new investment. Among other functionalities, the investment also referred to airspace changes needed to provide service and capacity to drones. The performance plan lacks information about other new investments, therefore it is unknown if this investment is still included in the performance plan.

Capacity gaps are expected in Bordeaux, Brest, and Reims ACCs while Marseille ACC is expected to close the capacity gap by 2024. Paris ACC has capacity surplus during RP3. Major investments targeting capacity, flexibility, resilience, and scalability are planned with capacity benefits expected during and beyond RP3 but not enough to provide sufficient capacity in all ACCs. Major investments contribute to PCP/CP1 ATM Functionalities AF2, AF3, AF4, AF5, and AF6.

Investments also contribute to improvements in resilience, flexibility, and scalability in line with the European ATM evolution.



The PRB concludes that the capacity breakdown values proposed by France should be approved.

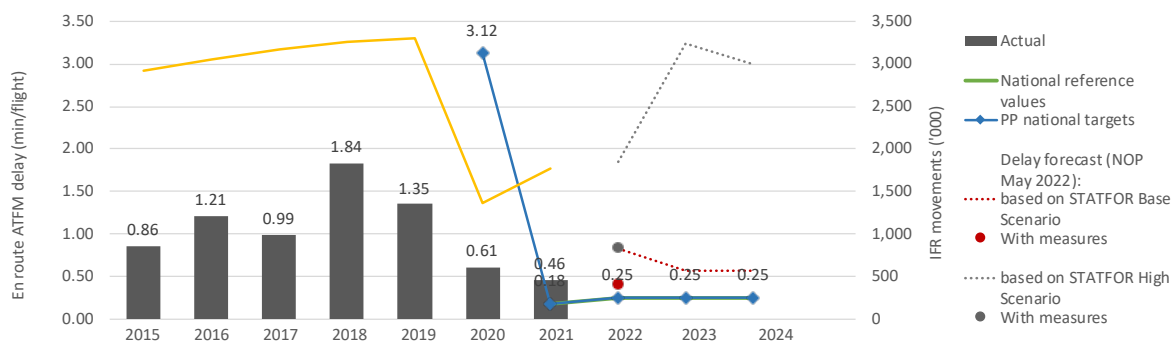
- France may experience a major capacity gap in Reims ACC during all years of RP3, in Brest ACC and Bordeaux ACC in 2023 and 2024, if additional capacity enhancement measures are not implemented.
- There are discrepancies in the performance plan between capacity profile plans, planned number of ATCO FTEs, proposed capacity enhancement measures, and proposed breakdown values.
- The incentive schemes defined in the performance plan do not have a material impact on the revenue at risk.
- The transition projects in French ACCs will likely have a significant impact on the ANSPs of neighbouring Member States and on the European ATM Network during 2022-2024.
- Due to the foreseen major capacity gaps and the network-wide effects associated with the planned transition projects in French ACCs, France has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.

- France should ensure that all capacity enhancement measures are properly implemented and are aligned with the reference values.
- France should reduce and mitigate the significant impact of its transition projects on the ANSPs of neighbouring Member States and the airspace users by closely coordinating with the Network Manager.
- France should align capacity profile plans, capacity enhancement measures, and proposed capacity breakdown values.
- France should revise the incentive schemes so that they have a material impact on the revenues.

3.2 En route ATFM delay per flight

France - DSN

3.2.1 Overview of en route ATFM delay per flight



Traffic variation	+2%	+4.5%	+4.0%	+2.7%	+1.4%	-58.7%	+30.3%			
Actual delay/flight	0.86	1.21	0.99	1.84	1.35	0.61	0.46			
National reference values						n/a	0.18	0.25	0.25	0.25
PP national targets						3.12	0.18	0.25	0.25	0.25
Delay forecast*:										
Based on STATFOR High Scenario	w/o measures						-	1.85	3.24	3.00
	with measures						-	0.84	-	-
Based on STATFOR Base Scenario	w/o measures						-	0.83	0.57	0.57
	with measures						-	0.42	-	-

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.2.2 Review of planned capacity enhancement measures

Assessment of capacity enhancement measures and review against NOP

During RP2, France experienced capacity constraints related to ATC staffing, ATM capacity, and industrial actions. France missed the capacity targets by a significant margin in all years of RP2. The main contributor to the delays was Marseille ACC constrained by staffing issues, industrial actions and adverse weather-related issues. Between 2020 and 2021 now capacity gaps were experienced due to drop of the traffic.

The performance plan contains the following capacity enhancement measures highlighted as essential to achieve the RP3 capacity targets:

- Implementation of new ATM systems (rescheduled implementation compared to the initial RP3 performance plan):
 - Coflight - flight data processing system (FDPS) capable of provision the FDPS as service (virtualisation),
 - 4Flight - ATM system, and
 - ATCO levels planning and flexible rostering.
- DSNA medium and long-term strategy to address the RP2 staffing issues and avoid future new capacity shortages, including a full set of human resources measures addressing both ATCO shortage and better productivity.

The planned number of ATCO FTEs have been slightly modified in the performance plan to address volatility of traffic forecast. The levels are increasing above the 2019 levels mainly in Bordeaux and Marseille ACCs during RP3. During 2022, in Reims the number of planned ATCO FTEs show a decrease compared to 2021, which may contribute to a capacity gap. DSN has established an adapted recruitment plan that should be implemented during RP3 including three classes of ab-initio training. The new ATCOs in combination with the actual ones should provide enough resources to counteract the previously experienced staffing issues in all ACC except for Reims where the impact of planned numbers is difficult to assess. According to the NOP, delays higher than 1 minute could be generated by some ACCs despite of the planned measures.

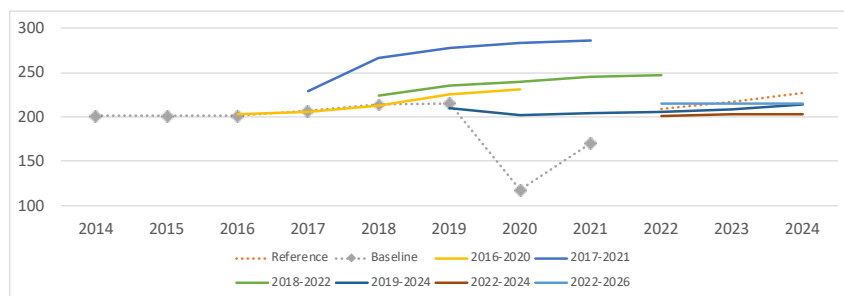
ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Bordeaux ACC (LFBB)	Additional ATCOs in OPS to start working in the OPS room	8	12.6	17	14	17	9	13	+31
	ATCOs in OPS to stop working in the OPS room	5	20	5.8	5	11.7	6.6	9.7	
	ATCOs in OPS to be operational at year-end	225.4	218	229.2	238.2	243.5	245.9	249.2	
Brest ACC (LFRR)	Additional ATCOs in OPS to start working in the OPS room	18	14.6	10	9	7	11	8	+6
	ATCOs in OPS to stop working in the OPS room	5	11	11.6	3	9	5.9	10	
	ATCOs in OPS to be operational at year-end	245.6	249.2	247.6	253.6	251.6	256.7	254.7	
Marseille ACC (LFMM)	Additional ATCOs in OPS to start working in the OPS room	15	16	23	26	22	13	12	+39
	ATCOs in OPS to stop working in the OPS room	22	24.4	15.2	7	13.7	10.6	10.7	
	ATCOs in OPS to be operational at year-end	291.8	283.4	291.2	310.2	318.5	320.9	322.2	
Paris ACC (LFFF)	Additional ATCOs in OPS to start working in the OPS room	5	18	16	17	28	14	28	+9
	ATCOs in OPS to stop working in the OPS room	27	32.8	24.6	11	19.8	20.2	18.8	
	ATCOs in OPS to be operational at year-end	271.6	256.8	248.2	254.2	262.4	256.2	265.4	
Reims ACC (LFEE)	Additional ATCOs in OPS to start working in the OPS room	3	6	8	14	12	23	23	+3
	ATCOs in OPS to stop working in the OPS room	16	25	17.2	12	17.8	14.2	15.8	
	ATCOs in OPS to be operational at year-end	214.4	195.4	186.2	188.2	182.4	191.2	198.4	
Total - DSN (en route)	Additional ATCOs in OPS to start working in the OPS room	49	67.2	74	80	86	70	84	+87
	ATCOs in OPS to stop working in the OPS room	75	113.2	74.4	38	72	57.5	65	
	ATCOs in OPS to be operational at year-end	1248.8	1202.8	1202.4	1244.4	1258.4	1270.9	1289.9	

3.2.3 Review of previous and existing capacity profile plans per ACC



Bordeaux ACC (LFBB)



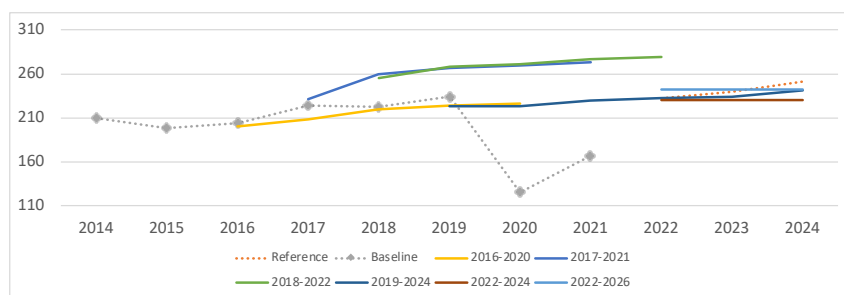
- Historical data shows that the baseline value in RP2 grew by around 1.4% annually and that the ANSP capacity plans were significantly above the baseline values for the second half of RP2.

- The latest capacity plan shows flat capacity profile values, generating a minor, but increasing capacity gap of -1% in 2023 and -5% in 2024.

- There is an inconsistency between capacity profile plans, planned number of ATCO FTEs, capacity enhancement measures, and the proposed breakdown values.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									209	217	227
Baseline	201	201	201	207	214	215	118	170			
2016-2020			203	205	213	226	231				
2017-2021				229	266	277	283	286			
2018-2022					224	235	240	245	247		
2019-2024						210	202	204	206	208	214
2022-2024									201	203	203
2022-2026									215	215	215
Latest vs Reference									3%	-1%	-5%

Brest ACC (LFRR)



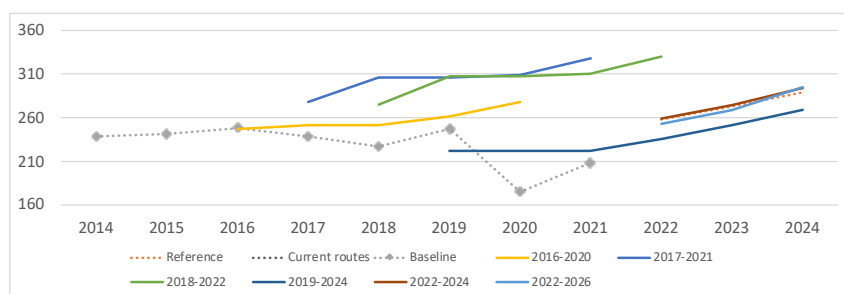
- Historical data shows that the baseline values in RP2 grew by around 2.4% annually and that the ANSP capacity plans were significantly above the baseline values for the second half of RP2. The majority of capacity issues were related to disruptions and ATM capacity especially during the second half of RP2.

- The latest capacity plan shows flat values over 2022-2024 resulting in a minor capacity gap of -4% in 2024.

- There is an inconsistency between capacity profile plans, planned number of ATCO FTEs, capacity enhancement measures, and the proposed breakdown values.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									232	240	251
Baseline	209	198	204	224	223	234	125	167			
2016-2020			200	208	220	224	226				
2017-2021				231	259	267	270	273			
2018-2022					255	268	271	276	279		
2019-2024						223	223	230	232	234	241
2022-2024									230	230	230
2022-2026									242	242	242
Latest vs Reference									4%	1%	-4%

Marseille ACC (LFMM)



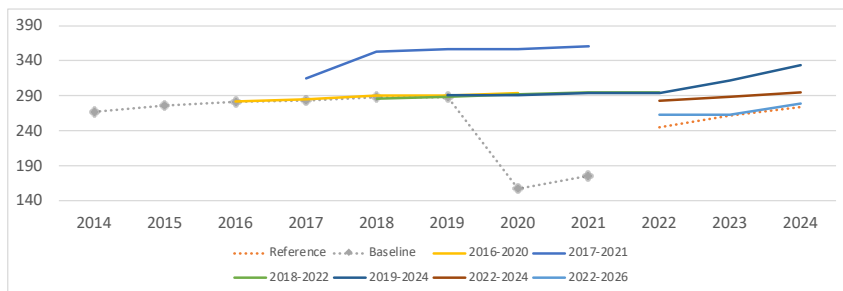
- Historical data shows that the baseline values in RP2 grew by around 0.9% annually and that the ANSP capacity plans were significantly above the baseline values for the second half of RP2. The majority of capacity issues were related to staffing, ATM capacity, and industrial actions.

- The latest capacity plan shows an average annual growth of 8% over 2022-2024. A minor capacity gap of -2% is expected in 2022 and 2023, which is planned to be closed in 2024.

- There may be an inconsistency between capacity profile plans, planned number of ATCO FTEs, capacity enhancement measures, and the proposed breakdown values.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									258	273	289
Baseline	238	242	248	239	227	247	175	209			
2016-2020			247	252	252	262	278				
2017-2021				278	306	306	309	328			
2018-2022					275	308	308	311	330		
2019-2024						222	222	222	235	251	269
2022-2024									259	275	294
2022-2026									253	268	295
Latest vs Reference									-2%	-2%	2%

Paris ACC (LFFF)

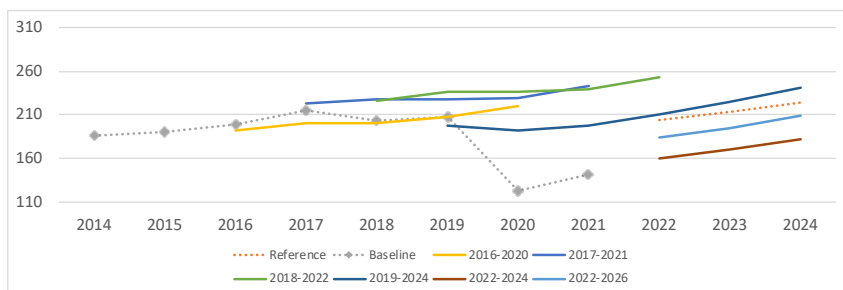


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									245	262	274
Baseline	268	276	281	283	288	288	157	175			
2016-2020			282	285	291	291	294				
2017-2021				315	353	357	357	361			
2018-2022					286	289	292	295	295		
2019-2024						291	291	294	294	312	334
2022-2024									283	289	295
2022-2026									263	263	279
Latest vs Reference									7%	0%	2%

- Historical data shows that baseline values in RP2 grew by around 1.5% annually and that the ANSP capacity plans were consistent with the baseline values, except in 2017, when the planned value was significantly above the baseline value. The ACC did not experienced capacity gap during the period.

- The latest capacity plan shows an average annual growth of 3% over 2022-2024, as a single step increase in 2024. This results in a decreasing capacity surplus towards the end of RP3.

Reims ACC (LFEE)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									204	213	224
Baseline	186	190	199	215	204	207	123	142			
2016-2020			192	200	200	208	220				
2017-2021				223	227	227	229	243			
2018-2022					226	237	237	239	253		
2019-2024						198	192	198	210	225	241
2022-2024									160	170	182
2022-2026									184	195	209
Latest vs Reference									-10%	-8%	-7%

- Historical data shows that the baseline values in RP2 grew by around 2.3% annually, which includes a -5.1% drop in 2018. The ANSP capacity plans were significantly above the baseline values for 2014, 2017, and 2018. The majority of capacity issues were related to staffing and ATM capacity especially during the second half of RP2.

- The latest capacity plan for RP3 shows an average annual growth of 6.6% over 2022-2024. Despite the increase, capacity profiles are not in line with reference profiles, resulting in a significant capacity gap in all remaining years of RP3, with a slowly improving tendency.

- There may be an inconsistency between the capacity profile plans, planned number of ATCO FTEs, capacity enhancement measures, and the proposed breakdown values.

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

Review of the planned impact of special events in some years of RP3

The FRA implementation and gradual implementation of the new ATM system including FDPS (4Flight/Coflight) are planned during RP3 and described by the NOP as a special event. The performance plan does include information on the impact of those events although it expects temporary decrease of ATM capacity, training capacity, and increase of delays.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

The performance plan does not contain information on the mitigation measures associated with special events. It provides high-level description on planning and cooperation with the NM.

3.2.5 Review of the measures to increase capacity and address capacity gaps

- | | | |
|----|--|-----|
| a) | Performance plan contains additional measures compared to the NOP in order to close the capacity gap?
The level of details provided by the performance plan does not allow to assess if the main capacity enhancement measures include as well measures and functionalities listed in the NOP and the ones proposed by the NM. | ⚠ |
| b) | Measures proposed by the NM to enhance capacity are planned and described in the performance plan?
The performance plan provides mainly description of the investment projects related to the ATM system upgrade. Those measures are prioritised to provide increased capacity in RP3. The NOP includes many of procedural (ATFM) and organisational measures (staffing, airspace and ASM), which have been implemented as short-term measures. The performance plan provides detail only on ATCOs levels management. | ⚠ |
| c) | The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described?
n/a | n/a |
| d) | The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap?
The NSA has not proposed additional measures. | ✘ |
| e) | Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)?
The planned number of ATCO FTEs may not be sufficient to close the capacity gap mainly in Reims ACC. | ✘ |
| f) | The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity?
The performance plan describes the new rostering system and its ability to enhance capacity only on high-level. It is described as one of the HR management tools, although no further details are provided. | ✓ |
| g) | The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome?
The performance plan justifies the implementation of the new ATM system to enhance the capacity. | ✓ |

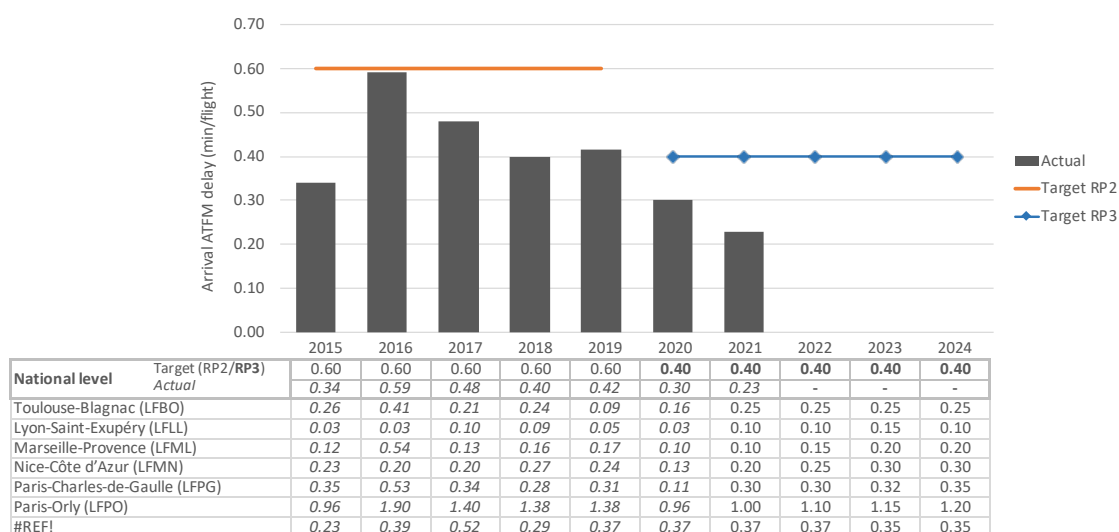
3.2.6 PRB Key Points

- The ANSP breakdown values are consistent with the ANSP reference values. The proposed breakdown values are lower than the range of the delay forecast for 2022-2024.
- The capacity plans indicate that France will face a capacity gap throughout 2022-2024 without implementing additional measures compared to those described in the latest NOP.
- The implementation of the new ATM system may introduce capacity constraints in RP3. The performance plan does not provide any mitigation measures to reduce such potential effects.
- There are inconsistencies in the performance plan between capacity profile plans, planned number of ATCO FTEs, the proposed capacity enhancement measures, and the proposed breakdown values.

3.3. Arrival ATFM delay per flight

France

3.3.1 Overview of arrival ATFM delay per flight



3.3.2 Review of targets and comparison with level and trend of past performance during RP2

France includes 58 airports in the FABEC's performance plan.

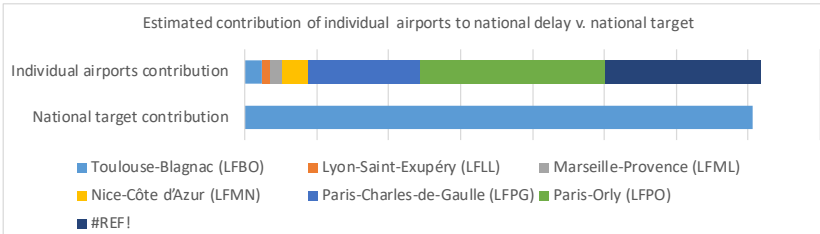
The national capacity targets have been set taking into account the actual RP2 and 2020 performance for terminal capacity. They are set constant during RP3 and equal to the performance in 2018 and they represent an improvement with respect to the past targets for RP2 (33% lower arrival ATFM delays).

According to the performance plan, this capacity improvement will be implemented on the main French airports during the whole RP3 building on implementations of new ATM terminal systems and/or airspace design projects while local works are also planned during RP3 (on runways, taxiways or towers) as well as international events management (Olympic Games 2024 organised in France from 26th of July to 11th of August). The performance plan also mentions that some of these implementations/works will require ATFM regulations. It also states that priority will be given to French en route ACC for ATCO hiring and high level of retirement expected as from end of RP3 will affect the capacity provision at some French airports.

The performance plan uses the STATFOR October 2021 base forecast that estimates a CAGR in IFR movements (2019-2024) of -0.3% for the French TCZ 1 (Paris Charles de Gaulle and Paris Orly) and 0.4% for the TCZ 2 (the other 56 airports).

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Toulouse-Blagnac (LFBO)	0.25
Lyon-Saint-Exupéry (LFLL)	0.11
Marseille-Provence (LFML)	0.16
Nice-Côte d'Azur (LFMN)	0.26
Paris-Charles-de-Gaulle (LFPG)	0.32
Paris-Orly (LFPO)	1.11
#REF!	0.36
National Target	0.40



The breakdown at airport level of the national target estimates the biggest contribution to delays by Paris Orly, followed by Paris Charles de Gaulle. This breakdown is in line with the national target that is, assuming all airports would perform according to their target, the national performance would be approximately the national target.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Toulouse-Blagnac (LFBO)	GROUP III	0.12	0.24	+0.12	0.25	+0.13
Lyon-Saint-Exupéry (LFLL)	GROUP III	0.12	0.06	-0.05	0.11	-0.00
Marseille-Provence (LFML)	GROUP III	0.12	0.22	+0.11	0.16	+0.05
Nice-Côte d'Azur (LFMN)	GROUP II	0.23	0.23	+0.00	0.26	+0.03
Paris-Charles-de-Gaulle (LFPG)	GROUP I	0.65	0.36	-0.29	0.32	-0.34
Paris-Orly (LFPO)	GROUP I	0.65	1.40	+0.75	1.11	+0.46
Other airports (LFXX)	GROUP IV	0.00	0.35	+0.35	0.36	+0.01

GROUP III - Avg. mvts. in 2016-2018 ≥80,000 and <225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 <80,000

During RP2, only the performance of Paris Charles de Gaulle and Lyon were better than airports in their respective group. Toulouse and Marseille had slightly more delays than similar airports and Paris Orly has a significant worse performance than the median of airports in its group.

3.3.5 PRB Key Points

- France included 58 airports in the performance plan. National targets are set lower than RP2 targets, and represent an improvement compared to the average past performance.
- Paris Charles de Gaulle and Paris Orly are the main contributors for airport arrival delays.
- There are planned local works and significant international events, which might affect airport capacity negatively during RP3.
- The performance of Paris Charles de Gaulle is expected to be better than that of the group of similar airports, while all other airports are expected to achieve worse performance than their respective groups of similar airports, with the exception of Lyon Saint Exupéry.

3.4 Capacity Incentive schemes

France

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±30.0%	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.25	0.25	0.25
Alert threshold (Δ Ref. value in fraction of min)			±0.053	±0.053	±0.053
Performance Plan targets			0.25	0.25	0.25
Pivot values for RP3			0.16	0.16	0.16

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A dead band of +/- 30% is applied around modulated pivot value before any incentives apply. The maximum penalties or bonuses apply at +/- 0.05 minutes from pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 60% of total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could affect the financial incentive.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of determined costs.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±50.0%	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.40	0.40	0.40
Pivot values for RP3			0.10	0.10	0.10

Threshold and pivot value review

The French terminal incentive scheme has opted for a dead band of 50% of the pivot value, which means there is no linear progression in the application of bonuses / penalties and only maximum bonus or penalty are to be applied. The pivot values, modulated to cover only CRSTMP causes, are 0.10 minutes per arrival, which is slightly worse than the reported CRSTMP delay in RP2 (0.09 minutes per arrival).

Modulation review

France has chosen to modulate the pivot values according to CRSTMP causes. For the calculation of this pivot value, the performance plan applies a CRSTMP share of ATFM delay causes of 25% to calculate the pivot value, reportedly based on RP2 historical data. Nevertheless the reported share of CRSTMP delays in 2015-2019 is 20.5%, that would result in a pivot value of 0.082 minutes per arrival.

Review of financial advantages/disadvantages

The scheme is symmetric. The maximum bonus/penalty is only 0.5% which together with the wide dead band limits the impact of this incentive scheme.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✗

En route:

- France has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation are the reference values for the ANSP.
- In addition to the national incentive scheme, a FAB-level incentive scheme also applies.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

- France has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

- As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.5 Investments

France - DSNA

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total	
Total determined costs of investments*	M€ (nominal)	206.8	224.4	220.7	233.0	250.0	1135.0	
	En route	M€ (nominal)	175.7	190.7	187.4	198.0	212.9	964.7
	Terminal	M€ (nominal)	31.1	33.7	33.4	34.9	37.1	170.3

RP3 investment ratio ER/TRM



* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

The numbers presented in this table do not correspond to the values presented below due to inconsistencies between the performance plan and its Annex A and B.

3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	4-FLIGHT	<p>4-FLIGHT represents the heart of the modernization of the French ATM system. The programme will make it possible to put into operation in the French en-route control centers a complete new generation control system, taking up all the functionalities of the current system, CAUTRA, while bringing new potential for developments aligned with the strategic roadmap of the European SESAR programme and the related European regulations.</p> <p>More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.</p>	853.4	Yes	Yes	124.9	0.0
2	AIS/AIM	<p>Advanced data exchange services are required to communicate up to date aeronautical information (e.g. about flight plans, weather, airport data etc.) that help operational stakeholders to maximize the benefits of new ATM systems and tools.</p> <p>The Aeronautical Information Exchange Model (AIXM) and System Wide Information Management (SWIM) concept set out specifications that enable the distribution of key data in a common digital format. The AIM and SWIM concepts are being delivered via the SESAR programme to provide more accurate and efficient digital aeronautical information to civil and Military ANSPs, airspace users, airport operators, Meteorological service providers and the European Network Manager.</p> <p>Additional costs corresponding to this major investment are MCO costs related to recurrent activities are necessary to be able to operate the AIS/AIM systems: annual obstacle surveys, corrective, preventive and evolutive maintenance.</p>	0.0	Yes	No	13.3	3.1
3	CDM/AMAN/DMAN/XMAN	<p>Airport Collaborative Decision Making (ACDM) is about partners (airport operators, aircraft operators/ground handlers, ATC and the Network Operations) working together more efficiently and transparently in the way they work and share data.</p> <p>The Airport CDM project aims at improving the overall efficiency of operations at an airport, with a particular focus on the aircraft turn-round and pre-departure sequencing process.</p> <p>More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.</p>	100.0	Yes	Yes	12.2	2.9
4	COFLIGHT	<p>COFLIGHT is the next generation automated flight plan processing system that will replace the STPV (CAUTRA 4 Flight Plan Processing System - Automatic Air Traffic Coordinator). Its commissioning will be concurrent with that of the 4-FLIGHT system in the first 3 en route control centers of the DSNA (Reims in the 1st half of 2022, Marseille in the 2nd half of 2022 and Paris in 2023).</p> <p>More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.</p>	350.0	Yes	Yes	77.4	18.1
5	CSSIP	<p>The CSSIP (Ground-Ground Communications under Internet Protocol) program implements a national telecommunications network of new generation based on IP protocols for voice digital conversion and the migration of voice and data communications from the previous network to the new one called RENAR-IP. It provides all voice and data exchanges for the traffic control purposes. Connected to PENS, it is able to exchange data with various international networks and simplifies the systems and application interoperability between adjacent ANSPs.</p>	81.0	Yes	No	7.0	1.7
6	NVCS	<p>The NVCS (New Voice Communication System) program aims at replacing the current safety voice communications system of the DSNA's five metropolitan en route control centres (first deployments at Brest and Bordeaux ACCS) and Roissy-CDG, as part of a joint acquisition with FABEC partners, in particular the Maastricht International Control Centre (MUAC) of the Eurocontrol agency.</p> <p>More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.</p>	72.0	Yes	No	26.5	1.1
7	SYSAT	<p>The SYSAT program is aiming at modernizing ATM systems at Approach and Tower level. The systems developed within this program will interface with the 4-FLIGHT system for IFR flights and cover specific needs such as advanced management of VFR flights, ground traffic, landing, take-off, as well as collaboration and data exchange with airport systems. DSNA has opted to acquire an existing off-the-shelf industrial system, which will be adapted to DSNA's operational technical environment.</p> <p>More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.</p>	500.5	Yes	Yes	40.1	23.6

8	MCO and evol CNS/ATM	Maintaining technical equipment in operational condition (MCO) is essential to continue to have a required level of optimal safety especially in a period of on-going optimisation of technical workforce management. It also includes costs related to operational (corrective, preventive and evolutive) maintenance for NAV/COM/Surveillance/ATM systems.	0.0	No	No	348.1	81.7
9	CATIA	Radio is a critical component for flight safety and the architecture and design of radio communication systems is subject to a particularly high level of software assurance. In addition, the transition to the Internet Protocol (IP) standard for voice transmission increases the challenge of securing these systems against cyber threat. More details can be found in section 2.2 of the performance plan and in Annex E of the performance plan.	39.9	Yes	No	15.1	3.5

Total:	664.5	135.6
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Airspace user feedback regarding major investments

In 2021, the airspace users welcomed DSNa’s approach for the RP3 investment plan. However, they requested more transparency between the investments and their benefits, while also commenting that the high overspending during RP2 does not provide visible benefits to the users.

Review of investments

Most of the investments were included in the RP2 performance plan and will continue throughout RP3. New major investments represent 49% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 0.5% higher than the planned for the same period and the amount overspent was 4.2M€. Despite overspending on investments, in terms of depreciation and cost of capital, the total actual costs related to investments were 54M€ lower than determined. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	MCO and evol NAV/COM/ATM	None	Safety, Capacity	Maintaining technical equipment in operational condition (MCO) is essential to continue to have a required level of optimal safety especially in a period of on-going optimisation of technical workforce management.

Additional information

n/a

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	0.0	108.4	17.7	8.8	14.9	14.7	14.5	70.5
Existing investments			202.7	178.8	141.4	122.7	111.1	756.7

3.5.3 Review of investments contribution to capacity

- a) **Investments contribute to the rectification of identified capacity shortfalls?** ✔
 Capacity shortfalls are expected in Bordeaux (-5%) and Brest (-4%) by the end of RP3. Marseille ACC is expected to evolve from a slight capacity deficit (-2%) in 2022-2023 to a slight capacity surplus (2%) in 2024. Paris ACC is expected to stay either on the side of capacity surplus or at zero. Reims ACC is expected to have a significant capacity deficit during RP3 (reducing from -22% in 2022 to -19% in 2024).

 The main major investments contributing to capacity enhancements are the 4-FLIGHT, the COFLIGHT, and the SYSAT investments. These investments contribute to PCP/CP1 ATM Functionalities AF2, AF3, AF4, AF5, and AF6. Airport and TMA capacity can be expected to be improved with the Airport CDM/AMAN/DMAN/XMAN investment contributing to PCP/CP1 ATM Functionalities AF1, AF2, AF4, and AF5.

 All abovementioned investments together with the AIS/AIM investment contribute also to improvements in flexibility and scalability. Additional investments related to communications (CSSIP, NVCS and CATIA investments) and CNS infrastructure maintenance (MCO and evol. NAV/COM/ATM investment) contribute also to resilience. Investments are generally in line with the European ATM evolution.
- b) **Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?** ✔
 The 4-FLIGHT project introduces new a radar processing system (ARTAS provided by Eurocontrol) and a new human-machine interface (HMI) with improvements to ATC tools, improved Free Route capabilities, and EPP functionalities. The 4-FLIGHT investment is complemented by the COFLIGHT investment representing the next generation automated flight plan processing system which will be commissioned together with the 4-FLIGHT system. The SYSAT investment aimed at modernising ATM systems at approach and tower level will improve integration with the en route systems and may yield additional capacity improvements.

 The 4-FLIGHT and COFLIGHT investments will be deployed in phases during 2022/23 and will impact all ACCs and the investments will continue to yield capacity benefits beyond RP3 as well.
- c) **Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?** ⚠
 Based on the information available in the LSSIP documents for France the 4-FLIGHT implementation has been delayed approximately by five years. The 4-FLIGHT and COFLIGHT investments will be deployed in phases during 2022-2023 and will impact all ACCs and the investments will continue to yield capacity benefits beyond RP3 as well. The capacity gains expected from the implementation of 4-FLIGHT are 20 to 25% in Reims, Marseille, and Paris, and 10 to 15% in Bordeaux and Brest (smaller gains as ERATO system already implemented), i.e. some of the capacity gaps experienced during the recent years may have been avoided with an earlier implementation of the new system. Due to the significant capacity deficit in Reims, the capacity availability even with the new system implementations may remain on the side of a deficit.

3.5.4 PRB Key Points ✔

- Most of the investments were included in the RP2 performance plan and will continue throughout RP3.
- The actual CAPEX for RP2 was 0.5% higher than the planned for the same period and the amount overspent was 4.2M€. Despite overspending on investments, in terms of depreciation and cost of capital, the total actual costs related to investments were 54M€ lower than determined. It is unknown if this amount will be reimbursed to the airspace users.
- In the 2019 submission, France included an investment in “Airspace projects” as an other new investment. Among other functionalities, the investment also referred to airspace changes needed to provide service and capacity to drones. The performance plan lacks information about other new investments, therefore it is unknown if this investment is still included in the performance plan.
- Capacity gaps are expected in Bordeaux, Brest, and Reims ACCs while Marseille ACC is expected to close the capacity gap by 2024. Paris ACC has capacity surplus during RP3.
- Major investments targeting capacity, flexibility, resilience, and scalability are planned with capacity benefits expected during and beyond RP3 but not enough to provide sufficient capacity in all ACCs. Major investments contribute to PCP/CP1 ATM Functionalities AF2, AF3, AF4, AF5, and AF6.
- Investments contribute also to improvements in resilience, flexibility, and scalability in line with the European ATM evolution.

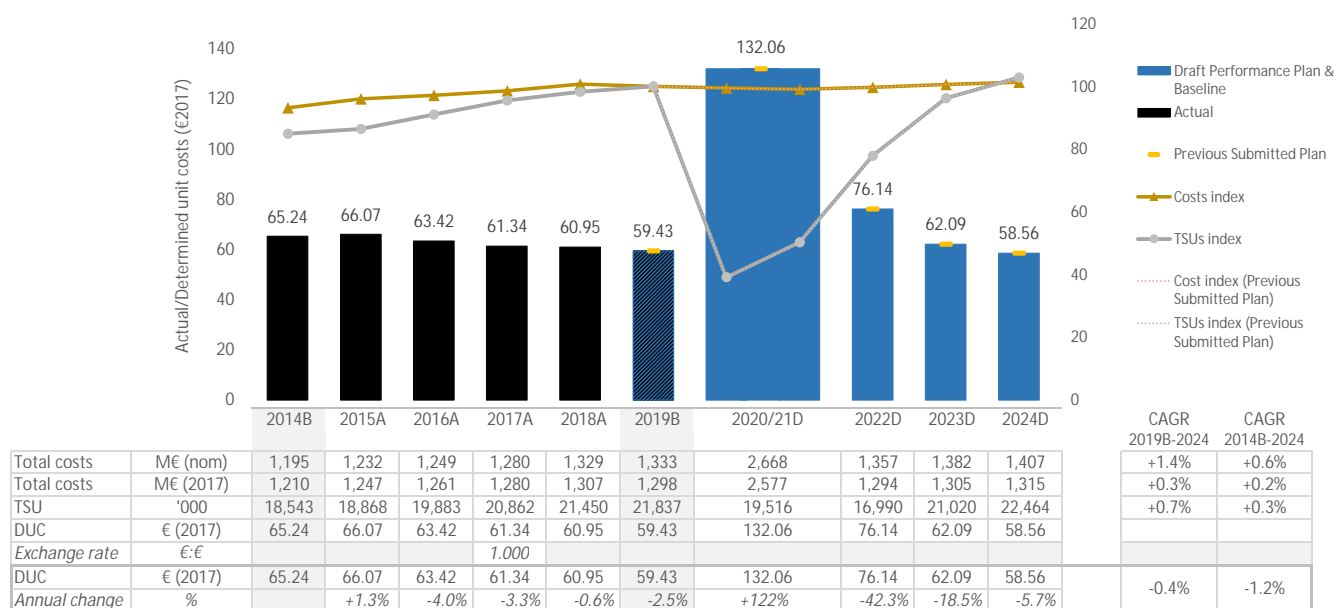
FRANCE

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

France - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



4.1.2 Summary of baseline review

DUC 2019 baseline consistent with <u>actual unit costs</u> or deviation adequately justified?	59.43 €2017	✓
No major issues identified.		

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	-0.4%	✓
The DUC is planned to decrease on average by -0.4% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	-1.2%	✓
The DUC is planned to decrease on average by -1.2% between 2014 and 2024, which is slightly worse than the long-term Union-wide trend (-1.3%). However, the difference is negligible and the trend can be considered consistent with the Union-wide one.		
c) DUC level (2019 baseline) lower than the average of comparator group (A) average (60.53 €2017)?	-1.8%	✓
The 2019 DUC level is -1.8% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions



The cost-efficiency targets of France have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

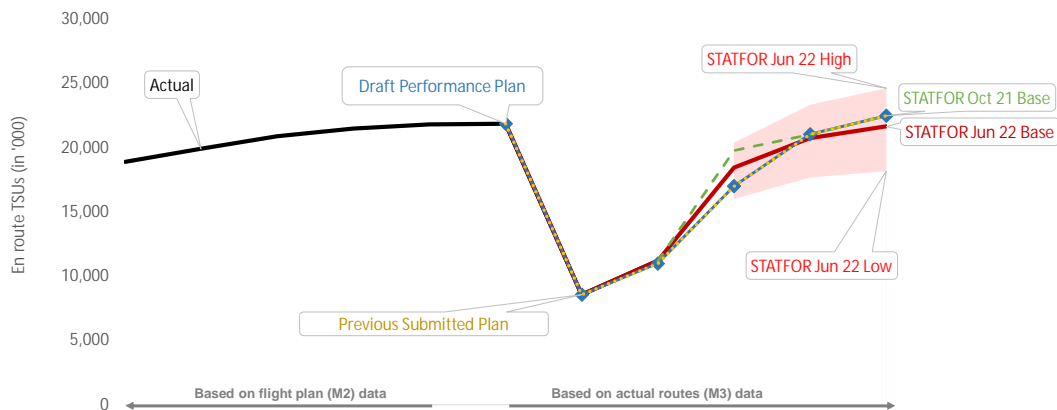
The PRB concludes that the cost-efficiency targets proposed by France should be approved.

- France is consistent with the RP3 DUC trend in terms of average reduction.
- France is not consistent with the long-term Union-wide DUC trend. However, the difference is negligible therefore the trend can be considered consistent with the Union-wide one.
- France is consistent with the average DUC baseline of the comparator group.
- France presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.2 Review traffic forecasts and baseline

France - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	18,868	19,883	20,862	21,450	21,782	21,837	8,547	11,181				
Annual change	%		+5.4%	+4.9%	+2.8%	+1.5%	+1.8%	-60.9%	+30.8%				
STATFOR Jun 22 Base	'000 TSUs									18,429	20,716	21,622	-1.0%
Annual change	%									+64.8%	+12.4%	+4.4%	
STATFOR Oct 21 Base	'000 TSUs									19,768	21,020	22,464	+2.9%
Annual change	%									+76.8%	+6.3%	+6.9%	
Performance Plan	'000 TSUs						21,837	8,547	10,969	16,990	21,020	22,464	+2.9%
Annual change	%						+1.8%	-60.9%	+28.3%	+54.9%	+23.7%	+6.9%	

4.2.2 Traffic baseline review

2019	'000 TSUs	CRCO 12-month coefficient	2014	'000 TSUs	CRCO 12-month coefficient
2019B (PP baseline, M3)	21,837		2014B (PP baseline)	18,543	
2019A (as in the Reporting tables, M2)	21,782		2014A (as in the Reporting tables, M2)	18,497	
2019B/ 2019A	0.25%	+0.25%	2014B/ 2014A	0.25%	+0.25%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2019 and 2014 traffic baselines were adjusted by the M2/M3 CRCO 12-months coefficient (+0.25%).

Review of 2014 and 2019 traffic baseline
 The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (+0.25%). The coefficient slightly increases the number of 2014 and 2019 traffic baselines while decreasing the DUC baselines.

4.2.3 Review of the PP traffic forecast

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

- The STATFOR October 2021 base forecast has been evaluated by the French DGCA prospective unit and it is considered optimistic but relevant and consistent with the forecast made internally by France. As a result, the French NSA has decided to apply the STATFOR October 2021 base scenario except for the year 2022.
- France considers that the very short term (2021) and the long-term (2024) traffic bases forecast are consistent and reasonable. For the year 2023, the STATFOR October 2021 base scenario is valued as being optimistic but in the acceptable range of the local forecast (gap of 6.2%). For the year 2022, the discrepancy between the STATFOR October 2021 base scenario and the local base scenario is deemed to be too high (gap of 14.1% between the two base scenarios). With these considerations, the French NSA has chosen to implement an en route local traffic forecast in 2022.

Review of the PP traffic forecast
 France decided to not apply the STATFOR October 2021 base forecast in 2022 considering the volatility of traffic due to the pandemic impact and associated risks.

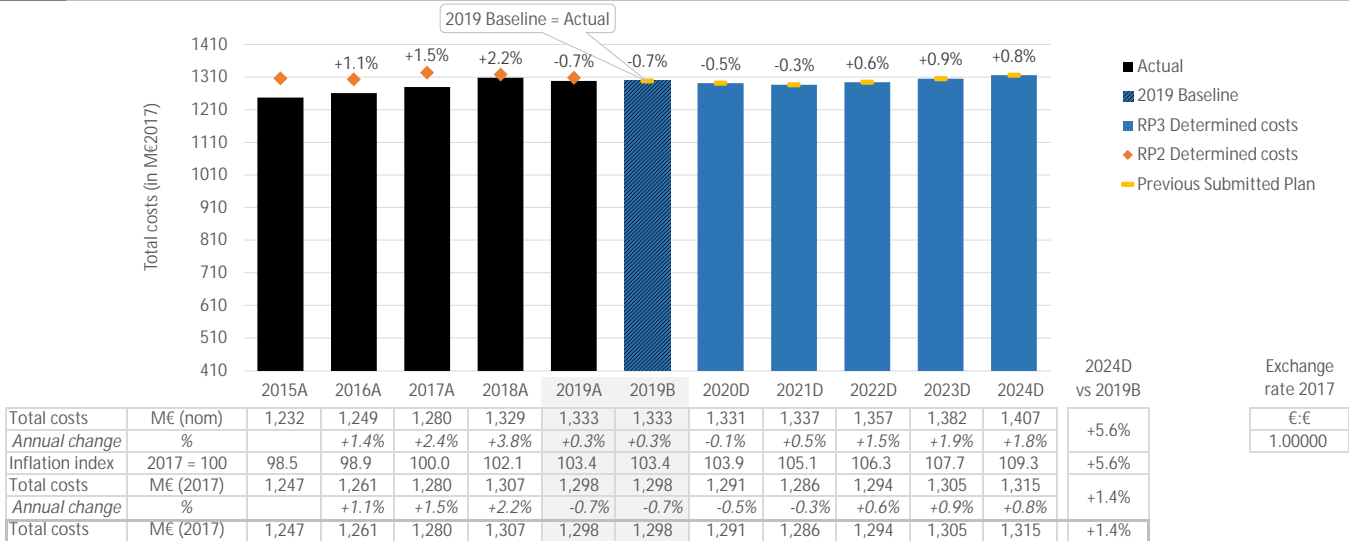
4.2.4 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:
 - France applied the en route traffic forecast from STATFOR October 2021 base scenario for all years except 2022.

4.3 Review of determined costs and baseline

France - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



The inflation rates used in the performance plan are in line with the IMF April 2021 forecast.

4.3.2 Baseline review

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

No adjustments applied to the 2014 or 2019 cost baselines.

2014/2019 baseline analysis

The 2014 and 2019 cost baseline are in line with 2014 and 2019 actual costs as presented in the en route reporting tables.

4.3.3 Review of the RP3 determined costs and incentives

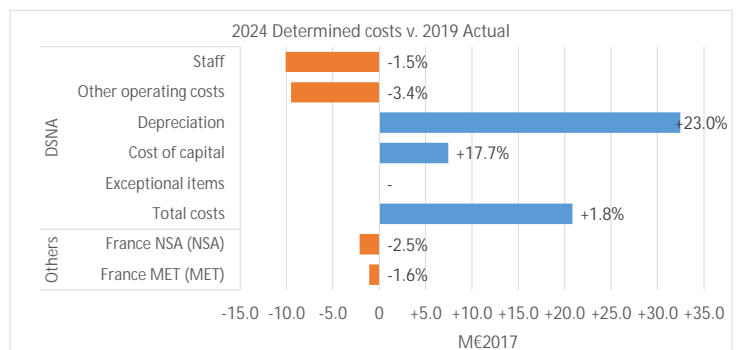
	M€2017	%
Review of 2020/2021 determined costs		
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+28.1	+2.2%

Review of cost elements

- ✓ Investments (see details in 3.5)
- ⓘ Cost of capital (see details in 4.3.1)
- ✓ Pension costs (see details in 4.3.2)
- ✓ Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



The total costs of France is planned to increase by +1.4% (+17.6M€2017) between actuals 2019 and planned 2024. The main contributor to this planned increase in costs is DSNA (+1.8%, or +20.8M€2017 overall). Costs remained roughly stable during 2020 and 2021 compared to 2019 actual costs, with no substantial decreases in reaction to COVID-19.

For DSNA, the planned increase in costs is largely driven by additional depreciation costs (+23.0%, or +32.5M€2017 between 2019 and 2024), which according to the information in annex R of the performance plan, is related to the fact that DSNA is currently in a very sensitive phase of modernisation of its major ATM systems (Coflight, 4Flight, and SYSAT) which cannot be delayed in order to achieve the capacity targets. Then, even if some other minor investments have been postponed, the depreciation costs are planned to increase.

- The staff costs decrease during the period (-1.5%, or -101M€2017) is mainly driven by the fact that the initial social agreement negotiation was put on hold and salaries frozen. In addition, some ATCO salaries were reduced by 500€ per month by not renewing some rostering flexibility agreements. These savings are partially offset by the ATCO recruitment plan.

- Other operating costs are planned to decrease by -9.5M€2017 (-3.4%) between 2019 and 2024, reflecting an internal review carried out by DSNA to identify saving measures in travels, fuel, meetings, training, non-priority contracts, subcontractors, ordinary supplies, vehicles, extraordinary and social events, and communication costs.

- The cost of capital increase (+17.7%, or 7.4M€2017 between 2019 and 2024) is due to a significant increase in the net current assets, partially compensated by a decrease in the WACC (from 5.3% in 2019 to 2.7% in 2024).

Both NSA and MET costs are planned to decrease between actuals 2019 and planned 2024 (-2.5% and -1.6% respectively).

4.3.4 PRB Key Points



No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- There are no adjustments to the cost baselines.
- Between 2019 and 2024, the total costs for DSNA is planned to increase by +1.8% (+20.8M€2017).
- The main contributor to the increase in costs is the depreciation costs related to the modernisation of ATM systems.

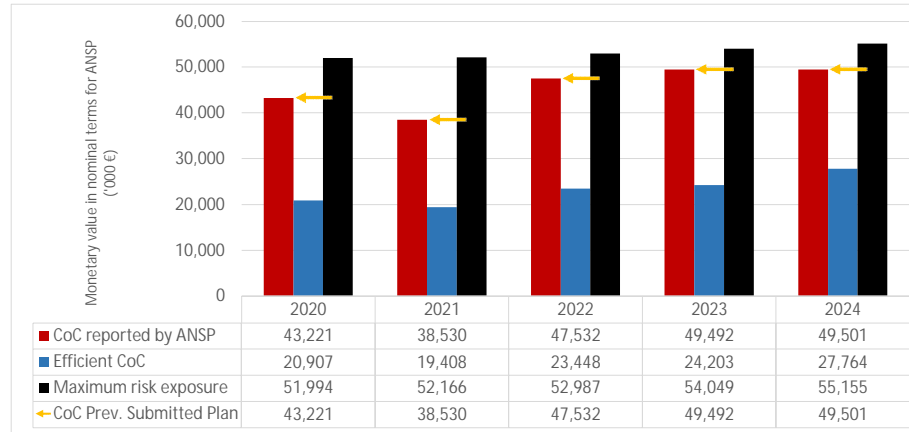
4.3.A Cost of capital

DSNA - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	1,181,681	1,185,600	1,204,247	1,228,395	1,253,531
Monetary value of Return on Equity	31,213	24,500	33,669	38,654	41,207
Ratio RoE/DC (%)	2.6%	2.1%	2.8%	3.1%	3.3%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Total 2020-2024	112,547
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Difference CoC reported by ANSP vs Efficient ('000 €)	2020	2021	2022	2023	2024
	22,314	19,122	24,084	25,289	21,737

4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	14.9%	4.2%	21.1%	4.6%	16.2%	4.6%	13.7%	4.7%	11.9%	5.1%
Interest on debts	0.9%	0.9%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.6%
Capital structure (% debt)	86.8%	86.8%	95.1%	95.1%	91.9%	91.9%	87.8%	87.8%	82.7%	82.7%
WACC	2.7%	1.3%	1.6%	0.8%	1.9%	0.9%	2.1%	1.1%	2.5%	1.4%

Is the interest on debts in line with the market?	Yes
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- DSNA does not raise its own loans. The reported cost of debt represents the actual cost of debt for DSNA's share in the borrowings. Considering this, the interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.

- DSNA is planning to face a significant increase in working capital requirements due to the drop in traffic in 2020 and 2021. In order to not fully charge it to airspace users, DSNA applies a different WACC rate depending on the nature of assets. The WACC reported in the performance plan has been calculated based on the CAPM and is applied to fixed assets and the usual working capital. As of 2023, a WACC of 0.5% is applied to working capital requirements resulting from "the impact of adjustments due to the drop in traffic", while a WACC of 0% is applied to working capital stemming from "the deferral of payment offered to users" in 2020. This results in a lower overall WACC over RP3. The efficient WACC has been calculated based on option 3.

- Over RP3, the reported cost of capital is 113M€ above the efficient cost of capital. Despite this and the remarkably high return on equity rate, the monetary value of the embedded return on equity is commensurate to the determined costs over RP3 (ranging between 2.1% and 3.3%).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	831,785	837,931	849,911	858,114	855,604
Net current assets	758,200	1,515,648	1,707,293	1,443,844	1,149,782
Adjustments total assets	0	0	0	0	0
Total asset base	1,589,985	2,353,579	2,557,204	2,301,959	2,005,386

- The fixed asset base is planned to slightly increase over RP3. This is not fully in line with the increase in investments described in section 3.5 of this document.

- The net current assets will significantly increase over RP3 due to an increase in working capital requirements resulting from the drop in traffic in 2020 and 2021. Although a cost of capital will not be fully charged on the net current assets, they seem excessive compared to the expected cash flows in RP3.

- The regulated asset base does not include adjustments to the total asset base.

- The total asset base will increase over RP3, mainly driven by the increase in net current assets.

4.3.A.5 PRB Key Points

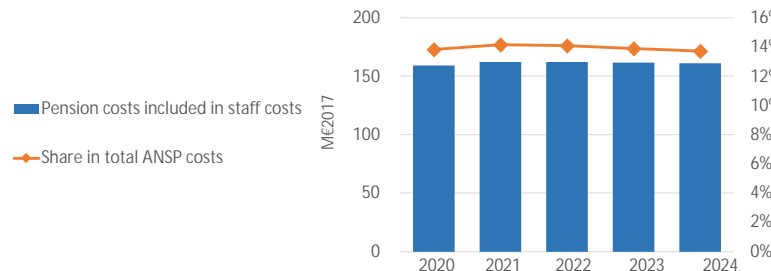
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- The net current assets will significantly increase over RP3 due to an increase in working capital requirements resulting from the drop in traffic in 2020 and 2021. Although a cost of capital will not be fully charged on the net current assets, they seem excessive compared to the expected cash flows in RP3.

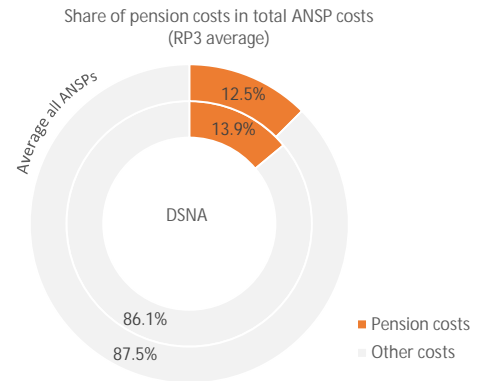
- Over RP3, the reported cost of capital is 113M€ above the efficient cost of capital. Despite this and the remarkably high return on equity rate, the monetary value of the embedded return on equity is commensurate to the total determined costs over RP3 (ranging between 2.1% and 3.3%).

4.3.B Pensions

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	M€2017	2020	2021	2022	2023	2024
Pension costs included in staff costs	M€2017	159.1	162.0	162.3	161.5	161.0
Year on year variation	% change		+1.8%	+0.2%	-0.5%	-0.3%
Share in total ANSP costs	%	13.8%	14.2%	14.1%	13.9%	13.7%
Year on year variation	p.p.		0.3p.p.	-0.1p.p.	-0.2p.p.	-0.2p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight decrease**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Higher**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **n/a**

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

DSNA contributes to two programmes of pensions: programme "741" (civil pensions) and programme "742" (State workers). Contribution to programme 741 is equal to the product of the contribution rate times the contribution base. Contribution base to programme 741 corresponds to gross salaries (i.e. not including bonuses or premiums). The Ministry of Economy & Finance decides on the contribution rate to programme 741 each year. An assumption of a flat contribution rate for programme 741 has been taken. The rate is flat from year 2013. A pension reform is envisaged at State level. But the date of this reform, if it occurs, is not known at this stage of the development of RP3, nor the form it could take.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **n/a**

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **n/a**

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

The contribution rate is decided by Ministry of Economy & Finance and has been flat since 2013. No change is foreseen at the moment.

4.3.B.4 PRB Key Points ✓

No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- No major issues identified.

4.3.C Methodology for cost allocation between ER and TRM

France

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- France did not mention changing the cost allocation methodology with respect to RP2.
 - Costs are allocated to accounting units, which are further divided in cost centres, to which staff and technical installations are allocated.
 - ACC costs are allocated 100% to en route, while TWR costs are allocated 100% to terminal. Costs of technical facilities are based on the services supported by the facility. Costs allocated to a transversal body or to general activity are allocated according to average cost ratios. Approach costs are allocated according to flight distance ratios (20km rule).

More details can be found in annex M of the performance plan.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points



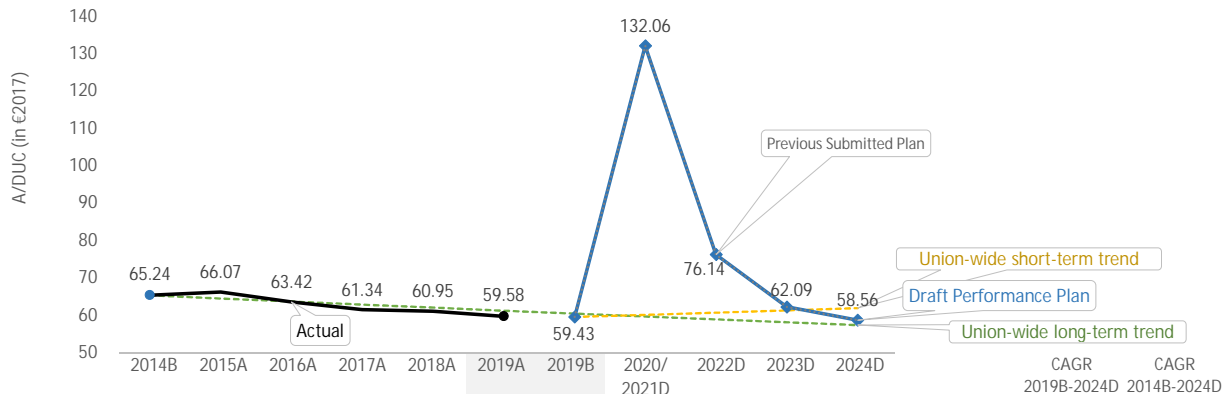
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- France did not mention changing the cost allocation methodology with respect to RP2.
- No major issues identified.

4.4 Determined unit costs (DUC)

France - En route CZ

4.4.1 Overview and trends of the DUC



DUC	€2017	65.24	66.07	63.42	61.34	60.95	59.58	59.43	132.06	76.14	62.09	58.56
Annual Change	%		+1.3%	-4.0%	-3.3%	-0.6%	-2.2%	-2.5%	+122%	-42.3%	-18.5%	-5.7%
Union-wide target	%								+120%	-38.5%	-13.2%	-11.5%

CAGR	CAGR
2019B-2024D	2014B-2024D
-0.4%	-1.2%

4.4.2 DUC consistency

✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan	Union-wide	Difference
✓ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-0.4%	+1.0%	-1.4p.p.
✓ DUC level consistency	2019 baseline	Performance Plan	Average comparator group	Difference
		59.43	60.53	-1.8%

- The DUC is planned to decrease on average by -0.4% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -1.2% between 2014 and 2024, which is slightly worse than the long-term Union-wide trend (-1.3%). However, the difference is negligible. Therefore, the trend can be considered consistent with the Union-wide one.
- The 2019 DUC level is -1.8% lower than the average of the comparator group.
- France presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

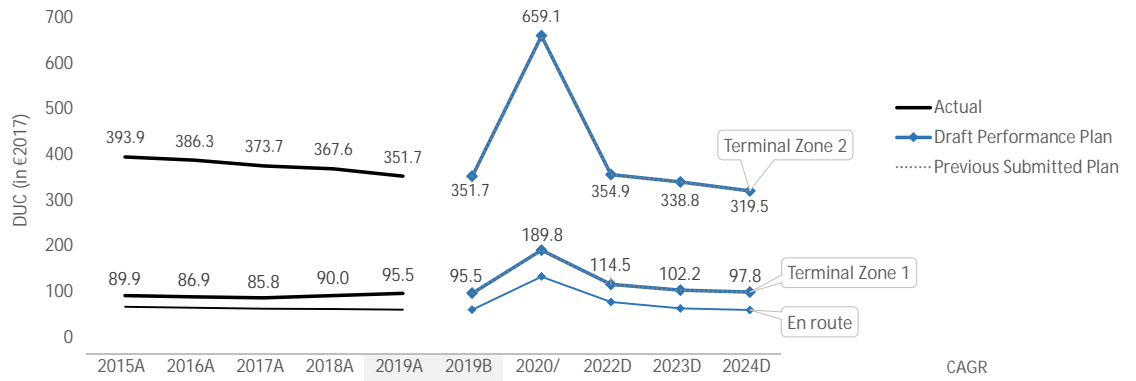
4.4.5 PRB Key Points

- No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- France is consistent with the RP3 DUC trend in terms of average reduction.
 - France is not consistent with the DUC long-term Union-wide trend. However, the difference is negligible. Therefore, the trend can be considered consistent with the Union-wide one.
 - France is consistent with the average DUC baseline of the comparator group.
 - France presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.5 Terminal

France

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal Zone 1	€2017	89.9	86.9	85.8	90.0	95.5	95.5	189.8	114.5	102.2	97.8	+0.6%
Annual Change	%		-3.3%	-1.3%	+5.0%	+6.0%	+6.0%	+99%	-39.7%	-10.7%	-4.3%	
DUC - Terminal Zone 2	€2017	393.9	386.3	373.7	367.6	351.7	351.7	659.1	354.9	338.8	319.5	-2.4%
Annual Change	%		-1.9%	-3.3%	-1.6%	-4.3%	-4%	+87%	-46.2%	-4.5%	-5.7%	
DUC - En route	€2017	66.1	63.4	61.3	60.9	59.6	59.4	132.1	76.1	62.1	58.6	-0.4%
Annual Change	%		-4.0%	-3.3%	-0.6%	-2.2%	-2.5%	+122%	-42.3%	-18.5%	-5.7%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Toulouse-Blagnac (LFBO)	GROUP III	169.1	171.6	+1.5%	233.8	223.9	-4.2%
Lyon-Saint-Exupéry (LFLL)	GROUP III	169.1	197.3	+16.7%	233.8	248.7	+6.4%
Marseille-Provence (LFML)	GROUP III	169.1	204.8	+21.1%	233.8	249.6	+6.8%
Nice-Côte d'Azur (LFMN)	GROUP II	145.8	168.6	+15.6%	187.6	196.5	+4.8%
Paris-Charles-de-Gaulle (LFPG)	GROUP I	138.9	78.4	-43.6%	176.0	116.2	-34.0%
Paris-Orly (LFPO)	GROUP I	138.9	120.2	-13.4%	176.0	132.8	-24.5%
Bâle-Mulhouse (LFSB)	GROUP IV	659.2	174.4	-73.5%	807.8	216.5	-73.2%
Agen-La Garenne (LFBA)	GROUP IV	659.2	2767.2	+319.8%	807.8	6177.3	+664.7%
Albert-Bray (LFAO)	GROUP IV	659.2	2486.7	+277.2%	807.8	3950.2	+389.0%
Angers-Marcé (LFRJ)	GROUP IV	659.2	2199.9	+233.7%	807.8	0.0	-100.0%
Anecy-Meythet (LFLP)	GROUP IV	659.2	3887.0	+489.6%	807.8	3846.1	+378.2%
Avignon-Caumont (LFMV)	GROUP IV	659.2	3704.3	+461.9%	807.8	3682.2	+351.9%
Bastia-Poretta (LFKB)	GROUP IV	659.2	264.9	-59.8%	807.8	349.4	-56.7%
Beauvais-Tillé (LFOB)	GROUP IV	659.2	181.3	-72.5%	807.8	403.6	-50.0%
Bergerac-Roumanière (LFBE)	GROUP IV	659.2	1066.6	+61.8%	807.8	1851.5	+129.2%
Béziers-Vias (LFMU)	GROUP IV	659.2	1304.8	+97.9%	807.8	1859.0	+130.1%
Biarritz-Bayonne-Anglet (LFBZ)	GROUP IV	659.2	298.3	-54.7%	807.8	421.7	-47.8%
Bordeaux-Mérignac (LFBG)	GROUP IV	659.2	176.9	-73.2%	807.8	285.2	-64.7%
Brest-Bretagne (LFRB)	GROUP IV	659.2	254.4	-61.4%	807.8	335.8	-58.4%
Brive-Souillac (LFSL)	GROUP IV	659.2	1174.6	+78.2%	807.8	1656.9	+103.1%
Caen-Carpiquet (LFRK)	GROUP IV	659.2	1103.1	+67.3%	807.8	1121.8	+38.9%
Calvi-Sainte-Catherine (LFKC)	GROUP IV	659.2	1078.1	+63.5%	807.8	1441.3	+78.4%
Cannes-Mandelieu (LFMD)	GROUP IV	659.2	1580.7	+139.8%	807.8	1832.6	+120.9%
Carcassonne-Salvaza (LFMK)	GROUP IV	659.2	847.8	+28.6%	807.8	1612.5	+99.5%
Châlons-Vatry (LFOK)	GROUP IV	659.2	659.2	+0.0%	807.8	968.4	+19.9%
Chambéry-Aix-les-Bains (LFLB)	GROUP IV	659.2	618.3	-6.2%	807.8	1216.4	+50.6%
Châteauroux-Déols (LFLX)	GROUP IV	659.2	839.8	+27.4%	807.8	1291.3	+59.9%
Clermont-Ferrand-Auvergne (LFLC)	GROUP IV	659.2	520.8	-21.0%	807.8	808.6	+0.1%
Deauville-Normandie (LFRG)	GROUP IV	659.2	864.9	+31.2%	807.8	1221.1	+51.2%
Dinard-Pleurtuit-Saint-Malo (LFRD)	GROUP IV	659.2	1748.7	+165.8%	807.8	2860.0	+254.1%
Dôle-Tavaux (LFGJ)	GROUP IV	659.2	1944.1	+194.9%	807.8	2470.4	+203.3%
Figari-Sud Corse (LFKF)	GROUP IV	659.2	757.9	+15.0%	807.8	876.4	+8.5%
Grenoble-Isère (LFLS)	GROUP IV	659.2	1054.3	+59.9%	807.8	2207.7	+173.3%
Hyères-Le Palyvestre (LFTH)	GROUP IV	659.2	547.5	-17.0%	807.8	571.0	-29.3%
Istres-Le Tubé (LFMI)	GROUP IV	659.2	175.7	-73.3%	807.8	0.0	-100.0%
La Rochelle-Ile de Ré (LFBH)	GROUP IV	659.2	680.0	+3.2%	807.8	1108.9	+34.3%
Lannion (LFRJ)	GROUP IV	659.2	1503.4	+128.1%	807.8	0.0	-100.0%
Le Havre-Octeville (LFOH)	GROUP IV	659.2	6735.8	+921.8%	807.8	0.0	-100.0%
Lille-Lesquin (LFQQ)	GROUP IV	659.2	374.6	-43.2%	807.8	482.8	-40.2%
Limoges-Bellegarde (LFBG)	GROUP IV	659.2	556.7	-15.5%	807.8	811.0	+0.4%
Lorient-Lann Bihoué (LFRH)	GROUP IV	659.2	347.4	-47.3%	807.8	387.0	-52.1%
Lyon-Bron (LFLY)	GROUP IV	659.2	1952.2	+196.1%	807.8	2076.9	+157.1%
Metz-Nancy-Lorraine (LJLJ)	GROUP IV	659.2	784.3	+19.0%	807.8	2065.7	+153.7%
Montpellier-Méditerranée (LFMT)	GROUP IV	659.2	401.9	-39.0%	807.8	590.6	-26.9%
Nantes-Atlantique (LFRS)	GROUP IV	659.2	177.9	-73.0%	807.8	273.3	-66.2%
Ajaccio-Napoléon-Bonaparte (LFKJ)	GROUP IV	659.2	244.4	-62.9%	807.8	298.1	-63.1%
Nîmes-Garons (LFTW)	GROUP IV	659.2	1429.0	+116.8%	807.8	2059.0	+154.9%
Paris-Le Bourget (LFPB)	GROUP IV	659.2	698.0	+5.9%	807.8	852.3	+5.5%
Pau-Pyrénées (LFBP)	GROUP IV	659.2	418.1	-36.6%	807.8	744.1	-7.9%
Perpignan-Rivesaltes (LFMP)	GROUP IV	659.2	974.3	+47.8%	807.8	1088.9	+34.8%
Poitiers-Biard (LFBG)	GROUP IV	659.2	552.3	-16.2%	807.8	807.0	-0.1%
Quimper-Pluguffan (LFRQ)	GROUP IV	659.2	2769.4	+320.1%	807.8	5280.9	+553.8%
Rennes-Saint-Jacques (LFRN)	GROUP IV	659.2	356.9	-45.9%	807.8	557.6	-31.0%
Rodez-Marcillac (LFCR)	GROUP IV	659.2	1395.0	+111.6%	807.8	3426.5	+324.2%
Rouen (LFRP)	GROUP IV	659.2	4442.7	+573.9%	807.8	6108.7	+654.3%
Saint-Etienne-Bouthéon (LFMH)	GROUP IV	659.2	4931.8	+648.1%	807.8	11604.2	+1335.6%
Saint-Nazaire-Montoir (LFRZ)	GROUP IV	659.2	1045.1	+58.5%	807.8	1453.4	+79.9%
Strasbourg-Entzheim (LFST)	GROUP IV	659.2	393.9	-40.2%	807.8	684.6	-15.2%
Tarbes-Lourdes Pyrénées (LFBT)	GROUP IV	659.2	893.1	+35.5%	807.8	1707.8	+111.4%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

- The average RP3 DUC for Paris-Charles-de-Gaulle (LFPG) and Paris-Orly (LFPO), both in TCZ1, are well below the median DUC of similar airports.
- On the other hand, the 59 airports included in TCZ2 show, on average, a worse performance than similar airports. Still this analysis should be taken with cautions due to the variety of airports included by France in TCZ2.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

France has not applied adjustments to the 2019 traffic or cost baseline.

Traffic forecasts (terminal)

Review of the PP traffic forecast

The terminal traffic forecast presented in the performance plan of France is in line with the STATFOR October 2021 base scenario. No modifications have been applied, differently from en route.

Determined costs (terminal)

Review of 2020/2021 determined costs

M€2017	%
+0.0	+0.0%
-3.0	-1.2%

2020 determined vs actual

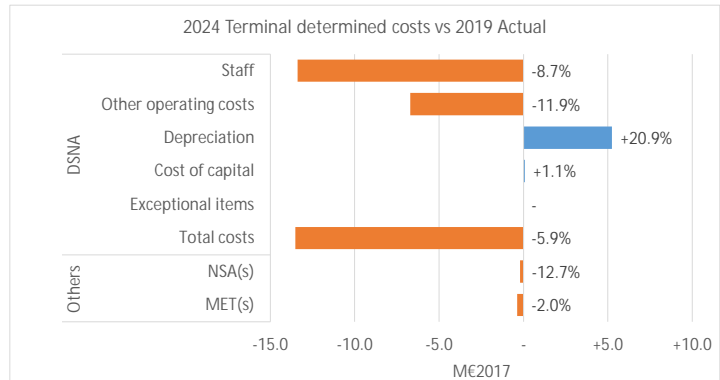
2021 determined vs actual

Cost elements - DSNA (terminal)

- ✓ Investments (see details in 3.5)
- Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ✓ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



- The share of terminal costs in total investment costs (15%) is slightly lower than the share of terminal costs in total determined costs (16%).
- The terminal WACCs reported are different among both terminal CZs and compared to the en route WACC, for all years of RP3. There is different information comparing the reporting tables and the related additional information.
- The share of terminal pension costs in total pensions costs (18%) is slightly higher than the share of terminal costs in total determined costs (16%).
- In terms of DUC evolution over RP3, TCZ1 is expected to increase its DUC by +0.6% p.a. between 2019 baseline and 2024, while TCZ2 decreases -2.4% p.a. between 2019 baseline and 2024. "This is mainly due to the priority given to terminal CZ1 in the review done by DSNA of the investment plan in order to prepare SYSAT implementation at major French airports and to secure capacity for Paris airports. This is largely compensated by the cost savings implemented by DSNA for terminal CZ2."
- For DSNA, total costs in 2024 are planned to be below the 2019 level (-5.9%, or -13.5M€2017). The main driver is the staff costs (-8.7%, or -13.4M€2017), followed by other operating costs (-11.9% or -6.7M€2017), and partially compensated by higher depreciation costs than planned (+20%) related to its investments planned in TCZ1 indicated above.
- In TCZ1, the total terminal service units are forecast to not reach the 2019 level in RP3, being -1.9% in 2024 according to the selected STATFOR October 2021 base forecast, while terminal costs are planned to exceed 2019 actual costs in 2024.
- In TCZ2, the total terminal service units are forecast to reach the 2019 level in 2024, according to the selected STATFOR October 2021 base forecast, while terminal costs are planned to not reach 2019 actual costs in RP3 (-7.5% in 2024).
- A cross-financing between TCZ1 and TCZ2 has been implemented, as observed in the reporting tables for all years of RP3. An average of 42.3M€, nominal terms, for each year of the period is subtracted from the costs considered to calculate the unit rate of TCZ2 and added to TCZ1.

4.5.4 PRB Key Points



No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- The terminal RP3 DUC trend is +0.6% for TCZ1 and -2.4% for TCZ2, worse and better, respectively, than the en route RP3 DUC trend of -0.4%.
- The terminal RP3 DUC trend is +0.6% for TCZ1, which is better than the terminal RP2 DUC trend of +1.5%. The terminal RP3 DUC trend is -2.4% for TCZ2, which is worse than the terminal RP2 DUC trend of -2.8%.
- Paris Charles-de-Gaulle and Paris Orly, the main airports (included in TCZ2), had a DUC lower than the median of their comparator group over RP2 and planned over RP3.
- France applied STATFOR October 2021 base forecast for terminal service units.
- A cross-financing between TCZ1 and TCZ2 has been implemented, shifting on average 42.3M€ p.a. between terminal charging zones.

PRB Assessment

GERMANY

Draft Performance Plan

1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
DFS	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	B	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

DFS	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	B	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Germany should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
ANSP target for horizontal en route flight efficiency (KEA) (%)	3.24%	2.70%	2.65%	2.65%	2.65%
Previous submitted PP	3.24%	2.70%	2.65%	2.65%	2.65%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC for Germany should be approved.

- Germany's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	2.73	0.18	0.24	0.25	0.24
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.66	0.45	0.45	0.45	0.45
Previous submitted PP (en route)	2.73	0.18	0.24	0.25	0.24
Previous submitted PP (terminal)	0.66	0.45	0.45	0.45	0.45

PRB assessment

The PRB concludes that the capacity breakdown values proposed by Germany should be approved.

- The en route capacity incentive scheme defined in the draft performance plan does not have a material impact on the revenue at risk.
- Germany included an investment regarding the detection of drones in the performance plan.
- Capacity plans in Bremen and Langen ACCs indicate that Germany may not be able to achieve the national capacity targets. For this reason, Germany has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.

4. Cost-efficiency ✓

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	129.44	67.52	63.29	59.89	-2.4%	-3.8%
Target for determined unit cost (DUC) (€2017) - Terminal	422.78	216.36	198.63	199.79	+1.3%	n/a
<i>Previous submitted PP (en route)</i>	129.44	67.52	63.29	59.89	-2.4%	-3.8%
<i>Previous submitted PP (terminal)</i>	422.78	216.36	198.63	199.79	+1.3%	n/a

PRB assessment

The cost-efficiency targets of Germany have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

The PRB concludes that the cost-efficiency targets proposed by Germany should be approved.

- Germany is consistent with the RP3 DUC trend in terms of average reduction.
- Germany is consistent with the long-term Union-wide DUC trend.
- Germany is not consistent with the average DUC baseline of the comparator group.
- Germany presents justifications for a deviation from the cost-efficiency trends to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.
- Some elements in the adjustment of the cost baseline should not be included. However, Germany would achieve the cost-efficiency trends without such adjustments.

5. PRB recommendations

ENVIRONMENT

- Germany should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Germany should revise the incentive schemes so that they have a material impact on the revenues.
- Germany should ensure that all capacity enhancement measures are properly implemented, and sufficient capacity is available to meet traffic demand.

6. PRB recommendations from the performance plans submitted in November 2021

ENVIRONMENT

- Germany should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Germany should align capacity profile plans, capacity enhancement measures and proposed capacity breakdown values.
- Germany should revise the incentive schemes so that they have a material impact on the revenues.
- Germany should ensure that all capacity enhancement measures are properly implemented, and sufficient capacity is available to meet traffic demand.

GERMANY

Safety KPA

1.1 Summary of safety key data and assessment results

Germany

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were met in 2021.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered adequate to maintain safety level to the end of RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA levels. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

DFS has established a dedicated change management process to handle the implementation of major airspace changes as well as implementation of new/revised ATM systems, under the approval of the German NSA.

All described processes provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

1.1.5 PRB conclusions



The PRB concludes that the safety targets proposed by Germany should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

Germany

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
DFS	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	D	C	C	C	D	D	✓	
	Safety assurance	B	C	B	B	B	C	C	✓	
	Safety promotion	B	C	B	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were planned to be attained in 2023, however Germany has already met the RP3 safety targets in all five management objectives in 2021.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA, and the FABEC Authorities.

At ANSP level, the following measures are planned to be implemented:

- Conduct a Safety Culture Survey;
- Conduct regular Local Safety Surveys;
- Conduct regular safety culture campaigns; and
- Regular update of the Safety Plan.

At the level of the Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373 applicable to EoSM improvements, are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment). Indicators, issues, and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

DFS has established a dedicated change management process to handle the implementation of major airspace changes as well as implementation of new/revised ATM systems.

The multi-step process (including analysis phase, planning and organisation, and implementation phase) is customised for the need of the change and uses a portfolio of various tools to ensure an optimal way to minimise the impact on day-to-day business/operational processes.

The process includes the assessment of all the changes and potential impacts to different functional systems generated by this change, safety and risk assessments, as well as the approval of the German NSA.

All described processes provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

GERMANY

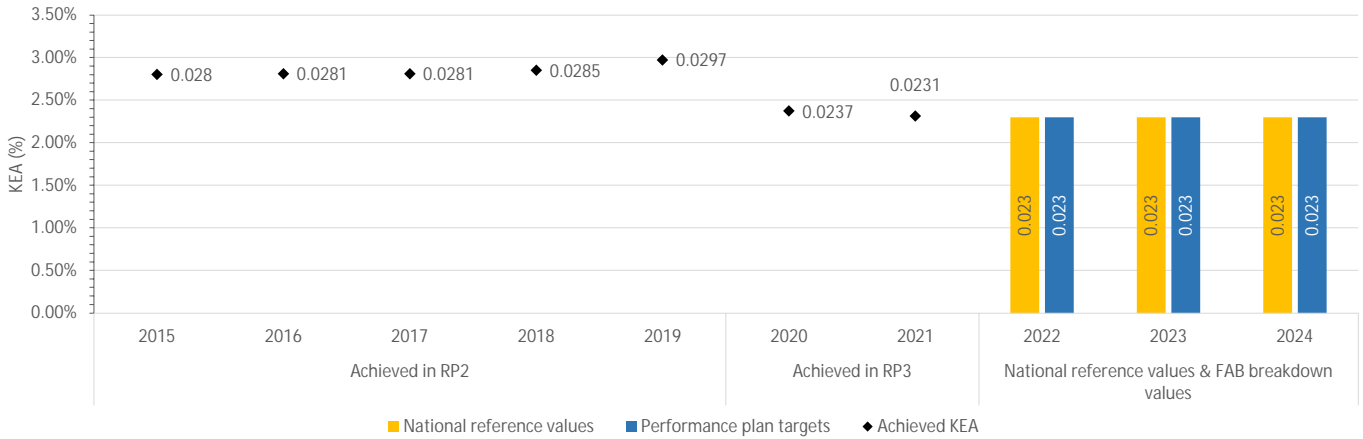
Environment KPA

2.1 Summary of Key Data and Assessment Results

Germany

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	2.81%	2.31%	2.30%	2.30%	2.30%
FAB breakdown values	n/a	2.31%	2.30%	2.30%	2.30%
Comparison of draft breakdown values with reference values	n/a	n/a	▲ 0.00%	▲ 0.00%	▲ 0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC for Germany should be approved.

- Germany's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- Germany should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Germany

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?		Reference in PP	Reference in LSSIP
With effect from March 2018, DFS implemented free route airspace (FRA) above FL245 within the part of Germany that is controlled by DFS and lies within the area of responsibility of Karlsruhe UAC (EDUU) and the respective parts of the of Bremen ACC (EDWW) and München ACC (EDMM). FRA Cells EDMM East, EDMM South, and EDWW East will remain available during night (2230-0400 UTC) only due to system limitations.	✓	3.2.1(a)	Page 94
Major 2021 ERNIP Recommended Measures:	12	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1(a)	Page 114
Langen ACC Sector Group 1 re-design	✓	3.2.1(a)	Page 115
ATS Route Improvement Langen ACC	✓	3.2.1(a)	Page 115
Sharp Turn Angle Resolution	✓	3.2.1(a)	Page 120
FRA Germany - Step 2c	✓	3.2.1(a)	Page 124
ATS Route Network Improvement Munich ACC/ Karlsruhe UAC	✓	3.2.1(a)	Page 128
Sector Changes in Munich ACC	✓	n/a	Page 135
New TANJO STAR Frankfurt/ EDDF	✗	n/a	Page 144
Interface re-sectorisation - COBRA WEST	✗	n/a	Page 179
Interface re-sectorisation - COBRA CENTRAL	✗	n/a	Page 190
PBN transition plan	✗	3.2.1(a)	Page 196
Cross-border FRA CHE/ DEU	✓	n/a	Page 211
Interface re-sectorisation between German ACCs	✗		
FUA Implementation according to latest LSSIP			
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Germany achieved a KEA of 2.37% in 2020. In 2021, Germany reached a KEA of 2.31% which means it achieved the 2021 target of 2.31% in its performance plan.

In the performance plan, Germany explains its actions in 2020 that had a significant impact on the environment performance such as removal of route restrictions, flight level caps, and other enhanced Network Manager (eNM) measures. This has given DFS the opportunity to implement new procedures and adopt best practice that it hopes to continue for the remainder of RP3.

Germany has committed to offering cross-border operations with Austria, Czech Republic, Poland, Switzerland, France, and Belgium in the course of 2022, which is a welcomed measure to help achieve the targets.

The above actions and commitments are consistent with the ERNIP, but further measures can also be used such as optimising interfaces and improving the route network until a full 24-hour FRA is available in Germany (EDMM South and EDWW East are still only night time FRA).

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Germany plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

GERMANY

Capacity KPA

3.1 Summary of capacity key data and assessment results

Germany

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values, and fall within the range of the delay forecast.

The capacity plans indicate that Bremen and Langen ACCs will face a capacity gap during 2022-2024 without implementing additional measures compared to those described in the latest NOP.

The implementation of the new ATM system may introduce capacity constraints in RP3.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Germany included 16 airports in the performance plan. The proposed national targets are significantly lower than the RP2 targets, however they are still higher than the average past performance.

Frankfurt, Munich, and Dusseldorf are the main contributors to arrival ATFM delay in Germany.

The performance of Munich, Stuttgart, and Berlin/Tegel is expected to be better than that of the similar group of airports, while the performance of Berlin Brandenburg, Frankfurt, Hamburg, Cologne-Bonn, Dusseldorf, Leipzig-Halle, and Bremen is expected to be worse than that of the similar group of airports.

3.1.3 Incentives

En route:

Germany has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the national incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

Germany has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.

The maximum bonus and penalty is set at 1%.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors by the ANSP in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

Germany included an investment regarding the detection of drones in the performance plan.

The investment "iCAS programme" was also included in the RP2 performance plan and it showed the largest underspending during the period.

The actual CAPEX for RP2 was 70% of the planned for the same period and the amount underspent was 207.6M€. In terms of depreciation and cost of capital, the airspace users have financed 36.6M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

Germany included a correction in the performance plan defined as "experience-based correction by DFS management and non-regulated services to show reduced depreciation figures" that reduces the amount of the total new and existing investments by 79.4M€ over the period.

Significant capacity deficit is expected in Bremen and Langen ACCs, while Karlsruhe UAC and Munich ACC are expecting surplus capacity based on capacity profile plans.

New major investments with capacity benefits beyond RP3 are envisaged but due to early project phase the benefit realisation target date has a lot of uncertainty. Major investments contribute only to PCP/CP1 ATM Functionality AF6.

Several investments contribute to resilience, scalability and flexibility and are in line with the European ATM evolution.

3.1.5 PRB conclusions



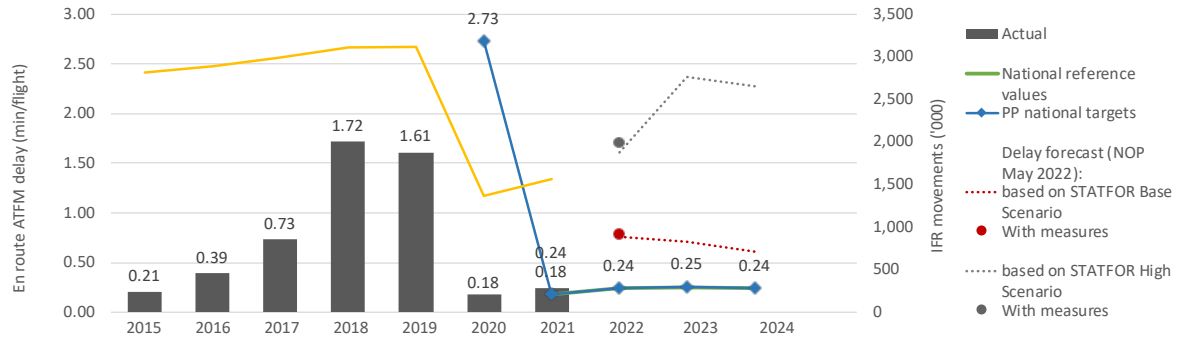
The PRB concludes that the capacity breakdown values proposed by Germany should be approved.

- The en route capacity incentive scheme defined in the draft performance plan does not have a material impact on the revenue at risk.
- Germany included an investment regarding the detection of drones in the performance plan.
- Capacity plans in Bremen and Langen ACCs indicate that Germany may not be able to achieve the national capacity targets. For this reason, Germany has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.
- Germany should revise the incentive schemes so that they have a material impact on the revenues.
- Germany should ensure that all capacity enhancement measures are properly implemented, and sufficient capacity is available to meet traffic demand.

3.2 En route ATFM delay per flight

Germany - DFS

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+2%	+2.7%	+3.5%	+4.0%	+0.2%	-56.1%	+14.8%			
Actual delay/flight	0.21	0.39	0.73	1.72	1.61	0.18	0.24			
National reference values						n/a	0.18	0.24	0.25	0.24
PP national targets						2.73	0.18	0.24	0.25	0.24
Delay forecast*:										
Based on STATFOR High Scenario	w/o measures						-	1.61	2.37	2.27
	with measures						-	1.70	-	-
Based on STATFOR Base Scenario	w/o measures						-	0.76	0.71	0.61
	with measures						-	0.79	-	-

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.2.2 Review of planned capacity enhancement measures ⚠

Assessment of capacity enhancement measures and review against NOP

During RP2, the ACCs of Germany experienced capacity constraints related mostly to Bremen (ATM capacity and weather), Karlsruhe (ATM capacity, weather, and staffing), Langen (ATM capacity, weather, and staffing), and Munich (weather). Germany generated delays significantly higher than capacity targets in 2017 (+76%), 2018 (+283%), and 2019 (+245%).

The performance plan provides the following capacity enhancement measures:

- ATM system upgrade (iCAS) and ATCO training,
- Airspace redesign and re-sectorisation - COBRA (Collaborative Optimization of Boundaries, Routes and Airspace),
- Implementation of a Complexity Management Tool (2023),
- Increasing ATCO numbers in line with the traffic demands, flexible planning and rostering, and
- Cross-border initiatives.

The combination of the proposed measures is considered as appropriate and effective to address the capacity gap experienced by Germany in the past, providing that all measures are properly implemented as planned.

The number of planned ATCO FTEs is reasonable, and addresses ACCs, which had capacity/staffing issues in RP2 although with low backup for Langen ACC. The realisation of the planned increase of ATCO FTEs in Karlsruhe UAC by the end of 2022 will be critical in achieving the adequate level of staffing for later years of RP3.

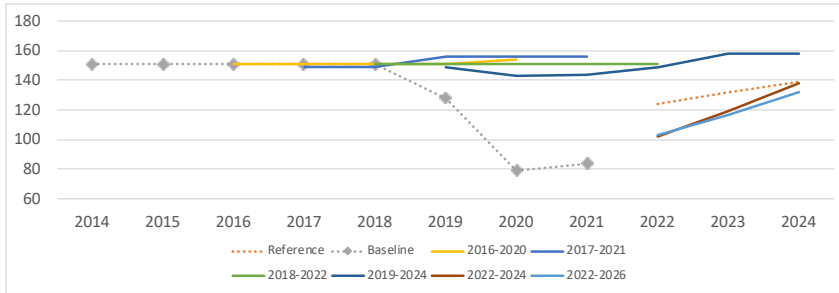
ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Bremen ACC (EDWW)	Additional ATCOs in OPS to start working in the OPS room	9.6	1.2	7.6	6	14.6	27.05	25.15	
	ATCOs in OPS to stop working in the OPS room	12.08	13.16	22.51	5.7	16.35	12.65	5.35	
	ATCOs in OPS to be operational at year-end	261.78	249.82	234.91	235.21	233.46	247.86	267.66	+18
Langen ACC (EDGG)	Additional ATCOs in OPS to start working in the OPS room	8	13.5	8.23	18.04	27.46	32.7	29.83	
	ATCOs in OPS to stop working in the OPS room	17.41	35.85	15.09	16.02	43.83	15.43	23.26	
	ATCOs in OPS to be operational at year-end	467.2	444.85	437.99	440.01	423.64	440.91	447.48	+3
Karlsruhe UAC (EDUU)	Additional ATCOs in OPS to start working in the OPS room	8.8	9.4	42.7	36.282	63.101	33.573	22.573	
	ATCOs in OPS to stop working in the OPS room	27.4	17.2	59.14	11.818	21.203	7.171	9.9	
	ATCOs in OPS to be operational at year-end	404.21	396.41	379.97	404.434	446.332	472.734	485.407	+89
Munich ACC (EDMM)	Additional ATCOs in OPS to start working in the OPS room	0	3.4	2	8.18	7.66	24.649	6.294	
	ATCOs in OPS to stop working in the OPS room	16.01	13.09	11.79	7	14.325	15.873	1.68	
	ATCOs in OPS to be operational at year-end	297.32	287.63	277.84	279.02	272.355	281.131	285.745	-2
Total - DFS (en route)	Additional ATCOs in OPS to start working in the OPS room	26.4	27.5	60.53	68.502	112.821	117.972	83.847	
	ATCOs in OPS to stop working in the OPS room	72.9	79.3	108.53	40.538	95.708	51.124	40.19	
	ATCOs in OPS to be operational at year-end	1430.51	1378.71	1330.71	1358.67	1375.79	1442.64	1486.29	+108

3.2.3 Review of previous and existing capacity profile plans per ACC



Bremen ACC (EDWW)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									124	132	139
Baseline	151	151	151	151	151	128	79	84			
2016-2020			151	151	151	151	154				
2017-2021				149	149	156	156	156			
2018-2022					151	151	151	151	151		
2019-2024						149	143	144	149	158	158
2022-2024									102	119	138
2022-2026									103	117	132
Latest vs Reference									-17%	-11%	-5%

- Historical data shows that capacity plans were mainly followed and that the baseline value remained flat at 151 until 2019.

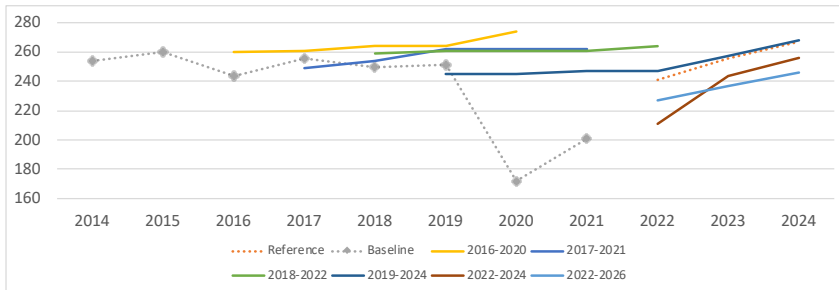
- During 2022-2024, Bremen ACC plans training for iCAS, which may impact capacity.

- Bremen ACC is expected to reach 2019 traffic level in 2024 or later.

- The latest capacity plans show an annual growth of 13.2% on average. A significant capacity gap of 17% is expected in 2022, which is gradually reduced to 5% in 2024.

- The planned increase in ATCO FTEs corresponds to the planned capacity profiles.

Langen ACC (EDGG)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									241	256	267
Baseline	254	260	244	256	250	251	172	201			
2016-2020			260	261	264	264	274				
2017-2021				249	254	262	262	262			
2018-2022					259	261	261	261	264		
2019-2024						245	245	247	247	257	268
2022-2024									211	244	256
2022-2026									227	237	246
Latest vs Reference									-6%	-7%	-8%

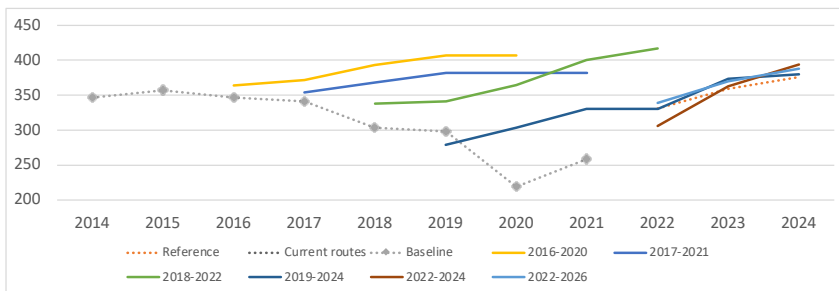
- Historical data shows that the baseline value increased in all the years of RP2 except in 2016 when the baseline value decreased by 6.5%.

- During 2022-2024, Langen ACC plans training for iCAS, which may impact capacity.

- Langen ACC is expected to reach 2019 traffic levels in 2024 or later.

- The latest capacity plans show an annual growth of 4.1% on average. An increasing capacity gap is expected in all remaining years of RP3.

Karlsruhe UAC (EDUU)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									331	360	376
Baseline	347	357	347	341	303	299	219	258			
2016-2020			364	371	393	407	407				
2017-2021				354	368	382	382	382			
2018-2022					338	342	365	400	417		
2019-2024						279	304	331	331	374	380
2022-2024									306	363	394
2022-2026									339	370	388
Latest vs Reference									2%	3%	3%

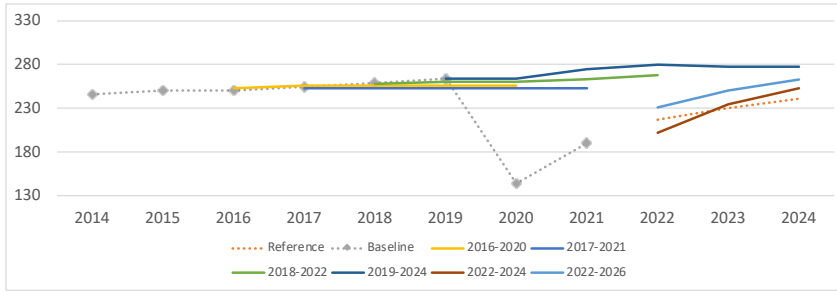
- Historical data shows that the baseline value significantly decreased between 2015 and 2018 and that the plans from 2018 onwards were not realised.

- Karlsruhe ACC is expected to reach 2019 traffic level already in 2022.

- The latest capacity plan shows an average annual growth of 7%, resulting in a reasonable capacity surplus of 2 to 3% in all remaining years of RP3.

- The planned number of ATCO FTEs corresponds to the planned capacity profiles.

Munich ACC (EDMM)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference											
Baseline	246	250	250	255	259	264	144	190			
2016-2020			253	256	256	256	256				
2017-2021				253	253	253	253	253			
2018-2022					258	260	260	263	268		
2019-2024						264	264	275	280	277	277
2022-2024									202	234	253
2022-2026									231	250	263
Latest vs Reference									6%	9%	9%

- Historical data shows that baseline values increased during RP2 except in 2016 where no baseline growth was achieved.
- During 2021-2022, Munich ACC plans training for iCAS ATM system and its implementation during 2022-2023.
- Munich ACC is expected to reach 2019 traffic level in 2024.
- The latest capacity plan shows an average annual growth of 6.7%. This results in a reasonable capacity surplus in all remaining years of RP3.

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

Review of the planned impact of special events in some years of RP3

The performance plan provides a list of projects and activities that may impact capacity performance including:

Bremen ACC:

- Training and transition for iCAS Phase II : significant capacity reduction expected in 2022 and 2023 in all sector families, and
- iCAS Phase II (01/2024-03/2024).

Karlsruhe UAC:

- COBRA (Collaborative Optimization of Boundaries, Routes and Airspace) (Q1/2022),
- Implementation of a Complexity Management Tool (2023), and
- Erlangen sector: vertical split into 3 sectors (capacity increase through a more flexible opening scheme) (2024).

Langen ACC:

- iCAS Phase II (10/2025-03/2026).

Munich ACC:

- iCAS Phase II (09/2022).

Additionally, the NOP references ILA Berlin Fair and MAGEX (military exercise in June 2023). The performance plan makes only high-level reference to the possible impacts of these events.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

The information is not available in the performance plan in sufficient detail to make an assessment.

3.2.5 Review of the measures to increase capacity and address capacity gaps

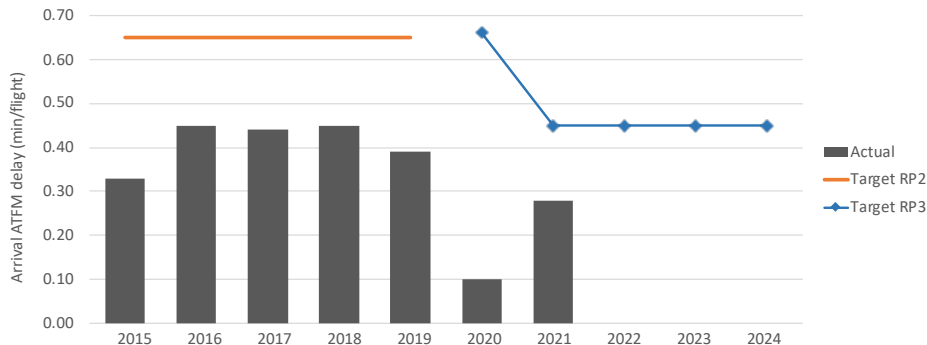
- a) Performance plan contains additional measures compared to the NOP in order to close the capacity gap? ✘
With low level of detail on capacity enhancement measures, it is difficult to make the link with proposed capacity targets.
- b) Measures proposed by the NM to enhance capacity are planned and described in the performance plan? ⓘ
The performance plan does not contain the abovementioned information.
- c) The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? ✘
The performance plan does not contain the abovementioned information.
- d) The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? ✘
The performance plan does not contain the abovementioned information.
- e) Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? ⓘ
The planned number of ATCO FTEs is in line with capacity profiles but it may not be sufficient to close the capacity gap mainly for Langen ACC and Bremen ACC, where the capacity gaps are expected to remain for 2022 until 2024.
- f) The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? ⓘ
The performance plan contains references measures targeted at flexible planning and rostering of operational personnel, however only high level information is provided.
- g) The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? ✔
The performance plan does not explicitly identifies limitations of the current ATM system, nevertheless the new ATM system (iCAS) is to be implemented during RP3 and it is expected to address existing limitations (at least partially).

3.2.6 PRB Key Points

- The ANSP breakdown values are consistent with the ANSP reference values, and fall within the range of the delay forecast.
- The capacity plans indicate that Bremen and Langen ACCs will face a capacity gap during 2022-2024 without implementing additional measures compared to those described in the latest NOP.
- The implementation of the new ATM system may introduce capacity constraints in RP3.

3.3. Arrival ATFM delay per flight

3.3.1 Overview of arrival ATFM delay per flight



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level	0.65	0.65	0.65	0.65	0.65	0.66	0.45	0.45	0.45	0.45
Target (RP2/RP3)	0.65	0.65	0.65	0.65	0.65	0.66	0.45	0.45	0.45	0.45
Actual	0.33	0.45	0.44	0.45	0.39	0.10	0.28	-	-	-
Berlin Brandenburg (formerly Berlin-Frankfurt) (EDDF)	0.00	0.05	0.04	0.01	0.04	0.00	0.24	0.24	0.24	0.24
Hamburg (EDDH)	0.67	0.86	0.84	0.87	0.69	0.19	0.94	0.94	0.94	0.94
Cologne-Bonn (EDDK)	0.57	0.39	0.26	0.55	0.55	0.03	0.38	0.38	0.38	0.38
Dusseldorf (EDDL)	0.02	0.08	0.39	0.47	0.31	0.03	0.16	0.16	0.16	0.16
Munich (EDDM)	0.34	0.54	0.73	0.45	0.68	0.26	0.53	0.53	0.53	0.53
Stuttgart (EDDS)	0.33	0.49	0.35	0.44	0.25	0.08	0.49	0.49	0.49	0.49
Berlin/ Tegel (EDDT)	0.09	0.08	0.13	0.14	0.14	0.00	0.08	0.08	0.08	0.08
Dresden (EDDC)	0.20	0.53	0.39	0.18	0.19	0.05	0.00	0.00	0.00	0.00
Erfurt (EDDE)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Muenster-Osnabrueck (EDDG)	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Nuremberg (EDDN)	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Leipzig-Halle (EDDP)	0.00	0.18	0.12	0.35	0.35	0.14	0.14	0.14	0.14	0.14
Saarbruecken (EDDR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hanover (EDDV)	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Bremen (EDDW)	0.00	0.03	0.01	0.41	0.34	0.01	0.09	0.09	0.09	0.09

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

The proposed national target is constant for the period 2021 to 2024 and equals to 0.45 minutes per arrival, which is an improvement with respect to RP2 targets but represents higher delays than observed in average during RP2 (0.41 minutes per arrival). Germany uses the STATFOR October 2021 base forecast with a CAGR in IFR movements of -0.1% for the period (2019-2024).

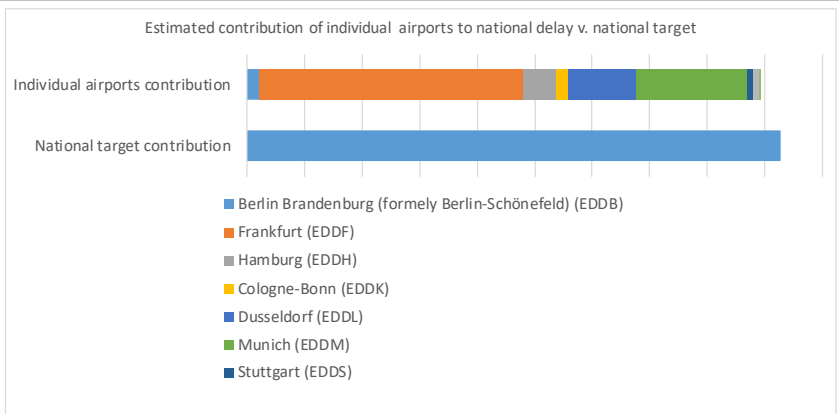
According to the performance plan, the following items were considered when setting the national target:

1. Traffic of the previous years,
2. Delay of the previous years,
3. Traffic forecasts,
4. Technical developments and probability of system failures,
5. Potential influence of the COVID-19 pandemic on capacity, and
6. Eventuality of “uncontrollable” or non-CRSTMP delays.

These factors were particularly considered in the target calculation since these are the major factors influencing the overall national capacity value at airports for the upcoming years.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Berlin Brandenburg (formerly Berlin-Frankfurt) (EDDF)	0.24
Hamburg (EDDH)	0.94
Cologne-Bonn (EDDK)	0.38
Dusseldorf (EDDL)	0.16
Munich (EDDM)	0.53
Stuttgart (EDDS)	0.49
Berlin/ Tegel (EDDT)	0.08
Dresden (EDDC)	0.00
Erfurt (EDDE)	0.00
Muenster-Osnabrueck (EDDG)	0.00
Nuremberg (EDDN)	0.01
Leipzig-Halle (EDDP)	0.14
Saarbruecken (EDDR)	0.00
Hanover (EDDV)	0.00
Bremen (EDDW)	0.09
National Target	0.45



Frankfurt is the main contributor in terms of delay (as it is in terms of IFR movements) followed by Munich and then Dusseldorf, and Hamburg. Nevertheless, the estimated contribution is based on the RP3 targets but the RP2 traffic share, which has changed for Berlin (EDDB) since it has now incorporated the traffic from the former Berlin Tegel (EDDT). Therefore a higher contribution than the one displayed in the chart is expected for Berlin Brandenburg (EDDB). The breakdown of the targets per airport approximately corresponds with the national target, assuming the same traffic share as in the past.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Berlin Brandenburg (formerly Berlin-Frankfurt (EDDF)	GROUP III	0.12	0.03	-0.09	0.24	+0.12
Hamburg (EDDH)	GROUP III	0.12	0.46	+0.34	0.38	+0.26
Cologne-Bonn (EDDK)	GROUP III	0.12	0.26	+0.14	0.16	+0.04
Dusseldorf (EDDL)	GROUP III	0.12	0.55	+0.43	0.53	+0.41
Munich (EDDM)	GROUP I	0.65	0.37	-0.28	0.49	-0.16
Stuttgart (EDDS)	GROUP III	0.12	0.12	+0.00	0.08	-0.04
Berlin/ Tegel (EDDT)	GROUP III	0.12	0.30	+0.18	0.00	-0.12
Dresden (EDDC)	GROUP IV	0.00	0.00	+0.00	0.00	-0.00
Erfurt (EDDE)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00
Muenster-Osnabrueck (EDDG)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00
Nuremberg (EDDN)	GROUP IV	0.00	0.00	+0.00	0.01	+0.01
Leipzig-Halle (EDDP)	GROUP IV	0.00	0.21	+0.21	0.14	+0.14
Saarbruecken (EDDR)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00
Hanover (EDDV)	GROUP IV	0.00	0.01	+1%	0.00	-0%
Bremen (EDDW)	GROUP IV	0.00	0.15	+15%	0.09	+9%

* GROUP I - Avg. mvts. in 2016-2018 $\geq 225,000$; GROUP II - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and seasonal; GROUP III - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 $< 80,000$

Munich and former Berlin Shoenefeld are the only German airports that performed better than similar airports during RP2. Frankfurt and all other medium airports performed worse than other airports in their respective category. The proposed targets per airport continue in the same line.

3.3.5 PRB Key Points

- Germany included 16 airports in the performance plan. The proposed national targets are significantly lower than the RP2 targets, however they are still higher than the average past performance.
- Frankfurt, Munich, and Dusseldorf are the main contributors to arrival ATFM delay in Germany.
- The performance of Munich, Stuttgart and, Berlin/Tegel is expected to be better than that of the similar group of airports, while the performance of Berlin Brandenburg, Frankfurt, Hamburg, Cologne-Bonn, Dusseldorf, Leipzig-Halle, and Bremen is expected to be worse than that of the similar group of airports.

3.4 Capacity Incentive schemes

Germany

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±30.0%	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.24	0.25	0.24
Alert threshold (Δ Ref. value in fraction of min)			±0.052	±0.053	±0.052
Performance Plan targets			0.24	0.25	0.24
Pivot values for RP3			0.16	0.17	0.16

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A deadband of +/- 30% is applied around modulated pivot value before any incentives apply. The maximum penalties or bonuses apply at +/- 0.05 minutes from pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 70% of total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could affect financial incentives.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of determined costs.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±50.0%	1.000%	1.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.013	±0.013	±0.013
Performance Plan targets			0.45	0.45	0.45
Pivot values for RP3			0.03	0.03	0.03

Threshold and pivot value review

The German terminal incentive scheme has opted for a dead band of 50% of the pivot value, which means there is no linear progression in the application of bonuses / penalties, and only the maximum bonus or penalty is to be applied. The pivot values are constant and CRSTMP modulated and the proposed value represents a slight worse performance than during RP2.

Modulation review

Germany has chosen to modulate the pivot values according to CRSTMP causes. The proposed pivot value is constant for 2022-2024 period and is set at 0.026 minutes per arrival, the average value (as reported in the performance plan) since the beginning of RP1 (2012-2020). Nevertheless, this pivot value is twice the average reported CRSTMP delays in 2015-2019 (0.013 minutes per arrival).

Review of financial advantages/disadvantages

Germany is one of the few countries that presents an incentive scheme with 1% associated maximum bonus or penalties. According to the performance during RP2, this scheme would have resulted in a maximum bonus (2 years) or no bonus / penalty (3 years).

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✗

En route:

- Germany has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.
- In addition to the national incentive scheme, a FAB-level incentive scheme also applies.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

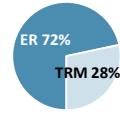
- Germany has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.
- The maximum bonus and penalty is set at 1%.
- As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors by the ANSP in the attribution of cause of delay could impact the financial incentive.

3.5 Investments

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	94.3	93.3	100.4	110.9	122.3	521.2
	En route	70.0	66.1	71.2	78.7	87.5	373.6
	Terminal	24.2	27.2	29.1	32.2	34.8	147.6

RP3 investment ratio ER/TRM



* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State. The numbers presented in this table do not correspond to the values presented below due to inconsistencies between the performance plan and its annex A and B. Germany included a correction in the performance plan defined as "experience-based correction by DFS management and non-regulated services" that reduces the amount of the total new and existing investments by 79.4M€ over RP3.

3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	Drone Detection System	DFS got the order by the Ministry of Transport to establish at all international airports a system to seek, recognize and identify all flight objects flying in the TMA that cause dangerous situations at international airports. Quick action to complete the project is required due to the misuse of drones and the number of drone sightings and threats in the vicinity of the airport with the known consequences. More details can be found in section 2.3 of the performance plan.	193.7	No	No	0.0	6.0
2	iCAS architecture project	Software licenses for the ATS-System. The new iCAS Architecture and peripheral systems will provide a more cost efficient and flexible mode of operation on Data Center Platforms, i.e. IaaS, CaaS cloud service models. It is in line with the EATM Masterplan.	53.9	No	No	0.0	0.0
3	Data Center	Platform to support cost efficient operation modes for ATS Systems, i.e. IaaS, CaaS	27.7	No	No	3.2	0.8
4	PIPE2 – IP enhancement phase 2	With the IP upgrading project for the radio and radar sites Phase 1, 144 sites were non-redundantly connected to the MPLS-A network. This is where phase 2 begins, with which the redundant connection to the locations from phase 1 as well as to all other remote locations will take place. In addition, the Voice-over-IP and Surveillance-over-IP functionality will be introduced throughout DFS. More details can be found in section 2.3 of the performance plan.	27.5	No	No	2.6	0.6
5	New construction of an office building at the DFS Campus in Munich	Due to legal requirements, the existing old ACC building would need to be extensively renovated. A CBA comparing the cost for option 1 (the demolition of that building with the construction of a new office building for only administrative functions) with option 2 (renovation of the old ACC building) proved option 1 being the less expensive one. By the end of the year the project was stopped in order to find out if it's also feasible to rent the required space. The current solution intends to rent for five years, demolish the old building in the meantime and restart the planning of the project in 2023.	19.1	No	No	0.2	0.1
6	iTEC V3	Seven European ANSPs, organised in the ITEC Cooperation, intend to develop a common ATS system named iTEC OneSky. Based on harmonised requirements across all seven ANSPs iTEC OneSky will provide - new way in sharing major cost (for development, training, operation, maintenance, etc.), - an efficient way to keep ATM systems state-of-the-art and up-to-date, - a major technical step forward (e.g using cloud technology) - new possibilities of working seamless and harmonised (based in a common CONOPS). More details can be found in section 2.3 of the performance plan.	10.6	No	Yes	0.8	0.0
7	ViTo-MUC - Virtual Tower Munich	The Flughafen München GmbH (FMG) informed DFS, that the Tower building at the airport has to be renovated. The FMG owns the building used by DFS and others. The contract between DFS and FMG states the DFS has to bear a 47% share of the renovation costs. More details can be found in section 2.3 of the performance plan.	6.4	No	No	0.0	0.7
8	Program ADS-B	The goal is to implement the surveillance system mix set forth in the Surveillance Strategic Architecture Plan and, as a result, to reduce the number of radar systems to be modernized, taking into account today's air situational requirements.	5.3	Yes	No	0.6	0.1
9	ADS-C	The goal of this project is develop and provide the necessary ADS-C systems and application software necessary to comply with EU Commission Implementing Regulation EU 2021/116 , part AF6 "Initial Trajectory Information Sharing". The AF6 mandates the support of ADS-C functions for airspace users and by all European ANSPs for all flight segments above FL285 from 31.12.2027 onwards. The project scope thus includes the ATS system development for DFS control centers in Karlsruhe and partially Munich. More details can be found in section 2.3 of the performance plan.	8.9	Yes	Yes	0.0	0.0
Total:						7.4	8.3

Airspace user feedback regarding major investments

The airspace users support the investments that are expected to deliver increase in capacity, productivity and cost-efficiency. However, they commented that the ANSP has failed to provide quantifiable justification for cost-efficiency gains for the proposed investments.

The airspace users reiterated their concern about the Drone Detection System investment, which is considered not eligible to be included in the performance plan.

Germany noted that there was a review of the benefit and legality of the inclusion of the investment in the performance plan, adding that the costs will be split according to a transparent methodology approved by the NSA and will lower the terminal charges for the respective year in accordance with Art. 29 (6) IR (EU) 2019/317.

Review of investments

Investment #2 is related to the investment "iCAS programme", which was included in RP2 and represented DFS' largest underspending during RP2 and will continue throughout RP3. New major investments represent 3.2% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 70% of the planned for the same period and the amount underspent was 207.6M€. In terms of depreciation and cost of capital, the airspace users have financed 36.6M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Drone Detection System	None	Safety, Capacity, Cost-efficiency	Quick action to complete the project is required due to the misuse of drones and the number of drone sightings and threats in the vicinity of the airport with the known consequences. Such incidents and operational disruptions also result in loss of revenue, costs, and considerable damage to the image of the airports. With the installation of the Drone Detection System, all unmanned aircraft systems (UAS) that may pose a threat can be detected.
2	iCAS architecture project	Network, Local	Cost-efficiency	n/a
3	Data Center	Network, Local	Cost-efficiency	n/a
4	PIPE2 – IP enhancement phase 2	Local	Safety, Capacity, Cost-efficiency	The aim is to use an integrated network design to connect the applications of the communication, navigation and surveillance domains in a uniform and future-proof manner with an All-IP network.
5	New construction of an office building at the DFS Campus in Munich	None	Cost-efficiency	The demolition of the old building and the new construction of the new office building are having a positive effect, as a refurbishment of the old building would be considerably more expensive than a demolition and new construction. The facility Management costs for the new and smaller building are less than for the current old building.
6	iTEC V3	Network, Local	Safety, Environment, Capacity, Cost-efficiency	Provides the opportunity for future business models (like ADSP) and improved cooperation between the ANSPs that are covering a major part of the European Airspace. iTEC OneSky Definition Phase has started to agree the common requirements for the iTEC OneSky systems. By end of 2022/beginning of 2023 iTEC ANSPs will decide based on improved business cases about the implementation of iTEC OneSky. Implementation Phase is foreseen to start mid 2023, a first deployment of iTEC OneSky at DFS will be possible not earlier than 2028.
7	ViTo-MUC - Virtual Tower Munich	Local	Safety, Cost-efficiency	The reductions compared to the Draft Performance Plan RP3-2019 result from the validation of an alternative approach with the aim of increasing the "Finance" KPI. During the validation, the renovation measures are limited to the bare minimum. Depending on the validation results, the implementation of the virtual approach or the renovation of the ATC tower will then take place after RP3.

Additional information

Drone Detection System (DDS): after an additional review of the benefit and legality concerning the inclusion of the DDS project into the performance plan, NSA opts to include it as the initial plan. The DDS project is legally included based on regulation, in order to avoid any collision at the terminal and it is not a matter of national security, but a project to ensure the safety of aviation. The cost of prosecution of infringements is not part of it and also not the cost of drone defense, it is just a surveillance system to uncover drones.

iCAS architecture project: joint investment in coordination with iCAS and iTEC partners. Overhaul of Data Center readiness for the iCAS ATS-System and peripheral components. It contributes to Essential Operational Change 'Virtualisation of Service Provision' [European ATM Master Plan 2019, chapter 4.2.5].

Data Centre: replacement of local IT-infrastructure by a central IT-infrastructure in Data Center. (a) Data Center Initial disassembly and scaling services contribute to Essential Operational Change 'Virtualisation of Service Provision' [European ATM Master Plan 2019, chapter 4.2.5]; (b) Data Center initial disassembly is additionally indirectly linked to DVO (EU) 716/2014 because the IT-infrastructure changes are the precondition for realising the project TANGE which will fulfill the mentioned DVO.

iTEC V3: joint investment of seven ANSPs collaborating in iTEC. iTEC V3 is based on current components shared between iTEC partners. The result will be a new ATS System ready to be deployed at all "iTEC centres". iTEC V3 will implement mandated functionality included in current CP1 (EU 2021/116, former PCP) such as SWIM, Free Route, Extended Arrival Management.

ViTo-MUC - Virtual Tower Munich: ATM MP: SDM-0201 Remotely Provided Air Traffic Service for Single Aerodrome.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	27.9	21.3	0.1	0.3	1.0	1.6	2.2	5.3
Existing investments			99.3	99.6	106.5	116.9	126.2	548.5

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	SWE iCAS Phase II KAR	4.9	2.6	0.0	0.0	0.0	0.0	0.2	0.2	As part of a cooperation between MUAC and DFS, a study is currently being conducted to determine whether a joint air traffic control system can be used in the future (MAKAN: MAastricht Karlsruhe Networks). The realisation of MAKAN would replace the planning of iCAS2.
2	iCAS Flight Object IOP	4.1	1.9	0.0	0.0	0.0	0.0	0.0	0.0	The iCAS Systemproject iCAS Flight Object IOP is currently in the planning phase due the changed IOP Strategy. The project will implement the necessary functionality in the future iTEC V3 ATM system to prepare the deployment of Flight Object interoperability as part of iSWIM in the DFS control centers. The assets reported here are preliminary and will be updated once the planning phase is completed.
3	A-SMGCS Leipzig	3.9	3.9	0.0	0.1	0.3	0.5	0.5	1.4	Implementing an A-SMGCS Level 2 (Phoenix-Ground-Situation-Display) including the necessary infrastructure (e.g. Sensor technology, Power, Data, HMI) at the international Airport Leipzig.
4	LIZ Rehosting	2.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	Migration of servers from current location and management to a central Data Center incl. software portation wherever necessary.
5	Future orientation AIM and Regulation	2.2	2.2	0.0	0.0	0.1	0.2	0.3	0.6	The functional system in the context of AIM has undergone many changes in recent years and the change continues. The ZAAR project is intended to analyze the actual situation of the functional systems and the upcoming requirements.
6	Maintenance Solutions	1.2	1.0	0.0	0.1	0.1	0.2	0.2	0.6	Modern maintenance processes and technologies (e.g. Mobile Work & Asset Management, IIoT & Predictive Maintenance, Digital & Smart Logistics) based on a future-proof infrastructure.
7	Automation tools ATM	1.6	1.6	0.0	0.0	0.0	0.1	0.2	0.3	CATo, MET-IF, DZSA, future CWP
8	Measuring technology	2.6	2.0	0.0	0.0	0.0	0.1	0.2	0.3	Procurement, regular operation service and maintenance from several measuring technologies (hard- and software e.g. oscilloscope or high-precision test measurement station for TACAN and DME systems including software applications for monitoring and reporting).

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls?



Significant capacity deficit is expected in Bremen ACC in 2022 (-17%), reducing to -5% in 2024. At Langen ACC the capacity deficit in 2022 is expected to be -6% increasing to -8% in 2024, while in Karlsruhe UAC and Munich ACC some capacity surplus can be expected during RP3.

There are no major new investments contributing to capacity during RP3, some new investments are expected to contribute to capacity after RP3. One capacity contributing new major investment (ADS-C) will contribute to PCP/CP1 ATM Functionality AF6 but will only be deployed in 2029. One new major investment (iTEC V3) is in definition phase but can be expected to contribute to CP1 ATM Functionalities and provide capacity benefits once it progresses to implementation phase. However, the implementation may be even beyond RP4.

Several new major investments (ADS-B, ADS-C, ViTo-MUC, iCAS architecture project, PIPE2 and Drone detection system) contribute also to resilience, scalability, and flexibility.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?



The iTEC V3 investment is expected to introduce new capabilities in virtualisation and ADSP capabilities in line with the expected evolution of ATM in the European region. This can be expected to generate benefits in the capacity domain as well as improve flexibility, scalability, and resilience. The specific functions to be deployed are not elaborated in the performance plan but e.g. FO-IOP capabilities are noted.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?



The iTEC V3 investment is expected to be deployed in 2028 at the earliest and therefore any benefits will not materialise during RP3 or possibly even during RP4. The predecessor of iTEC V3 (iCAS programme (iTEC Centre Automation System)) was included in FABEC / DFS RP2 planning with expected capacity benefits for Karlsruhe (2018), Bremen (2018-2020), Munich (2019-2021), and Langen (2020-2022). iCAS has been implemented in Karlsruhe in 2017 but according to LSSIP 2020 Germany, the implementation in Bremen, Munich, and Langen is now planned for 2024, 2022 and 2025-26 respectively. Taking into consideration the current delays in iCAS programme deployment, an eight to nine year gap may be expected between the first and last implementations of the iCAS system. Taking into consideration the capacity deficit in Bremen ACC and the deficit increasing in Langen during RP3 the late deployment of iTEC V3 investment may contribute to even further capacity deficit increase beyond RP3 and the situation should be closely monitored.

3.5.4 PRB Key Points

- Germany included an investment regarding the detection of drones in the performance plan.
- The investment "iCAS programme" was also included in the RP2 performance plan and it showed the largest underspending during the period.
- The actual CAPEX for RP2 was 70% of the planned for the same period and the amount underspent was 207.6M€. In terms of depreciation and cost of capital, the airspace users have financed 36.6M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.
- Germany included a correction in the performance plan defined as "experience-based correction by DFS management and non-regulated services to show reduced depreciation figures" that reduces the amount of the total new and existing investments by 79.4M€ over the period.
- Significant capacity deficit is expected in Bremen and Langen ACCs, while Karlsruhe UAC and Munich ACC are expecting surplus capacity based on capacity profile plans.
- New major investments with capacity benefits beyond RP3 are envisaged but due to early project phase the benefit realisation target date has a lot of uncertainty. Major investments contribute only to PCP/CP1 ATM Functionality AF6.
- Several investments contribute to resilience, scalability and flexibility and are in line with the European ATM evolution.

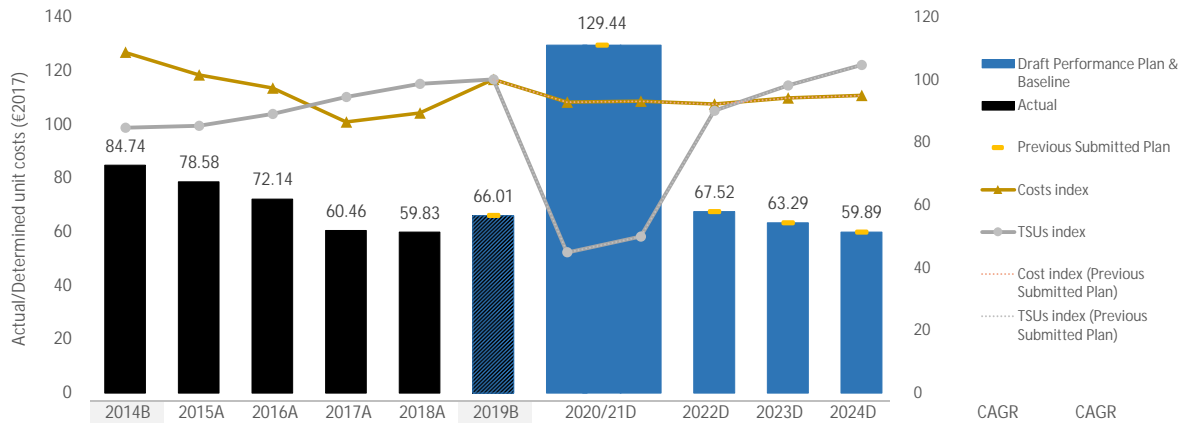
GERMANY

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Germany - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



		2014B	2015A	2016A	2017A	2018A	2019B	2020/21D	2022D	2023D	2024D	CAGR 2019B-2024	CAGR 2014B-2024
Total costs	M€ (nom)	1,069	998	961	865	906	1,028	1,935	977	1,010	1,034	+0.1%	+0.1%
Total costs	M€ (2017)	1,087	1,014	973	865	893	1,000	1,858	921	941	950	-1.3%	-0.6%
TSU	'000	12,825	12,906	13,490	14,304	14,932	15,155	14,355	13,644	14,863	15,858	+1.1%	+0.5%
DUC	€ (2017)	84.74	78.58	72.14	60.46	59.83	66.01	129.44	67.52	63.29	59.89		
Exchange rate	€:€				1.000								
DUC	€ (2017)	84.74	78.58	72.14	60.46	59.83	66.01	129.44	67.52	63.29	59.89		
Annual change	%		-7.3%	-8.2%	-16.2%	-1.0%	+10.3%	+96%	-47.8%	-6.3%	-5.4%	-2.4%	-3.8%

4.1.2 Summary of baseline review

DUC 2019 baseline consistent with <u>actual unit costs</u> or deviation adequately justified?	66.01 €2017	!
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The proposed adjustments relating to MUAC costs and to the DFS corporate action programme are duly justified. The proposed adjustment relating to DFS pension costs should not be considered for the baseline value. However, Germany would achieve the cost-efficiency trends without such adjustments.

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	-2.4%	✓
The DUC is planned to decrease on average by -2.4% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	-3.8%	✓
The DUC is planned to decrease on average by -3.8% between 2014 and 2024, which is better than the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (A) average (58.33 €2017)?	+13.2%	✗
The 2019 DUC level is +13.2% higher than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

The cost-efficiency targets of Germany have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

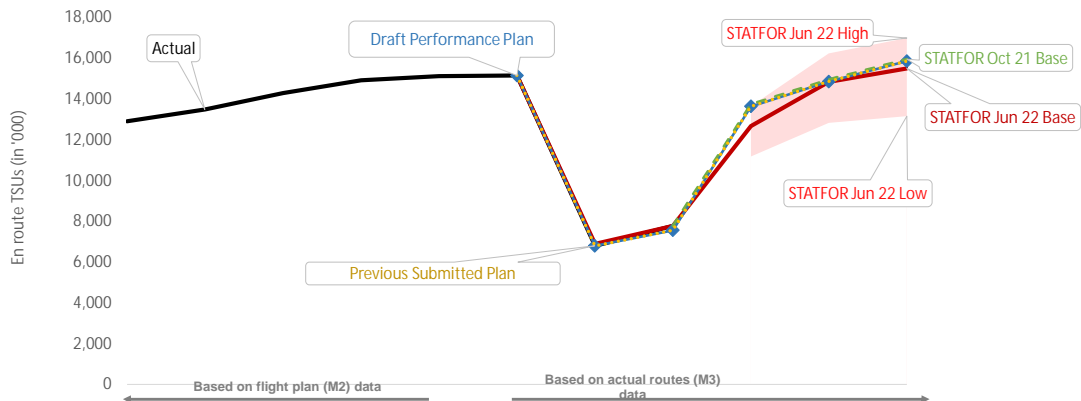
The PRB concludes that the cost-efficiency targets proposed by Germany should be approved.

- Germany is consistent with the RP3 DUC trend in terms of average reduction.
- Germany is consistent with the long-term Union-wide DUC trend.
- Germany is not consistent with the average DUC baseline of the comparator group.
- Germany presents justifications for a deviation from the cost-efficiency trends to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.
- Some elements in the adjustment of the cost baseline should not be included. However, Germany would achieve the cost-efficiency trends without such adjustments.

4.2 Review traffic forecasts and baseline

Germany - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	12,906	13,490	14,304	14,932	15,132	15,155	6,887	7,777				
Annual change	%		+4.5%	+6.0%	+4.4%	+1.3%	+1.5%	-54.6%	+12.9%				
STATFOR Jun 22 Base	'000 TSUs									12,679	14,847	15,501	+2.3%
Annual change	%									+63.0%	+17.1%	+4.4%	
STATFOR Oct 21 Base	'000 TSUs									13,742	14,961	15,956	+5.3%
Annual change	%									+76.7%	+8.9%	+6.7%	
Performance Plan	'000 TSUs						15,155	6,792	7,563	13,644	14,863	15,858	+4.6%
Annual change	%						+1.5%	-55.2%	+11.3%	+80.4%	+8.9%	+6.7%	

4.2.2 Traffic baseline review

✓	2019	'000 TSUs	CRCO 12-month coefficient	✓	2014	'000 TSUs	CRCO 12-month coefficient
	2019B (PP baseline, M3)	15,155			2014B (PP baseline)	12,825	
	2019A (as in the Reporting tables, M2)	15,132			2014A (as in the Reporting tables, M2)	12,806	
	2019B/ 2019A	0.15%	+0.15%		2014B/ 2014A	0.15%	+0.15%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 Both the 2014 and the 2019 traffic baselines are based on the actual number of service units (after adjustment for OAT traffic), adjusted to take account of the transition from M2 to M3 on the basis of the M2/M3 CRCO 12-months coefficient (+0.15%).

Review of 2014 and 2019 traffic baseline
 The adjustments made to both the 2014 and 2019 traffic baselines are made on the basis of the M2/M3 CRCO 12-months coefficient. The coefficient slightly increases the number of 2014 and 2019 traffic baselines while decreasing the DUC baselines.

4.2.3 Review of the PP traffic forecast

Review of the PP traffic forecast
 The selected TSU forecast underlying the proposed cost-efficiency targets for RP3 is in line with STATFOR October 2021 base forecast, after adjustment for OAT traffic.

4.2.4 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:
 - The en route traffic forecast of Germany is in line with STATFOR October 2021, after the adjustment for OAT traffic.
 - No major issues identified.

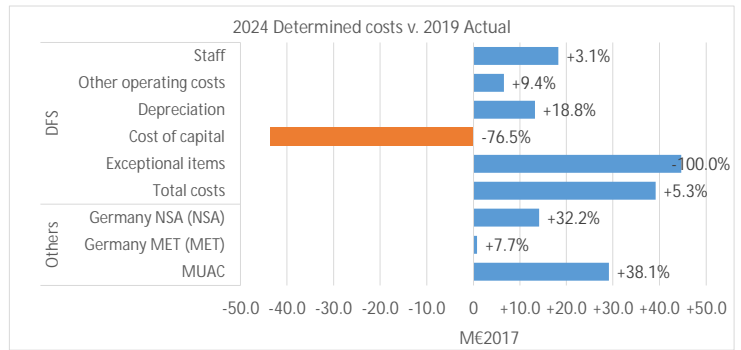
4.3.3 Review of the RP3 determined costs and incentives

Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+64.0	+7.4%

- Review of cost elements
- ✘ Investments (see details in 3.5)
 - ✔ Cost of capital (see details in 4.3.1)
 - ⓘ Pension costs (see details in 4.3.2)
 - ✔ Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



The total costs of Germany is planned to increase by +9.6% (+83.2M€2017) between 2019 actuals and planned 2024. The main contributor to this planned increase in costs is DFS (+5.3%, or +39.2M€2017 overall).

DFS (82% of Germany's en route cost base in 2024) shows in 2024 en route determined costs higher than the 2019 actual costs by +5.3%.
 - This increase is entirely due to the effects of the corporate action programme (a negative amount of -86.5M€2017 which was recorded in the exceptional items in 2019). In fact, when removing the effects of the RP2 corporate action programme, the 2024 en route determined costs for DFS would actually end below the 2019 costs (by -5.8%).
 - DFS does not charge a return on equity in the RP3 en route determined costs.

MUAC (11% of the en route cost base in 2024) shows a +38.1% cost increase between 2019 and 2024 mainly due to an increase in staff costs. The main reasons are: the indexation of remuneration, the integration of costs for tax compensation, the additional ab initio intake, and the "General Condition of Employment package" negotiated with ATCOs in 2018 aiming at providing increased capacity through increased ATCOs working time.

NSA costs (6% of the en route cost base in 2024) increase between 2019 and 2024 (+32.2%) in relation to both staff costs and Eurocontrol costs. MET costs (1% of the en route cost-base in 2024) show a +7.7% increase over RP3.

4.3.4 PRB Key Points

- No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- Germany includes corrections to the cost baselines due to DFS pension costs, MUAC adjustments, and DFS corporate action. The DFS pension adjustment should not be included in the cost baseline.
 - The costs over the period remain almost constant, despite a significant increase in MUAC costs.
 - DFS is not charging a return on equity over RP3.
 - MUAC RP3 determined costs are expected to increase due to costs not fully related to capacity provision.

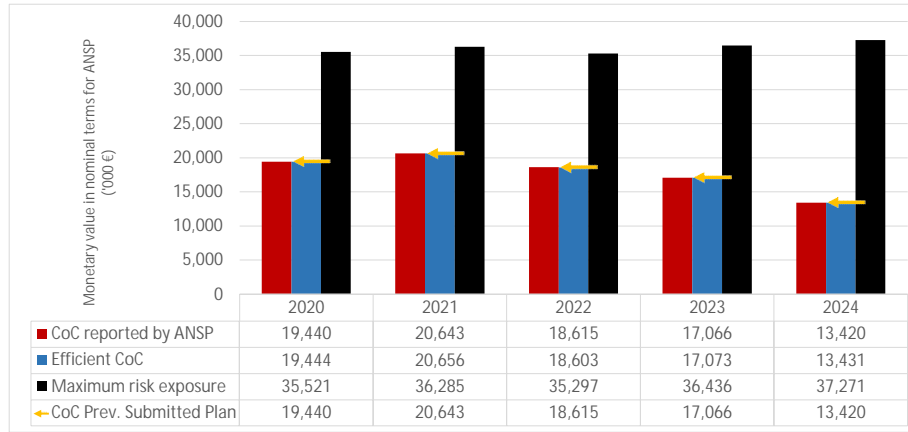
4.3.A Cost of capital

DFS - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	807,298	824,666	802,206	828,096	847,075
Monetary value of Return on Equity	0.0	0.0	0.0	0.0	0.0
Ratio RoE/DC (%)	0.0%	0.0%	0.0%	0.0%	0.0%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debts	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%
Capital structure (% debt)	67.6%	67.6%	72.7%	72.7%	61.4%	61.4%	59.4%	59.4%	49.5%	49.5%
WACC	1.0%	1.0%	1.1%	1.1%	0.9%	0.9%	0.9%	0.9%	0.7%	0.7%

Is the interest on debts in line with the market? Yes

- The interest on debts of DFS mainly results from the interest costs of the pension scheme and the general interest expense. The interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.
- In the WACC reported in the performance plan, the Ministry of Transport imposed a return on equity of 0% over RP3 in order to reduce the increase of unit rates. The efficient WACC has been calculated based on option 2.
- The embedded return on equity reported in the performance plan is 0% over RP3. The monetary value of the embedded return on equity is commensurate to the determined costs over RP3.
- Adjustments to the proposed cost of capital do not seem to be necessary over RP3.

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	497,891	494,323	507,526	523,111	539,349
Net current assets	756,299	682,012	971,389	900,812	806,343
Adjustments total assets	663,389	718,340	612,628	556,378	501,495
Total asset base	1,917,579	1,894,676	2,091,544	1,980,301	1,847,188

- The fixed asset base is planned to increase over RP3, in line with the increase in investments described in section 3.5 of this document.
- The net current assets are planned to increase until 2022 and seem excessive compared to the expected cash flow over RP3. Germany explains this increase by an increase in equity in 2021 and carry-overs.
- The adjustments to the RAB are due to outstanding receivables from the conversion of the external reporting from HGB to IFRS and outstanding receivables for the difference between the obligation and planned assets of the pension scheme.
- The total asset base will be stable over RP3.

4.3.A.5 PRB Key Points ✓

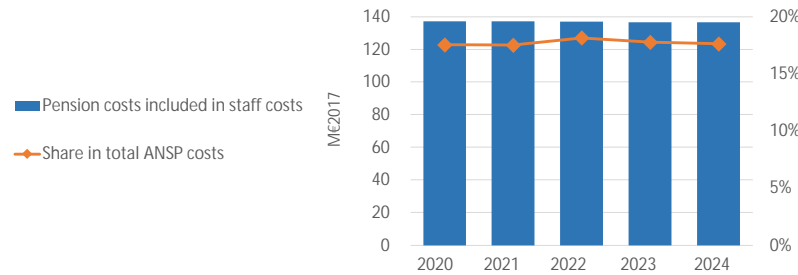
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- The cost of capital does not present major issues over RP3.
- The German Ministry of Transport imposed a return on equity of 0% over RP3 to reduce the increase of unit rates.
- The net current assets seem excessive compared to the expected cash flow over RP3.

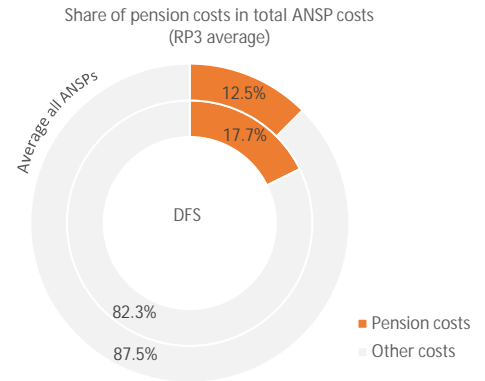
4.3.B Pensions

DFS - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



Pension costs included in staff costs	M€2017	137.1	137.1	136.9	136.5	136.6
Year on year variation	% change		+0.0%	-0.2%	-0.3%	+0.0%
Share in total ANSP costs	%	17.6%	17.5%	18.2%	17.8%	17.6%
Year on year variation	p.p.		0.0p.p.	0.6p.p.	-0.4p.p.	-0.1p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight increase**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Higher**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **Yes**

Following the change of the accounting system to IFRS, the IFRS conversion effects were spread over 15 years and reported under exceptional items up to 2021 included (some 43M€2017 per year for en route).

The pension costs included in staff costs and shown in the graph in 4.3.B.1 above relate to the defined benefit schemes only. The pension costs relating to the State pension scheme have not been identified separately in the en route reporting tables.

Additionally, the cost of capital includes some pension costs, as the asset base is adjusted to take account of the outstanding receivables from the conversion to IFRS, as well as the outstanding receivables for the difference between the obligation and planned assets of the pension scheme (plan deficit/plan surplus).

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **Yes**

The contribution rate is planned at 18.6% in 2020 to 2022 and 18.7% in 2023 to 2024, split equally between employees and employers.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **n/a**

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **No**

As reported in the performance plan, a so-called "imputed mode" is used for computing the costs of occupational pension schemes. This model aims at calculating a predictable and stable unit rate as well as a complete funding of pension.

It is based as much as possible on the IFRS standard and other IFRS norms but deviates from IFRS on the following points:

- The interest rate in the future will no longer be oriented to an abstract IFRS interest rate but rather to the prospective, expected, return on assets that can be achieved in the long term for the reserves underlying the occupational pension scheme ("imputed unit rate");
- Deviations between the assumed and actual interest rate reached are checked after each reference period. Pension obligations and plan assets are evaluated and netted with the "imputed unit rate", taking into account the conversion costs from the changeover of the external reporting from HGB to IFRS;
- Any differences are charged to the airspace users over a 15 year period in a rolling fashion. The period corresponds to the average remaining service time of DFS staff according to IFRS.

For RP3 the interest rate was lowered from 3.54% (RP2) to 2.85%, as a result of the general development of interest rates on the market, which leads to higher costs in RP3. As the pension costs were not disclosed separately during RP2, the quantification of this increase is not provided.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

Germany states that "controlling the risk is difficult. Above data has been prepared under the support of a national actuary providing an opinion on the expected interest rates on plan assets in the years 2020-2024."

Additionally, it is noted that in 2005, in order to reduce the risk associated with pension costs, DFS's employees that joined this pension scheme after 2005 receive a pension based on their average salary, rather than on their final one.

4.3.B.4 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- DFS pension costs are significantly higher than the Union-wide average.
- The pension costs identified separately in the reporting tables as pension costs only cover some costs associated with the defined benefit scheme. The costs (contributions) associated with the State pension scheme are recorded in the staff costs but not in the amounts identified separately as pension costs. In addition, costs relating to pensions are also recorded as exceptional items (up to 2021, linked to the IFRS conversion) and as cost of capital (as the asset base is adjusted to take account of the outstanding receivables from the conversion to IFRS, as well as the outstanding receivables for the difference between the obligation and planned assets of the pension scheme).

4.3.C Methodology for cost allocation between ER and TRM

Germany

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Germany did not mention changing the cost allocation with respect to RP2.
- The costs are allocated according to the cost object, type of cost by nature, and type of cost by service. The costs are divided into staff costs, other operating costs, project costs and depreciation, and then allocated to en route or terminal to the relevant cost units.
- Cost centres are the accounting object of recording credit transactions, personnel and depreciation. Costs are allocated to a specific cost centre based on the area in which they were incurred and the respective cost object in the ERP system.
- The basis is quantity driven and the actual costs of the previous year form the basis for the allocation of costs in the next year.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

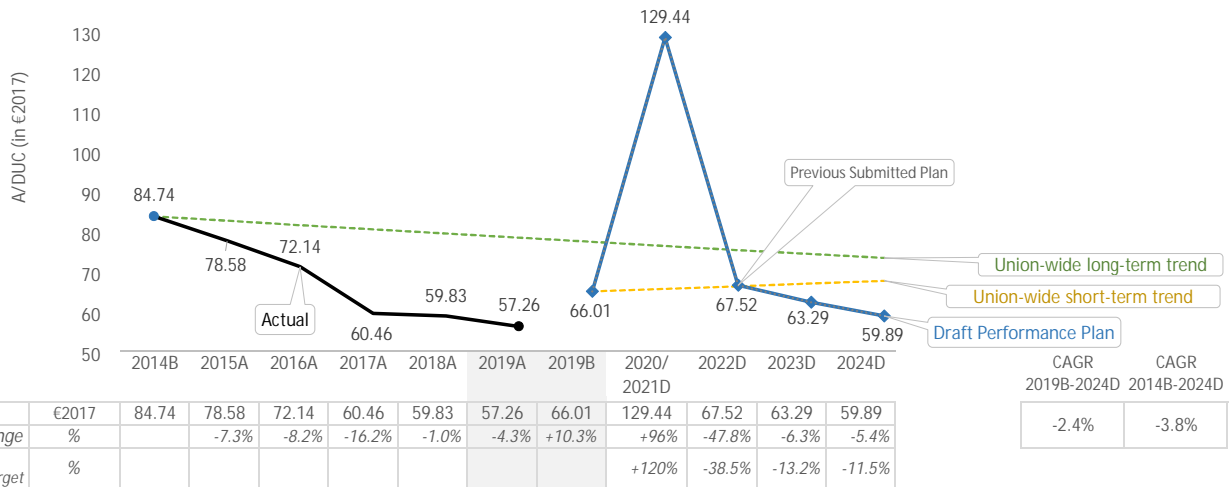


- No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- Germany did not mention changing the cost allocation methodology with respect to RP2.
 - No major issues identified.

4.4 Determined unit costs (DUC)

Germany - En route CZ

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency

✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan: -2.4%	Union-wide: +1.0%	Difference: -3.4p.p.
✓ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	Performance Plan: -3.8%	Union-wide: -1.3%	Difference: -2.5p.p.
✗ DUC level consistency	2019 baseline	Performance Plan: 66.01	Average comparator group: 58.33	Difference: +13.2%

- Germany adjusted the cost baselines, however some elements should not be included in the adjustments (4.3 of this document). Despite this, Germany would achieve the DUC trends even if not including such adjustments.
- The DUC is planned to decrease on average by -2.4% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -3.8% between 2014 and 2024, which is better than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is +13.2% higher than the average of the comparator group.
- Germany presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

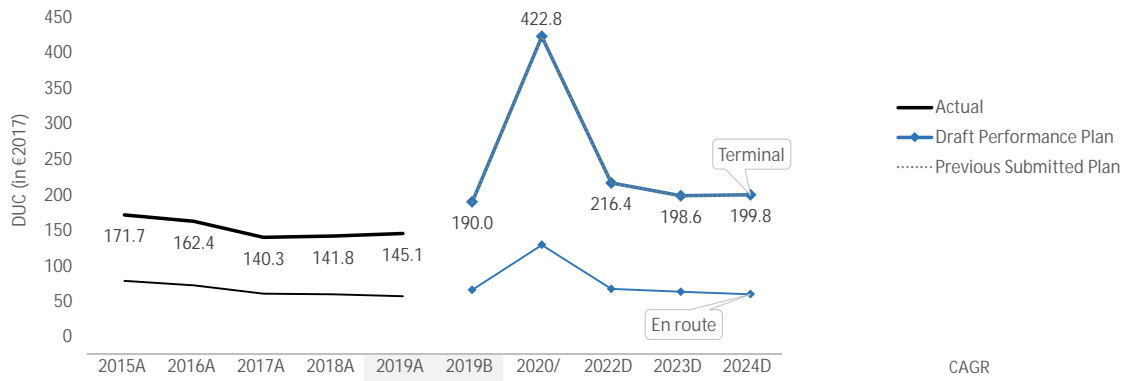
4.4.5 PRB Key Points

- No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- Germany is consistent with the RP3 DUC trend in terms of average reduction.
 - Germany is consistent with the DUC long-term Union-wide trend.
 - Germany is not consistent with the average DUC baseline of the comparator group.
 - Germany presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.5 Terminal

Germany

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	171.7	162.4	140.3	141.8	145.1	190.0	422.8	216.4	198.6	199.8	+1.3%
Annual Change	%		-5.4%	-13.6%	+1.1%	+2.3%	+33.9%	+123%	-48.8%	-8.2%	+0.6%	
DUC - En route	€2017	78.6	72.1	60.5	59.8	57.3	66.0	129.4	67.5	63.3	59.9	-2.4%
Annual Change	%		-8.2%	-16.2%	-1.0%	-4.3%	+10.3%	+96%	-47.8%	-6.3%	-5.4%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Berlin Brandenburg (formely Berlin-Frankfurt (EDDF))	GROUP III	169.1	-	-	233.8	606.1	+159.3%
Hamburg (EDDH)	GROUP III	169.1	163.7	-3.2%	233.8	320.5	+37.1%
Dusseldorf (EDDL)	GROUP III	169.1	129.8	-24.2%	233.8	255.8	+9.4%
Stuttgart (EDDS)	GROUP III	169.1	199.2	+17.8%	233.8	357.4	+52.9%
Berlin/ Tegel (EDDT)	GROUP III	169.1	130.8	-22.6%	233.8	0.0	-100.0%
Dresden (EDDC)	GROUP IV	659.2	771.2	+17.0%	807.8	1176.4	+45.6%
Muenster-Osnabrueck (EDDG)	GROUP IV	659.2	1187.7	+80.2%	807.8	1675.9	+107.4%
Leipzig-Halle (EDDP)	GROUP IV	659.2	197.3	-70.1%	807.8	225.5	-72.1%
Hanover (EDDV)	GROUP IV	659.2	325.0	-51.7%	807.8	480.8	-40.5%
Bremen (EDDW)	GROUP IV	659.2	469.0	-29.9%	807.8	768.2	-4.9%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

- The terminal charging zone of Germany includes 16 airports in RP3, two of which being in Group I.
- The DUC evolution for Germany TCZ is following a similar pattern than for en route but the traffic downturn due to the COVID-19 pandemic was more marked in terminal with a slower short-term recovery.

4.5.3 Elements subject to review

Baseline review (terminal)

Traffic

Traffic Baseline analysis	Δ '000 TSUs	%
2019B vs 2019A	0.0	+0%
2019 Traffic Baseline Adjustments	No	

Costs

Cost Baseline analysis	Δ M€2017	%		
2019B vs 2019A	67.0	+30.9%		
2019 Cost Baseline Adj.	TCZ	Entity Type	Nature	M€2017
#1 - Change in the interest rate for the DFS pension scheme	TCZ1	ANSP	Staff	+11.7
#2 - Corporate action in RP2	TCZ1	ANSP	Excep. items	+55.2

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

The 2019 cost baseline has been adjusted for DFS in respect of pension costs and the corporate action programme (as for en route).

2019 baseline analysis

The proposed terminal 2019 cost baseline contains adjustments, which represent a significant increase compared to the 2019 actual costs (+30.9%). As is the case for en route, the proposed adjustment to the DFS pension costs should not be reflected in the 2019 cost baseline, whereas the adjustment relating to the DFS corporate action in RP2 should be reflected in the cost baseline for 2019.

Traffic forecasts (terminal)

Review of the PP traffic forecast

The selected forecast underlying the proposed cost-efficiency targets for RP3 is in line with STATFOR October 2021 base forecast, as is the case for the en route forecast.

Determined costs (terminal)

Review of 2020/2021 determined costs
 2020 determined vs actual
 2021 determined vs actual

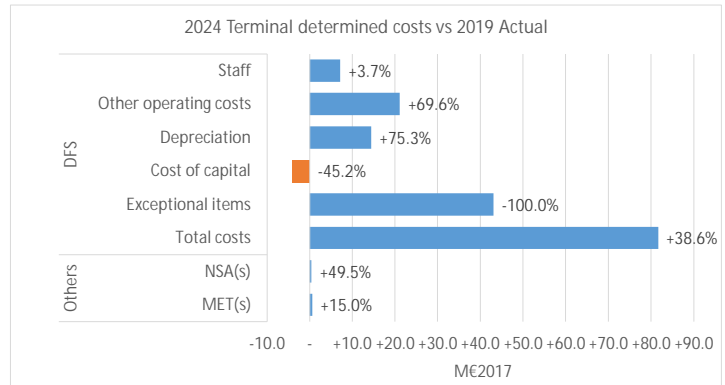
M€2017	%
+0.0	+0.0%
+10.4	+3.8%

Cost elements - DFS (terminal)

- ✘ Investments (see details in 3.5)
- ⓘ Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ⓘ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	1.00%
Additional incentives?	No



- The share of terminal investment costs (28%) is higher than the share of terminal total costs (23%).
- The terminal WACC and its parameters slightly differ from the ones for en route. Moreover, the capital structure appears to be different between en route and terminal even though the entity providing the services is the same. However, also for terminal no return on equity is planned for RP3.
- When removing the effects of the DFS corporate management programme in 2019, the 2024 determined costs for the terminal charging zone would be +10.1% higher than the actual amounts recorded for 2019. This is mainly due to increases in other operating costs, first in 2020 (by +37.6%) for which explanations are not provided in the performance plan, and further in 2023 and 2024, due to the implementation costs of the drone detection system project.
- Terminal service units are forecast to reach 2019 levels only in 2024, while terminal costs are already reaching the actual 2019 level in 2020.

4.5.4 PRB Key Points ✘

No changes since the previous FABEC draft RP3 performance plan submitted in November 2021:

- The terminal RP3 DUC trend is +1.3%, which is worse than the en route RP3 DUC trend of -2.4%.
- The terminal RP3 DUC trend is +1.3%, which is worse than the terminal RP2 DUC trend of -4.1%.
- Frankfurt and Munich, the main airports, had a DUC lower than the median of their comparator group over RP2 (-45.6% and -40.6%). The difference is expected to be -27.1% and +1.4% over RP3. Erfurt and Saarbruecken airports will have a DUC significantly higher than the average of their comparator groups over RP3.
- Germany used the STATFOR October 2021 base forecast for terminal traffic, as for en route.

PRB Assessment

LUXEMBOURG

Draft Performance Plan

Context and scope

Luxembourg

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6125, F6126, F6129, F6127, F5859, F6128, F5781, F5783, F5784, F5822, F5823, F5826, F6130

Relative weight compared to the SES area (2019):

% Flight-hours vs SES n/a
 % Serv. Units vs SES n/a
 % Costs vs SES n/a

Scope

FAB: FABEC

ANSPs: ANA LUX
 MUAC

Other entities (as per Article 1(2) last para. of Regulation 2019/317): Luxembourg Civil Aviation Authority
 Eurocontrol

ATM, MET
 ATM

Competent authority
 NM, CRCO

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)		n/a	n/a	n/a	n/a	<p>TRM 100 % ER 0 %</p>
Terminal (TRM)	Luxembourg - TCZ	1	No	No	Yes	
Changes in the CZs from RP2		Yes	Luxembourg changed some of the allocation keys (see details in section 4.3.C of this document).			

Comparator group: n/a Other States in the comparator group: n/a

Currency: € Exchange rate: 1.00000

1. Safety ✓

Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
ANA Lux	Safety policy and objectives	B	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	B	C	C	C	C
	Safety culture	B	B	C	C	C

Previous submitted PP

ANA Lux	Safety policy and objectives	B	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	B	B	B	C	C
	Safety promotion	B	C	C	C	C
	Safety culture	B	B	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Luxembourg should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- However, some relevant measures are insufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment n/a3. Capacity ✓

Capacity PP targets

	2020	2021	2022	2023	2024
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.12	0.12	0.05	0.05	0.05
Previous submitted PP (terminal)	0.12	0.12	0.05	0.05	0.05

PRB assessment

The PRB concludes that the capacity targets proposed by Luxembourg should be approved.

- The incentive scheme defined by the performance plan does not have a material impact on the revenue at risk.

4. Cost-efficiency n/a

5. PRB recommendations

SAFETY

- Luxembourg should provide specific ANSP derived measures to demonstrate how ANSP will improve in all five management objectives over RP3.

CAPACITY

- Luxembourg should revise the incentive scheme so that it has a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

SAFETY

- Luxembourg should provide specific ANSP derived measures to demonstrate how ANSP will improve in all five management objectives over RP3.

CAPACITY

- Luxembourg should revise the incentive scheme so that it has a material impact on the revenues.

LUXEMBOURG

Safety KPA

1.1 Summary of safety key data and assessment results

Luxembourg

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2023.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered relevant but insufficient to improve and further ensure the required safety levels over RP3. Specific ANSP derived measures should be described demonstrating how the ANSP will improve in all five management objectives over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA level. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

The change management practices are defined and supported by the NSA. Considering the level of details provided in the performance plan, these practices, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Luxembourg should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- However, some relevant measures are insufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.
- Luxembourg should provide specific ANSP derived measures to demonstrate how ANSP will improve in all five management objectives over RP3.

1.2 Targets for EoSM for ANSPs and Measures

Luxembourg

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
ANA	Safety policy and objectives	B	B	B	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	C	C	C	C	D	D	✓	
	Safety assurance	B	B	B	B	B	C	C	✓	
	Safety promotion	B	B	B	C	C	C	C	✓	
	Safety culture	B	B	B	B	C	C	C	✓	

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2023. Luxembourg has to improve all five management objectives over RP3.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA and the FABEC.

At ANSP level, the measures are implemented in the following areas:

- Safety culture - Development of a Positive and Proactive Organisational Cultures;
- Safety policy and objectives - Coordination Emergency Response Plan; and
- Safety risk management - Risk assessment process and mitigations.

At the level of the Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373, applicable to EoSM improvements, are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

Considering the current safety levels, the ANSP measures are considered relevant but insufficient to improve and further ensure the required safety levels over RP3.

Specific ANSP derived measures should be described demonstrating how the ANSP will improve in all five management objectives over RP3.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment).

Indicators, issues, and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

ANA Lux's change management practice is fully integrated into Project Management System and driven by a number of safety, environment, capacity, and cost-efficiency indicators.

Change management process considers the impact of the change on the operational systems, airspace users and partner organizations.

Moreover, the process is regularly reviewed in a proactive manner by NSA.

LUXEMBOURG

Capacity KPA

3.1 Summary of capacity key data and assessment results

Luxembourg

3.1.1	En route ATFM delay	n/a
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3.1.2	Arrival ATFM Delay	
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Luxembourg is the only airport included in the performance plan. National targets are set lower than in RP2, and also represent an improvement compared to the average past performance in RP2.

The performance of Luxembourg airport is expected to be slightly worse than that of the group of similar airports, despite the planned improvements in the targets. The performance plan includes capacity enhancement measures targeted at airport capacity.

3.1.3	Incentives	
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En route: not applicable

Terminal:

Luxembourg has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is past performance and the indicated pivot values are equal to the all-cause national targets.

The maximum penalty and bonus is set at 0.25%. The performance plan claims that the ANSP will waive any bonuses resulting from the incentive scheme as long as the amount of service units recovers to 2019 levels at the airport.


The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.1.4	Investments	
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For en route capacity related information, please see the factbook of Belgium.

No investments are linked to PCP/CP1 ATM Functionalities.

Other investments related to communications, navigation, and surveillance infrastructure contribute to resilience, scalability, and flexibility.

3.1.5	PRB conclusions	
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The PRB concludes that the capacity targets proposed by Luxembourg should be approved.

- The incentive scheme defined by the performance plan does not have a material impact on the revenue at risk.

- Luxembourg should revise the incentive scheme so that it has a material impact on the revenues.

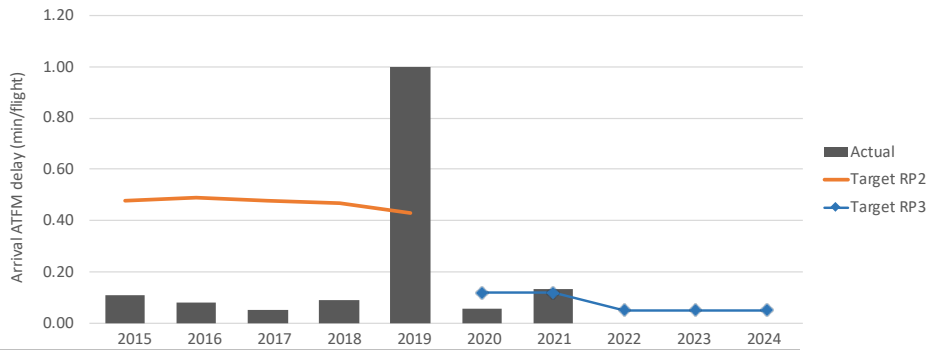
3.2 En route ATFM delay per flight (not applicable)

Luxembourg - ANA LUX

3.3. Arrival ATFM delay per flight

Luxembourg

3.3.1 Overview of arrival ATFM delay per flight



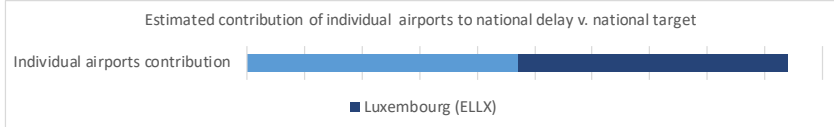
	Target (RP2/RP3)	
	Actual	Target
National level	0.11	0.07
Luxembourg (ELLX)	0.11	0.07

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

The proposed target for Luxembourg during 2022-2024 is constant and equal to 0.05 minutes per arrival, which is lower than the observed past delays during RP2 (0.28 minutes per arrival in average, driven by much higher delays in 2019). The terminal traffic forecast uses the STATFOR October 2021 base forecast that estimates a CAGR for 2019-2024 of 0.2%. Improvement in the layout at the airport, the taxi plan and follow-me services, together with APP director position with new associated sector, are the measures that will be contributing to the national targets and European performance.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Luxembourg (ELLX)	0.07
National Target	0.07



As Luxembourg is the only airport included in the performance plan, the national target coincides with the airport target and the potential delay contribution is only associated to this airport.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Luxembourg (ELLX)	GROUP IV	0.00	0.28	+0.28	0.07	+0.21

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The performance of Luxembourg in the past reference period was 0.28 minutes per arrival worse than the median of similar airports which was zero. The target set for RP3 represents a significant improvement although still slightly worse performance than the observed during RP2 at similar airports.

3.3.5 PRB Key Points

- Luxembourg is the only airport included in the performance plan. National targets are set lower than in RP2 and also represent an improvement compared to the average past performance in RP2.
- The performance of Luxembourg airport is expected to be slightly worse than that of the group of similar airports, despite the planned improvements in the targets.
- The performance plan includes capacity enhancement measures targeted at airport capacity.

3.4 Capacity Incentive schemes

Luxembourg

3.4.1 En route capacity incentive scheme n/a

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±30.0%	0.250%	0.250%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.025	±0.025	±0.025
Performance Plan targets			0.05	0.05	0.05
Pivot values for RP3			0.05	0.05	0.05

Threshold and pivot value review

The terminal incentive scheme includes a dead band of ±30% that allows for small variations in the arrival ATFM delay with no resulting bonuses or penalties. The pivot value is modulated to cover only CRSTMP causes but is equal to the national target and represents no improvement with respect to observed performance in all RP2 years except 2019, when delays were higher.

Modulation review

Luxembourg has chosen to modulate the pivot values according to CRSTMP causes. The performance plan mentions that the chosen pivot value (0.05 minutes per arrival) has been calculated to be as close to present values as possible taking into account the evolution of the airport during RP3. Nevertheless, this modulated pivot value coincides with the national targets, which means that 100% of the delays would be attributable to CRSTMP reasons when the actual CRSTMP share observed during RP2 was 19.7%. According to the past share and the national targets, these CRSTMP pivot values would be 0.06 minutes per arrival, which were the reported CRSTMP delays in the period 2015-2019.

Review of financial advantages/disadvantages

The terminal incentive scheme is symmetric. The low level of bonus / penalty (only 0.25%), together with the low risk of not meeting the pivot value, do not seem to incentivise to improve or maintain the current performance.

Luxembourg states in the FABEC performance plan that during the COVID-19 crisis (as long as traffic in terms of service units stay below the level of 2019) ANA Lux will waive any bonus which would result from the application of the incentive scheme.

3.4.3 Additional capacity incentive schemes n/a

3.4.4 PRB Key Points ⚠

En route: not applicable

Terminal:

- Luxembourg has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is past performance, and the indicated pivot values are equal to the all-cause national targets.
- The maximum penalty and bonus is set at 0.25%. The performance plan claims that the ANSP will waive any bonuses resulting from the incentive scheme as long as the amount of service units recovers to 2019 levels at the airport.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.5 Investments

Luxembourg - ANA Lux

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	2.1	2.4	2.7	2.7	2.8	12.7
	En route	0.6	0.7	0.8	0.8	0.8	3.8
	Terminal	1.5	1.7	1.9	1.9	2.0	8.9

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	Radar / SUR: A-SMGCS Level 2 and updates	A-SMGCS Level 1 (monitoring) is already installed and operational on ELLX. Level 2 installation ensures the tracking and monitoring of aircraft and transponder equipped vehicles on the airport as a safety tool.	1.1	No	Yes	0.4	
2	Communication systems: VCS/VCR, emergency radio; ADD and AMHS	Installation of a new voice communication system (HW replacement, 8.33 kHz capable) and voice recording system for ATC. Upgrade of emergency radio to a telephone based system, replacement of ATC Data Display (ADD) and ATC Message Handling System (upgrade) for SUR, Flight Data, weather(current & forecast) as an important safety tool.	2.5	No	No	0.2	
3	Navigation systems: ILS/DME24	Implementation of a new Instrument Landing System (ILS) and distance metering equipment (DME) at RW24	0.5	No	No	0.2	
4	Aeronautical Systems: AIS/AIM, eTOD and MET	Implementation of modern AIM / AIS aeronautical, digital production and management systems including digital NOTAM in line with future requirements. Installation of electronic terrain and obstacle data (eTOD) and data management system for all areas as required;	3.4	No	No	0.1	
5	Radar / SUR: Surveillance chain evolution	ATC requested for a surveillance chain evolution in order to handle Mode S conspicuity code assignment (APP), make use the tool allowing flexible use of airspace (APP), go additional CWP customization (APP & TWR), enable Director sector for 3rd APP position (APP), to enable P BN management by FDP, enable TWR sector giving TWR the opportunity to request dedicated changes specially in VFR handling (TWR) and enable dedicated layout for DCL HMI at TWR (technically DCL is installed and ready to be used)	1.3	No	No	0.0	
6	Navigation systems: DVOR/DME DIK	Renewing of DVOR/DME DIK (used for enroute)	0.6	No	No	0.0	
Total:						0.9	

Airspace user feedback regarding major investments

In 2022, airspace users were concerned about the cancellation of some investments and the consequent impact on quality of the service. ANA Lux noted that after further assessment they were no longer considered as optimal solution.

Review of investments

Luxembourg did not plan any new major investments as per the Regulation (value of the asset > 5M€). However, Luxembourg detailed the largest investments in the format of new major investments.

Luxembourg does not provide a breakdown of the cost allocation of the investments between en route and terminal in the performance plan.

New major investments represent 7% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 5% higher than the planned and the amount overspent was 0.9M€. In terms of depreciation and cost of capital, the actual costs of investments were 0.4M€ higher than determined.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Radar / SUR: A-SMGCS Level 2 and updates	None	Safety, Capacity	Use of A-SMGCS as a ground movement control system (Acft / vehicles) for safe airport OPS. Consultation and user support ensured.
2	Communication systems: VCS/VCR, emergency radio; ADD and AMHS	None	Safety	Continuity of voice communication service through a reliable system. The implementation of a voice recording system in ATC is a requirement (AET and DAC recommendation). TWR ADD replacement and upgrade to display relevant ATC info. User consultation planned during local AUC meeting.
3	Navigation systems: ILS/DME24	None	Safety, Cost-efficiency	Continuity of service and through replacement of existing systems after life-cycle. User consultation planned during local AUC meeting.
4	Aeronautical Systems: AIS/AIM, eTOD and MET	None	None	Availability of flight safety relevant terrain & obstacle data to ensure obstacle clearance in LU airspace and aerodrome. Digital aeronautical data handling.
5	Radar / SUR: Surveillance chain evolution	None	None	It has been presented to the users, but as the investments are carried by the state as it was done in the past, there was no reaction from the side of the users.
6	Navigation systems: DVOR/DME DIK	None	Safety	It has been presented to the users, but as the investments are carried by the state as it was done in the past, there was no reaction from the side of the users.

Additional information

Radar/SUR: A-SMGCS Level 2 and updates: New ATM system for ground surveillance and control. ATM Master Plan links: ESSIP: ESSIP AOP04.1, AOP04.2 (A-SMGCS); ENV01, ATM Masterplan.

Communication systems: VCS/VCR, emergency radio; ADD and AMHS: ATM system for basic VCS, data display and flight data and message handling. Replacement of VCS and installation of a new VCR, replacement of ADD and overhaul of AMHS. Basic VCS system compliant with ESSIP ITY-AGVCS objective for air-ground communication; availability of a stable emergency VCS; and ATC information (compliance with ICAO standards and EUROCONTROL recommendations).

Navigation systems: ILS/DME24: ATM system for basic navigation and landing system. Availability of navigation systems for all aircraft type.

Aeronautical Systems: AIS/AIM, eTOD and MET: ATM system for basic aeronautical data and information for ANS. Implementation of new digitalised AIS/AIM management and work-flow management and NOTAM system. Implementation of new eTOD management system. Replacement of RWY Visual Range (RVR) sensors for MET. ESSIP: INF07 (eTOD) and ITY-ADQ (Aeronautical Data Quality) compliance; compliance with ICAO requirements. Initial implementation steps in line with SESAR ATM MP to create a SWIM enabled aeronautical environment.

Radar/SUR: Surveillance chain evolution: ATM system for basic surveillance and control. Overhaul of existing system and implementation of additional functionalities of the actual surveillance chain. ATC02.8 ITY-SPI, ITY-ACID, ATC02.9.

Navigation systems: DVOR/DME DIK, DVOR/DME LUX: ATM system for basic navigation for approach and en route. MON PBN Transition 3.7.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	16.8	6.1	0.1	0.3	0.3	0.4	0.5	1.5
Existing investments			1.9	2.0	2.2	2.1	2.0	10.2

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls? ✓

En route delay is not applicable to Luxembourg.

A-SMGCS Level 2 implementation may yield capacity benefits at Luxembourg airport. Several investments are being made to improve and upgrade the communication, navigation, and surveillance infrastructure contributing to resilience, scalability, and flexibility at the TMA/airport level.

No investments are linked to PCP/CP1 ATM Functionalities, although A-SMGCS Level 2 investment could possibly be linked to AF2.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP? ✓

A-SMGCS Level 2 implementation is expected to improve airport throughput under low visibility conditions.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? n/a

Not applicable.

3.5.4 PRB Key Points

- For en route capacity related information, please see the factbook of Belgium.
- No investments are linked to PCP/CP1 ATM Functionalities.
- Other investments related to communications, navigation, and surveillance infrastructure contribute to resilience, scalability, and flexibility.

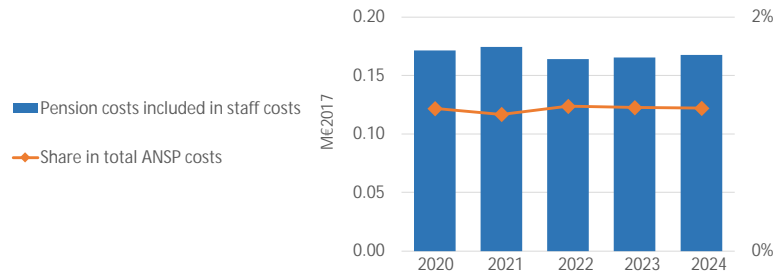
LUXEMBOURG

Cost-efficiency KPA

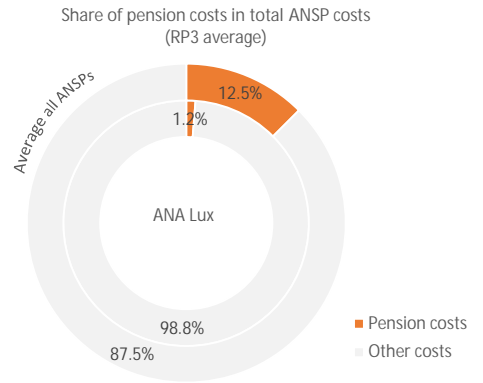
4.3.B Pensions

ANA Lux - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	ME2017	2020	2021	2022	2023	2024
Pension costs included in staff costs		0.2	0.2	0.2	0.2	0.2
Year on year variation	% change		+1.7%	-5.9%	+0.8%	+1.4%
Share in total ANSP costs	%	1.2%	1.2%	1.2%	1.2%	1.2%
Year on year variation	p.p.		-0.1p.p.	0.1p.p.	0.0p.p.	0.0p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Stable**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **n/a**

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

The pension costs depend on the status of the staff. There are two categories "public servant" and "salaried employees". For a "public servant" there is no employer's contribution, whereas for a "salaried employee", the employer's contribution is 8%.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **n/a**

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **n/a**

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

No actions have been reported in the performance plan. ANA Lux indicates that regarding the employer's contribution there are no changes expected in RP3.

4.3.B.4 PRB Key Points

- No major issues identified.



4.3.C Methodology for cost allocation between ER and TRM

Luxembourg

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Luxembourg changed some of the allocation keys, however the methodology and criteria remain similar to RP2. The changes in allocation keys are based on the actual allocation applicable for RP2 and reflect changes in the services provided and cost centres.
- Within the controlled airspace of Luxembourg, a limit of 20km around ELLX airport has been considered, in order to split the costs between en route and terminal services provided. Regarding the arrivals, the transfers of the aircrafts are performed from approximately 60NM inbound of Luxembourg airport.
- For the departing flights, transfers from TWR to APP are performed just after the aircraft is airborne according to the Standard Instrument Departure (SID). The "APP ATCO's" ensure the climbing and the separation of traffic before handing over to the neighbouring "ACCs".
- In addition to these climbing and descending flights, the approach controls a considerable number of overflights above the Luxembourg territory and inside the area of responsibility of ANA Lux.
- For the "APP ATCO's", services provided outside of the 20km cylinder represent an important part of their workload.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

Yes

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

Luxembourg changed some of the allocation keys. The revised allocation keys are based on the actual allocation keys applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded from the cost base of ANSP services and therefore not charged to the airspace users.

2.2. Are these changes in cost allocation duly described and justified?

Partially

If, not what are the identified issues?

The performance plan indicates that the changes of allocation keys impact several cost categories: staff costs, other operating costs, depreciation, and cost of capital. However, the justification provided for each cost category is the same.

2.3. Is there an impact on the determined costs and/or baseline?

Yes

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

The changes in the allocation keys result in an increase of +0.7M€2017 of the terminal 2019 baseline costs. However, there is an inconsistency with the Belgium-Luxembourg en route cost baseline which also increases by +0.1M€2017.

4.3.C.3 PRB Key Points

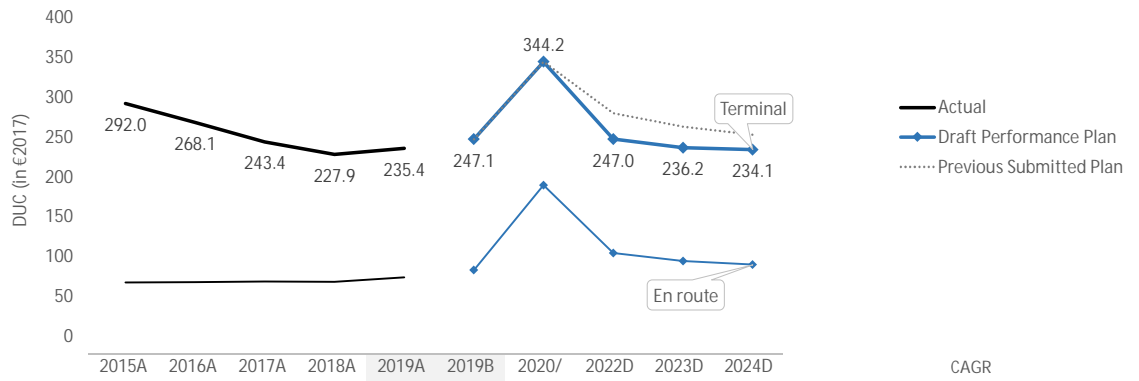


- Luxembourg changed some of the allocation keys.
- The changes in the allocation keys result in an increase of +0.7M€2017 of the terminal 2019 baseline costs. However, there is an inconsistency with the Belgium-Luxembourg en route cost baseline, which also increases by +0.1M€2017.

4.5 Terminal

Luxembourg

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	292.0	268.1	243.4	227.9	235.4	247.1	344.2	247.0	236.2	234.1	-1.3%
Annual Change	%		-8.2%	-9.2%	-6.4%	+3.3%	+8.4%	+39%	-28.2%	-4.4%	-0.9%	
DUC - En route*	€2017	67.6	67.8	68.8	68.1	73.9	83.3	189.5	104.5	94.2	89.9	+1.9%
Annual Change	%		+0.2%	+1.5%	-1.0%	+8.6%	+22.3%	+128%	-44.9%	-9.8%	-4.6%	

* Luxembourg is included in Belgium-Luxembourg en route charging zone

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Luxembourg (ELLX)	GROUP IV	659.2	252.4	-61.7%	807.8	263.2	-67.4%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The average unit cost for Luxembourg (ELLX) was significantly lower than the median of its comparator group during RP2 (-61.7%) and the difference with respect to the median of the comparator group stays even lower during RP3 (-67.4%).

4.5.3 Elements subject to review

Baseline review (terminal)

Traffic

Traffic Baseline analysis		Δ '000 TSUs	%
2019B vs 2019A	TCZ1	0.0	+0%
2019 Traffic Baseline Adjustments	TCZ1	No	

Costs

Cost Baseline analysis		Δ M€2017	%	
2019B vs 2019A	TCZ1	0.65	+4.9%	
2019 Cost Baseline Adj.	TCZ	Entity Type	Nature	M€2017
#1 - Change of allocation keys - effect on staff costs	TCZ1	ANSP	Staff	+0.68
#2 - Change of allocation keys - effect on other operating costs	TCZ1	ANSP	Other ops.	+0.00
#3 - Change of allocation keys - effect on depreciation costs	TCZ1	ANSP	Depreciation	-0.02
#4 - Change of allocation keys - effect on cost of capital	TCZ1	ANSP	Cost of cap.	-0.01

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

The 2019 cost baseline has been adjusted for ANA Lux due to a change in the allocation keys. The new ones "are based on the actual allocation keys, applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded of the cost base for ANSP services and therefore not charged to the users".

2019 baseline analysis

The changes in the allocation keys result in an increase of +0.7M€2017 of the terminal 2019 baseline costs. However, there is an inconsistency with the Belgium-Luxembourg en route cost baseline which increases by +0.1M€2017.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

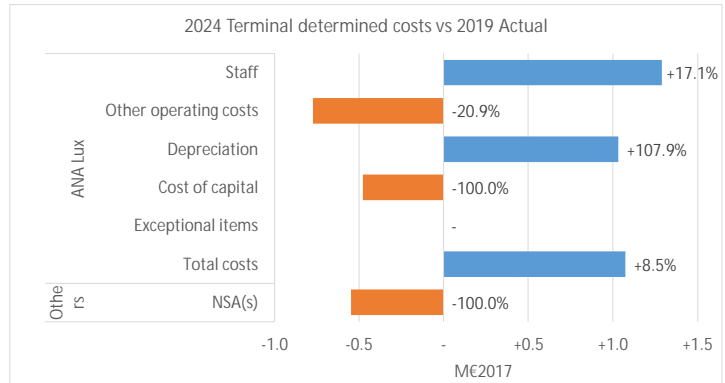
Review of the PP traffic forecast

The terminal traffic forecast presented in the performance plan is in line with the STATFOR June 2022 base scenario.

Determined costs (terminal)

Is inflation in PP in line with IMF (April 2022 forecast)? Yes

Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	-0.0	-0.0%
2021 determined vs actual	+1.3	+9.5%



Cost elements - ANA Lux (terminal)

- Investments (see details in 3.5)
- Cost of capital
- Interest on loans
- RoE
- WACC
- Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.25%
Maximum penalty (% of determined costs)	0.25%
Additional incentives?	No

- Terminal WACC and its parameters are equivalent to the ones reported in the en route Belgium-Luxembourg charging zone for ANA Lux.
- The terminal DUC trend over RP3 planned for Luxembourg TCZ (-1.3% p.a.) is lower than the one planned for en route Belgium-Luxembourg CZ (+1.9% p.a.).
- For ANA Lux, total costs in 2024 are planned to be above the 2019 actuals (+8.5%, or +1.1M€2017). The main drivers are the staff costs which are +17.1% (+1.3M€2017) higher in 2024 and the depreciation costs (+107.9%, or +1.0M€2017).
- The additional information to the reporting tables provides justifications for the staff costs increase: indexation according to Luxembourg State principles (career shifts, mobile scale); and additional staff in ATC: third position in TWR and APP, anticipation of retirements of ATCOs (to increase capacity); while on the other side, the additional staff in AIS and CNS initially agreed upon for RP3, due to the pandemic, has been renounced to ANA Lux.
- Regarding the depreciation costs, these are justified by: (i) the historical cost accounting method is used with a linear depreciation, (ii) significant amount of ongoing projects to be operational during RP3 (>13M€2017), and (iii) new investment/projects amounting to 27M€2017 planned for RP3. "Depreciation will continue to be carried by the State of Luxembourg throughout RP3. These costs are excluded of the chargeable unit rate via the "other revenues – national public funding" section."
- Overall, the revised determined costs have been revised downwards compared to the performance plan submitted in November 2021 (-5.7M€2017, or -12.3% in total for the 3-year period 2022-2024) while the forecast TNSUs have been revised downwards by -2.3%.

4.5.4 PRB Key Points

- The terminal RP3 DUC trend is -1.3%, which is better than the en route RP3 DUC trend of +1.9%. The en route charging zone mentioned in this analysis is the Belgium-Luxembourg en route charging zone.
- The terminal RP3 DUC trend is -1.3%, which is worse than the terminal RP2 DUC trend of -5.2%.
- Luxembourg, the only airport included in the performance plan, had a DUC -61.7% lower than the average of its comparator group over RP2. The difference is expected to be -67.4% over RP3.
- Luxembourg, the only airport included in the performance plan, had a DUC -62.9% lower than the average of its comparator group over RP2. The difference is expected to be -71.7% over RP3.
- Luxembourg used the June 2022 base forecast for terminal traffic.
- Terminal costs increase over the period, mainly due to an increase in staff costs of ANA Lux.

PRB Assessment

MUAC

Draft Performance Plan

Context and scope

MUAC

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6125, F6126, F6129, F6127, F5859, F5820, F5821, F5822, F5823, F5824, F5825, F5826, F5827, F5828, F5829, F6130, F5748, F5749, F5750, F5751, F5752, F5753, F5754, F5755, F5756, F5757, F5758, F5759, F5760, F5761, F5762, F5742, F5743, F5744, F5745, F5746, F5747

Relative weight compared to the SES area (2019):

% Flight-hours vs SES n/a
 % Serv. Units vs SES n/a
 % Costs vs SES n/a

Scope

FAB: FABEC

ANSPs: MUAC

Other entities (as per Article 1(2) last para. of Regulation 2019/317): -

ATM

-

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges
En route (ER)	n/a	n/a	n/a	n/a	n/a
Terminal (TRM)	n/a	n/a	n/a	n/a	n/a

Comparator group: n/a Other States in the comparator group: n/a

Currency: € Exchange rate: 1.00000

1. Safety ✓

Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
MUAC	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

MUAC	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by MUAC should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment n/a3. Capacity ✓

Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.95	0.13	0.19	0.19	0.19
National target for terminal and airport ANS ATFM arrival delay per flight (min)	n/a	n/a	n/a	n/a	n/a
Previous submitted PP (en route)	0.95	0.13	0.19	0.19	0.19
Previous submitted PP (terminal)	n/a	n/a	n/a	n/a	n/a

PRB assessment

The PRB concludes, that the capacity breakdown values proposed by MUAC should be approved.

- The incentive scheme defined in the draft performance plan does not have a material impact on the revenue at risk.

4. Cost-efficiency n/a

5. PRB recommendations

CAPACITY

- MUAC should revise the incentive scheme so that it has a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

CAPACITY

- MUAC should align capacity profile plans, capacity enhancement measures and proposed capacity breakdown values.
- MUAC should revise the incentive scheme so that it has a material impact on the revenues.

MUAC

Safety KPA

1.1 Summary of safety key data and assessment results

EUROCONTROL

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets are set in accordance with the RP3 Union-wide safety targets. MUAC attained the target levels for all five safety management objectives in 2020.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered relevant and sufficient to maintain the required safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA levels. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

The change management practices are defined by MUAC. Considering the level of details provided in the performance plan, these practices, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by MUAC should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
MUAC	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	D	D	D	D	D	D	D	✓	
	Safety assurance	C	C	C	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels are set in accordance with the RP3 Union-wide safety targets. MUAC attained the target levels for all five safety management objectives in 2020.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA, and the FABEC.

At ANSP level, the following measures are planned to be implemented:

- Improving traceability between safety requirements;
- Creating an overall MUAC dashboard to steer the KPIs, including the safety aspect; and
- Providing input to the FABEC working groups (SRAP and SPM).

At the level of the Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373, applicable to EoSM improvements are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

Considering the current safety levels, the measures are considered relevant and sufficient to maintain the required safety levels over RP3.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment).

Indicators, issues and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

The change management procedure, applied by MUAC, is tailored depending on size, risk and/or exposure of the change into the ATM functional system. In case that a change would risk a negative impact on the network, the aim is to minimise the impact on Network Performance.

The procedure described, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

MUAC

Capacity KPA

3.1 Summary of capacity key data and assessment results

MUAC

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values. The breakdown value for 2022 is slightly higher than the delay forecast based on the high scenario. Breakdown values fall within the range of the delay forecast in 2023 and 2024.

The capacity plans indicate that MUAC will have a reasonable capacity surplus in the remaining years of RP3.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

n/a

3.1.3 Incentives

En route:

MUAC has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the ANSP level incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.1.4 Investments

Two investments from RP2 will continue throughout RP3.

The actual CAPEX for RP2 was 36% of the planned value and the amount underspent was 49.6M€. In terms of depreciation and cost of capital, the airspace users have financed 9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

There is a capacity surplus expected in Maastricht UAC in the remaining years of RP3.

There are no capacity enhancing investments planned for RP3 linked to PCP/CP1 ATM Functionalities, only investments possibly directly contributing to capacity will not be implemented until 2029.

Investments contribute to resilience, scalability, and flexibility in line with the European ATM evolution.

3.1.5 PRB conclusions



The PRB concludes that the capacity breakdown values proposed by MUAC should be approved.

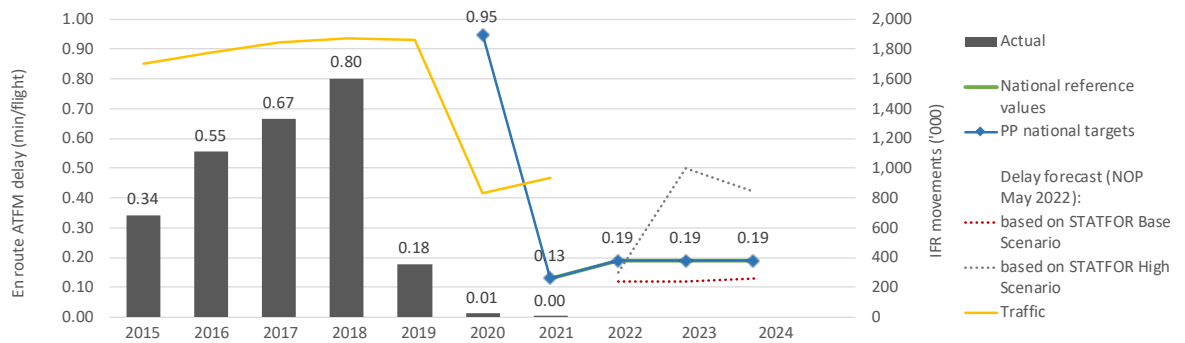
- The incentive scheme defined in the draft performance plan does not have a material impact on the revenue at risk.

- MUAC should revise the incentive scheme so that it has a material impact on the revenues.

3.2 En route ATFM delay per flight

MUAC - MUAC

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+2%	+4.6%	+3.9%	+1.3%	-0.5%	-55.3%	+12.4%					
Actual delay/flight	0.34	0.55	0.67	0.80	0.18	0.01	0.00					
National reference values						n/a	0.13	0.19	0.19	0.19		
PP national targets						0.95	0.13	0.19	0.19	0.19		
Delay forecast*:												
Based on STATFOR High Scenario								-	0.15	0.50	0.42	
Based on STATFOR Base Scenario									-	0.12	0.12	0.13

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✔	✔	✔

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✔

Assessment of capacity enhancement measures and review against NOP

During RP2, MUAC experienced capacity constraints related mainly to staffing, ATM capacity and weather. MUAC missed the capacity targets throughout RP2 before significantly improving performance in 2019.

The performance plan contains the following capacity enhancement measures, which are in line with the NOP:

- Training of new staff and cross-training additional controllers,
- Scrutinising the use of operational staff in developments,
- A new agreement with the social partners for mitigating measures ,
- A study on reducing the number of sectors during the night, and
- A set of airspace management related initiatives.

The NM has proposed some additional measures, which have not been included in the performance plan. The measures are however managed on a network level by the NM or within FABEC and include:

- FABEC airspace restructuring,
- Network weather mitigation measures, and
- Operational excellence.

The planned number of ATCO FTEs show a grow of 3% on average annually with the highest increase by 7% during 2022 to reach 9% higher levels than in 2019.

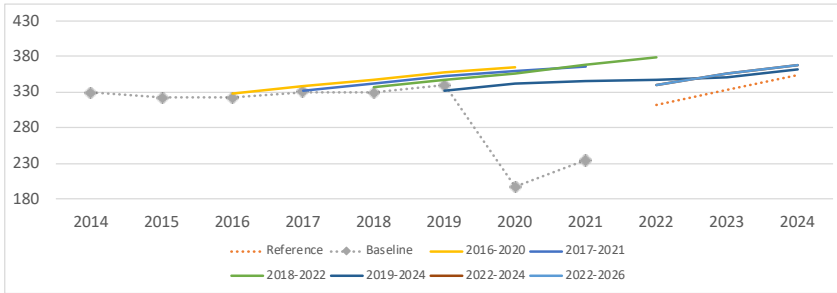
ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P
Maastricht ACC (EDYY)	Additional ATCOs in OPS to start working in the OPS room	2	2.2	0.5	6.4	19	16.8	9.8
	ATCOs in OPS to stop working in the OPS room	2.5	2.5	6	3	0	10	8.5
	ATCOs in OPS to be operational at year-end	292	291.7	286.2	289.6	308.6	315.4	316.7
Total - MUAC (en route)	Additional ATCOs in OPS to start working in the OPS room	2	2.2	0.5	6.4	19	16.8	9.8
	ATCOs in OPS to stop working in the OPS room	2.5	2.5	6	3	0	10	8.5
	ATCOs in OPS to be operational at year-end	292	291.7	286.2	289.6	308.6	315.4	316.7

2024 (end) - 2020 (beg.)	
	+25
	+25

3.2.3 Review of previous and existing capacity profile plans per ACC ✔

Maastricht ACC (EDYY)



- Historical data shows a minor decrease in the baseline values in 2015, followed by an increase in 2017 to reach 2014 values. In 2019, the baseline values have been increased significantly compared to the previous year, addressing the closure of the capacity gap. The planned values were consistently higher than the baseline values over the period.

- The latest planned capacity profiles show an average annual growth of 4% during 2022-2024. These plans result in a reasonable capacity surplus in the remaining years of RP3.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									312	334	354
Baseline	329	322	322	330	329	340	197	234			
2016-2020			328	338	348	358	365				
2017-2021				332	342	352	359	366			
2018-2022					337	347	357	368	379		
2019-2024						332	342	345	348	351	362
2022-2024									340	357	368
2022-2026									340	357	368
Latest vs Reference									9%	7%	4%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps n/a

3.2.6 PRB Key Points ✔

- The ANSP breakdown values are consistent with the ANSP reference values. The breakdown value for 2022 is slightly higher than the delay forecast based on the high scenario. Breakdown values fall within the range of the delay forecast in 2023 and 2024.
- The capacity plans indicate that MUAC will have a reasonable capacity surplus in the remaining years of RP3.

3.3. Arrival ATFM delay per flight (not applicable)

MUAC

3.4 Capacity Incentive schemes

MUAC

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.04 min	0.500%	0.500%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.19	0.19	0.19
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.19	0.19	0.19
Pivot values for RP3			0.12	0.12	0.12

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A dead band of +/- 0.04 minutes is applied around the modulated pivot value before any incentives apply. The maximum penalties or bonuses apply at +/- 0.05 minutes from the pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 60% of total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could affect the financial incentive.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of the determined costs.

3.4.2 Terminal capacity incentive scheme

n/a

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

En route:

- MUAC has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.
- In addition to the ANSP level incentive scheme, a FAB-level incentive scheme also applies.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.5 Investments

MUAC - MUAC

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	9.2	6.4	6.6	7.8	8.4	38.5
	En route	9.2	6.4	6.6	7.8	8.4	38.5
	Terminal	0.0	0.0	0.0	0.0	0.0	0.0

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	New Voice Communication System	ED-137 compliant VoIP Voice Communication System, including test system. The system supports the FABEC concept for inter-centre sectorisation.	6.9	No	No	3.4	0.0
2	MeDUSA (MUAC Dual System Architecture)	The MUAC Dual System Architecture (MeDUSA) project will provide an upgraded fallback/system, which will support the necessary operational requirements for a safe transition from Primary high capacity to Fallback sustained capacity. Upgraded Fallback CWP-HMI with additional functionalities on top of the currently existing ones: identical look and feel as the PRI-CWP, datalink and outgoing OLDI. The project is currently in the initiation phase.	13.5	No	No	0.0	0.0
3	Back up Voice Communication System	Replacement of the current BVCS system introduced in 2008	8.7	No	No	0.0	0.0
4	Data Centre Modernisation	The data Centre Modernisation project aims at the upgrade of the equipment rooms and their installations and facilities to the Uptime Institute TIER III level. Besides that, the project will deliver processes and tooling to efficiently plan the rack-space and administer the assets and their physical (network) interconnections.	7.1	No	No	1.0	0.0
5	IOP-G programme - First deployment	To comply with the Initial SWIM Implementing Rule 716/2014 of the Pilot Common Projects (PCP), MUAC is preparing the implementation of the Flight Object (FO), supported by the Blue SWIM Profile. The IOPG Programme comprises additional validations to complement the validations under SESAR1 & SESAR2020, the development and integration of the SWIM Node and Flight Object Manager (common project with ITEC) and the modifications to the legacy systems.	21.0	Yes	No	0.0	0.0
6	PHOENIX - New ops building (previously called New ATCO Consoles project)	New operational building, flexibly locatable in a brighter OPS Room, including new consoles designed to modern ergonomic standards, improved training, test and locat contingency infrastructure, refurbished training, test & contingency environment. The Study Phase has been approved by the MCG; the outcome of the study will be presented in the MCG of Spring 2022.	34.4	No	No	0.0	0.0
Total:						4.5	0.0

Airspace user feedback regarding major investments

In 2022, airspace users raised concerns about the amount of investments of MUAC within a short time period and requested more detailed information regarding the benefits of past and future investments. MUAC noted that the focus is on investments that will make a difference for airspace users and that, in general, investments have been scaled back or postponed to RP4 where possible.

Review of investments

Investments #1 and #4 were included in the RP2 performance plan and will continue throughout RP3. New major investments represent 11% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 36% of the planned value and the amount underspent was 49.6M€. In terms of depreciation and cost of capital, the airspace users have financed 9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	New Voice Communication System	Network	Safety, Capacity, Cost-efficiency	Safety: Current safety levels are maintained or improved. Improved radio coverage. Capacity: The N-VCS can support more sectors than the old one and provides in addition more flexibility when switching from one sector configuration to another. Essential enabler for future CONOPS developments e.g. deeper integration with FDPS. Cost-efficiency: Reduced communication maintenance costs.
2	MeDUSA (MUAC Dual System Architecture)	Local	Capacity	Capacity: Positive impact as a) MeDUSA ensures that primary system capacity at MUAC can grow and b) When operating under fallback conditions, the new system will be able to cope with more flights than the current fallback system.
3	Back up Voice Communication System	Non-performance	Cost-efficiency	Cost-efficiency: With the migration to IP technology, the phase out of legacy telephony will start.
4	Data Centre Modernisation	Non-performance	Safety, Environment, Capacity	Safety: Reduced risk of system interruptions. Environment: Improved energy consumption, fire protection and physical security. Capacity: Reduced risk of system interruptions.
5	PHOENIX - New ops building (previously called New ATCO Consoles project)	Local	Environment, Capacity	Environment: Sustainability will be a high priority for the new OPS building. Capacity: Additional CWPs will allow for a higher capacity and support the future CONOPS.

Additional information

New Voice Communication System: Joint investment in partnership with DSN. Replacement of ATM system. Link to ATM Master Plan: Replacement of the Voice System, supporting VoIP for ground telephone; implementation objective COM11.1.

MeDUSA (MUAC Dual System Architecture): Overhaul of existing ATM system. The upgraded Fallback System will provide for a new Fallback CWP-HMI, as well as a replacement of the current MUAC Fallback Flight Server.

Back up Voice Communication System: Replacement of ATM system. Link to ATM Master Plan: Replacement of the Backup Voice System, supporting VoIP for ground telephone; implementation objective COM11.1.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	36.5	36.5	0.0	0.5	1.2	2.5	3.8	8.1
Existing investments			8.6	6.3	5.2	4.7	4.1	29.0

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	Data Centre operations	7.3	7.3	0.6	0.6	0.6	0.6	0.6	3.1	Obsolescence : replacement of servers and workstations NOTE: Although the total value of this line is more than €5mln, the line covers a significant number of smaller replacement investments which are grouped here for convenience. All individual investments are well below the €5mln threshold.
2	New Access Control System	2.8	2.8	0.0	0.0	0.0	0.1	0.2	0.3	Obsolescence of the existing access control system, acquire a new and state of the art access control system based on an integrated security platform which interconnects all required applications within an open architecture meeting the present regulations, expecting benefits are in user friendliness, IT security, capacity and possibilities of the new system, improvement of physical barriers, futureproof and reducing of maintenance costs.
3	Automated/remote ATCO training, self training and scoring (MUSE)	1.7	1.7	0.0	0.0	0.0	0.0	0.6	0.6	Improvement of the real time simulation environment at MUAC and from home leading to workload reduction, sel training for ab-initios

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls? ✓

Maastricht ACC is expected to have a capacity surplus in 2022 (9%), evolving to 7% for 2023 and 4% for 2024.

The IOP-G programme - First deployment investment defined for RP3 can be a capacity contributor once the service is fully implemented and is linked with PCP/CP1 ATM Functionality AF5. Other investments contribute to resilience, scalability, and flexibility, especially in the areas of infrastructure, communications, and data services management.

Of the other (non-major) investments, the Data Centre operations investment contributes to resilience.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP? ✓

The IOP-G programme - First deployment investment will enable access to common flight data benefitting coordination and flight data management especially in a user-preferred route environment.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? ⚠

Investments contributing to Maastricht UAC capacity are limited during RP3. In RP2 performance planning, MUAC planned for a New Generation ATM: FDPS convergence investment, which is described as providing Flight Object management capabilities similar to those described in the RP3 IOP-G programme - First deployment investment. Based on the LSSIP MUAC documents, no significant new FDPS capabilities were implemented during RP2 and the IOP-G programme - First deployment investment is not expected to be implemented until 2029. Thus a close monitoring of capacity evolution in MUAC is needed to ensure that no capacity shortfalls occur following RP3.

3.5.4 PRB Key Points ⚠

- Two investments from RP2 will continue throughout RP3.
- The actual CAPEX for RP2 was 36% of the planned value and the amount underspent was 49.6M€. In terms of depreciation and cost of capital, the airspace users have financed 9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.
- There is a capacity surplus expected in Maastricht UAC in the remaining years of RP3.
- There are no capacity enhancing investments planned for RP3 linked to PCP/CP1 ATM Functionalities, only investments possibly directly contributing to capacity will not be implemented until 2029.
- Investments contribute to resilience, scalability, and flexibility in line with the European ATM evolution.

PRB Assessment

THE NETHERLANDS

Draft Performance Plan

1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
LVNL	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

LVNL	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by the Netherlands should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
ANSP target for horizontal en route flight efficiency (KEA) (%)	7.22%	6.26%	5.81%	5.81%	5.81%
Previous submitted PP	7.22%	6.26%	5.81%	5.81%	5.81%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC for the Netherlands should be approved.

- The Netherlands' horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that the Netherlands did not achieve the 2021 target of 2.63% in its performance plan. For this reason and taking into account performance from previous years, the Netherlands remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for <u>en route</u> ATFM delay per flight (min)	0.13	0.06	0.09	0.09	0.10
National target for <u>terminal</u> and airport ANS ATFM arrival delay per flight (min)	2.00	1.40	1.60	1.60	1.40
Previous submitted PP (en route)	0.13	0.06	0.09	0.09	0.10
Previous submitted PP (terminal)	2.00	1.40	1.60	1.60	1.40

PRB assessment

The PRB concludes that the capacity breakdown values proposed by the Netherlands should be approved.

- The Netherlands is expected to have sufficient capacity to meet the demand throughout 2022-2024.
- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk.

4. Cost-efficiency ✓

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	151.70	88.63	75.73	71.66	+0.7%	+0.7%
Target for determined unit cost (DUC) (€2017) - Terminal	298.57	221.58	189.69	179.88	-0.2%	n/a
<i>Previous submitted PP (en route)</i>	151.70	88.63	75.79	71.71	+0.7%	+0.7%
<i>Previous submitted PP (terminal)</i>	298.57	221.58	189.69	179.88	-0.2%	n/a

PRB assessment

The cost-efficiency targets of the Netherlands have been slightly revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

The PRB concludes that the cost-efficiency targets proposed by the Netherlands should be approved.

- The Netherlands is consistent with the RP3 DUC trend in terms of average reduction.
- The Netherlands is not consistent with the long-term Union-wide DUC trend.
- The Netherlands is consistent with the average DUC baseline of the comparator group.
- The Netherlands presents justifications for a deviation from the cost-efficiency trends to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

5. PRB recommendations

CAPACITY

- The Netherlands should revise the incentive schemes so that they have a material impact on the revenues.

6. PRB recommendations from the performance plans submitted in November 2021

CAPACITY

- The Netherlands should revise the incentive schemes so that they have a material impact on the revenues.

THE NETHERLANDS

Safety KPA

1.1 Summary of safety key data and assessment results

Netherlands

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are met in 2021.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC levels. Considering the current safety levels, the measures are considered sufficient and adequate to maintain the required safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA level. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

The plan describes the change management practice at the ANSP level that, if compliant with the Commission Implementing Regulation (EU) 2017/373, should provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by the Netherlands should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

Netherlands

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
LVNL	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	D	C	C	C	D	D	✓	
	Safety assurance	C	C	C	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were planned to be attained at the end of RP3. The Netherlands already met the RP3 safety targets in 2021.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA, and the FABEC Authorities.

At ANSP level, the following measures are planned to be implemented:

- Annual update of SMS;
- Establishment of a risk-based Safety Plan; and
- Update of Safety Risk Target document and corresponding Unit Safety Case.

At the level of Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373, applicable to EoSM improvements are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary.

Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment).

Indicators, issues, and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

The performance plan describes the change management practice deployed for iCAS implementation, limiting the negative impact on the operations (the transition is based on shadow mode operations applied during night-time and over winter season, thus without negative effect on capacity).

The procedures described, if compliant with the Commission Implementing Regulation (EU) 2017/373, should provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

THE NETHERLANDS

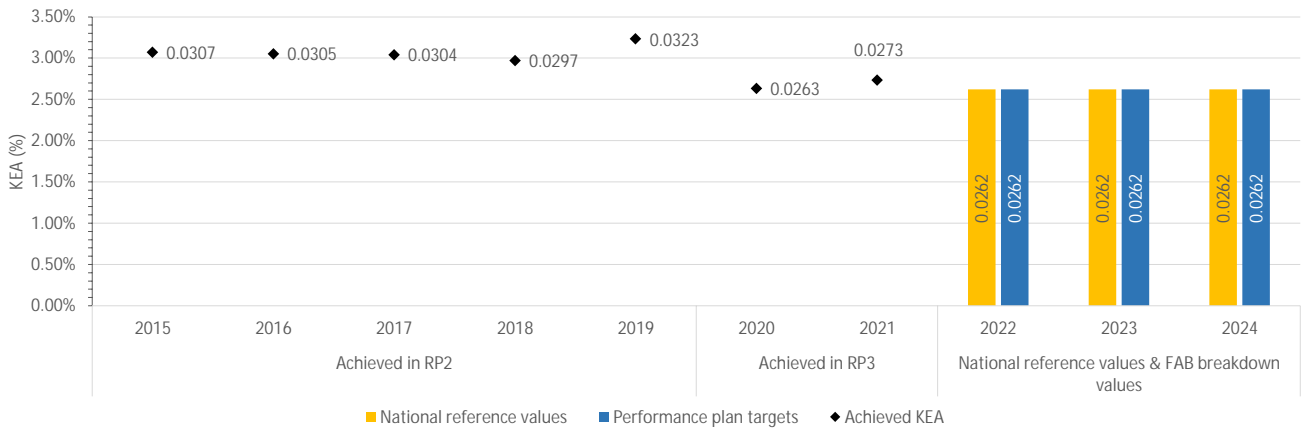
Environment KPA

2.1 Summary of Key Data and Assessment Results

Netherlands

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	7.22%	2.63%	2.62%	2.62%	2.62%
FAB breakdown value	n/a	2.63%	2.62%	2.62%	2.62%
Comparison of draft breakdown values with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC for the Netherlands should be approved.

- The Netherlands' horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that the Netherlands did not achieve the 2021 target of 2.63% in its performance plan. For this reason and taking into account performance from previous years, the Netherlands remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

2.2 Measures of Achievement

Netherlands

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
No free route airspace (FRA) is operated in the Amsterdam flight information region (FIR) below FL245 since it is not required by the PCP. MUAC control upper airspace above FL245 where 24-hour FRA is available. FRA in airspace controlled by LVNL is not considered a priority for the Netherlands, as it is deemed to be outside the CP1 geographical scope of FRA (above FL305).		n/a	Page 65
Major 2021 ERNIP Recommended Measures:	2	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1(a)	Page 175
Dutch Airspace Redesign Programme (DARP)	✓	3.2.1(a)	Page 187
ATS route improvement Amsterdam FIR	✓		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that the Netherlands achieved a KEA of 2.63% in 2020. In 2021, the Netherlands reached a KEA of 2.73% which means it did not achieve the 2021 target of 2.63% in its performance plan.

The Netherlands suggested that horizontal flight efficiency is largely a function of airspace structure and the availability of airspace, i.e. temporary reserved areas (TRAs) and temporary segregated areas (TSAs). The Netherlands notes their ability to influence both of these factors and plans a national airspace redesign programme as well as proposing to move a military training area away from major traffic flows. The benefits of these initiatives will only be achieved at the end of RP3 following the implementation of this project in the winter of 2022/23.

Other initiatives planned during RP3 include the implementation of the iCAS harmonised air traffic control system, cross-border arrival manager (AMAN/XMAN), performance based navigation (PBN), and more effective civil-military co-ordination.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Netherlands plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

THE NETHERLANDS

Capacity KPA

3.1 Summary of capacity key data and assessment results

Netherlands

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values and are lower than the STATFOR high delay forecast in 2024. The capacity plans indicate that the Netherlands will have a capacity surplus during 2022-2024. The implementation of the new ATM system may introduce capacity constraints in 2023, however it is not foreseen to generate delays above the target values.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

The Netherlands included four airports in the performance plan, out of which the main driver for traffic and delays is Amsterdam Schiphol. National targets are set significantly lower than in RP2, and also represent a major improvement compared to the average past performance. Amsterdam Schiphol generated the highest amount of delays in RP2 over the SES area, and despite the planned enhancement measures, performance is still expected to be significantly worse than that of the group of similar airports.

3.1.3 Incentives

En route:

The Netherlands has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the national incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

The Netherlands has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

Investments #5 and #6 were included in the RP2 performance plan and will continue throughout RP3. For both investments, the actual CAPEX delivery in RP2 was lower than planned, especially for investment #6 (the most significant underspending in RP2).

The actual CAPEX for RP2 was 22% higher than the planned and the amount overspent was 33.8M€. Despite overspending on investments, the total costs related to investments were 11.6M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.

Amsterdam ACC is expected to have a capacity surplus during RP3.

One major new investment targeting en route capacity is planned for implementation during RP3. This, and other major investments, are linked to PCP/CP1 ATM

Functionalities AF1, AF2, AF3, AF4 and AF5.

Other (non-major) investments contribute to both en route and airport/TMA capacity. Investments in general contribute to resilience, scalability, and flexibility in line with the European ATM evolution.

3.1.5 PRB conclusions

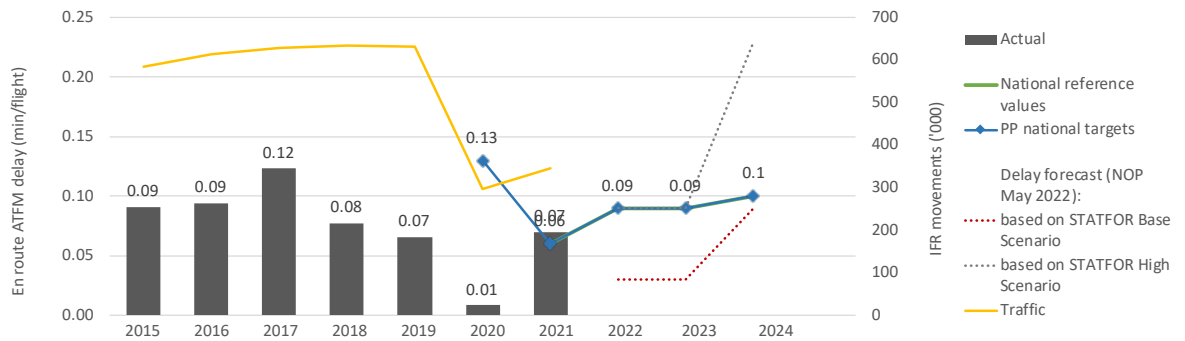
The PRB concludes that the capacity breakdown values proposed by the Netherlands should be approved.

- The Netherlands is expected to have sufficient capacity to meet the demand throughout 2022-2024.
- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk.
- The Netherlands should revise the incentive schemes so that they have a material impact on the revenues.

3.2 En route ATFM delay per flight

Netherlands - LVNL

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+3%	+4.6%	+2.4%	+1.0%	-0.3%	-53.0%	+16.0%			
Actual delay/flight	0.09	0.09	0.12	0.08	0.07	0.01	0.07			
National reference values						n/a	0.06	0.09	0.09	0.10
PP national targets						0.13	0.06	0.09	0.09	0.10
Delay forecast*:										
Based on STATFOR High Scenario							-	0.09	0.09	0.23
Based on STATFOR Base Scenario							-	0.03	0.03	0.09

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✔	✔	✔

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✔

Assessment of capacity enhancement measures and review against NOP

During RP2, the Netherlands experienced capacity constraints related mostly to ATM capacity, weather, ASM, and partially staffing (2017), registering only minor delays except for 2017.

The performance plan includes the following capacity enhancement measures, all in line with the NOP:

- LARA - FUA and airspace management tool (2023),
- AOP-NOP Information sharing (2022),
- Continuous recruitment and improved training,
- Additional activities to eliminate the bow-wave effect of COVID-19,
- AMAN,
- New ATM system iCAS (2023 - 2024), including training (2023), new OPS room for iCAS (2023), and
- Redesign of the Dutch airspace.

The plan is expected to support the achievement of the capacity targets in RP3 with the support of included capacity enhancement measures, although 2023 target might be more difficult to achieve without proper level of change management.

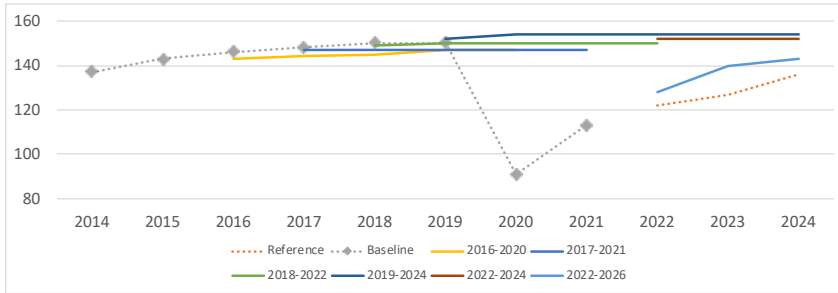
There is a -10% reduction in planned ATCO FTE numbers over RP3 at LVNL, however, considering the capacity enhancement measures and the planned capacity profiles, it is expected that this reduction will not generate a capacity gap, as LVNL is expected to have significant capacity surplus in all years of RP3.

ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Amsterdam ACC (EHAA)	Additional ATCOs in OPS to start working in the OPS room	3	4	1	2	4	4	4	
	ATCOs in OPS to stop working in the OPS room	0	0	0	7.4	2.9	5	7.9	
	ATCOs in OPS to be operational at year-end	85.4	89.4	90.4	85	86.1	85.1	81.2	-8
Total - LVNL (en route)	Additional ATCOs in OPS to start working in the OPS room	3	4	1	2	4	4	4	
	ATCOs in OPS to stop working in the OPS room	0	0	0	7.4	2.9	5	7.9	
	ATCOs in OPS to be operational at year-end	85.4	89.4	90.4	85	86.1	85.1	81.2	-8

3.2.3 Review of previous and existing capacity profile plans per ACC ✔

Amsterdam ACC (EHAA)



- Historical data shows that baseline values in RP2 grew by around 2.3% annually and that ANSP capacity plans were consistently below the baseline values.

- The latest planned profiles show an average annual growth of 5.7% over 2022-2024 resulting in lower values in 2024 than in 2019. However, a reasonable capacity surplus is expected in all remaining years of RP3.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									122	127	136
Baseline	137	143	146	148	150	150	91	113			
2016-2020			143	144	145	147	147				
2017-2021				147	147	147	147	147			
2018-2022					149	150	150	150	150		
2019-2024						152	154	154	154	154	154
2022-2024									152	152	152
2022-2026									128	140	143
Latest vs Reference									5%	10%	5%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events ✔

Review of the planned impact of special events in some years of RP3

Both the performance plan and the NOP identify the implementation of the new ATM system (iCAS) as a significant event in terms of possible capacity impact. The NOP estimates capacity impact induced by the project and associated activities higher than the performance plan.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

The performance plan identifies measures to minimise the capacity impact of the planned ATM system implementation. It is to be noted that the special event is listed under capacity enhancement measures.

3.2.5 Review of the measures to increase capacity and address capacity gaps ✔

- a) Performance plan contains additional measures compared to the NOP in order to close the capacity gap? ✔
The plan contains all measures proposed by the NOP, no additional ones.
- b) Measures proposed by the NM to enhance capacity are planned and described in the performance plan? ✔
The measures proposed by the NM are addressed by the performance plan.
- c) The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? n/a
n/a
- d) The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? !
No capacity gaps are foreseen. The NSA proposed no additional measures for the operational stakeholders in order to close the capacity gap.
- e) Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? ✔
There is a -10% reduction in planned ATCO FTE numbers over RP3 at LVNL, however, it is expected that this reduction will not generate a capacity gap.
- f) The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? !
Only high-level provisions are made.
- g) The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? ✔
The performance plan contains reference to the implementation of a new ATM system to overcome current limitations and improve capacity.

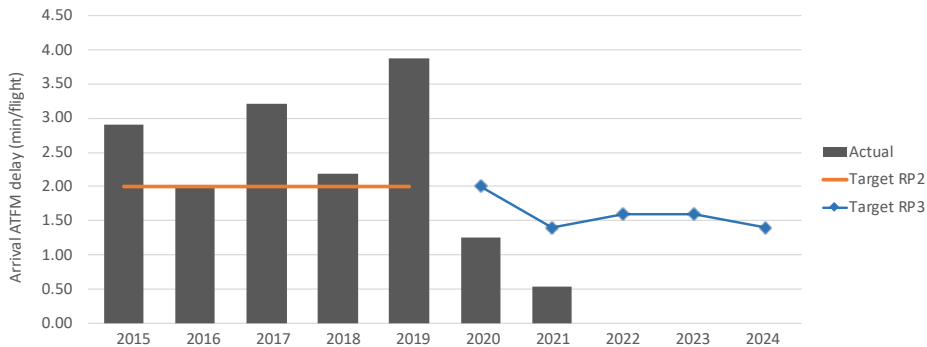
3.2.6 PRB Key Points ✔

- The ANSP breakdown values are consistent with the ANSP reference values and are lower than the STATFOR high delay forecast in 2024.
- The capacity plans indicate that the Netherlands will have a capacity surplus during 2022-2024.
- The implementation of the new ATM system may introduce capacity constraints in 2023, however it is not foreseen to generate delays above the target values.

3.3. Arrival ATFM delay per flight

Netherlands

3.3.1 Overview of arrival ATFM delay per flight



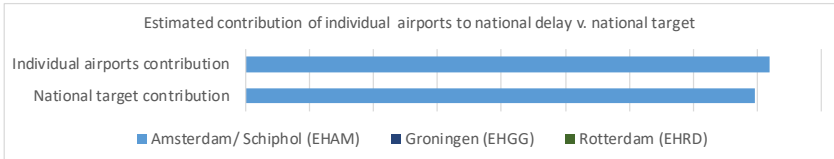
	Target (RP2/RP3)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level		2.00	2.00	2.00	2.00	2.00	2.00	1.40	1.60	1.60	1.40
	<i>Actual</i>	2.91	2.00	3.21	2.19	3.88	1.26	0.54	-	-	-
Amsterdam/ Schiphol (EHAM)		3.18	2.17	3.47	2.39	4.23	1.41	1.54	1.76	1.76	1.54
Groningen (EHGG)		0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Rotterdam (EHRD)		0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

The Netherlands includes four airports in the performance plan. The absolute driver of the national performance in terms of movements and arrival ATFM delay is Amsterdam, while the other three airports registered very low delays during RP2 and are not expected to generate any during RP3. On the other hand, Amsterdam Schiphol exceeded the RP2 target and was in average the airport with the highest arrival ATFM delay per flight (SES performance scheme) in 2015-2019. The proposed targets for RP3 represent a reduction of delays with respect to RP2 targets but especially a significant improvement with respect to the observed past performance (2.84 minutes per arrival). The performance plan explains that due to the impact of the COVID-19 pandemic, several foreseen measures have been delayed and as a result the performance improvement profile has also been delayed by one year. However, due to the lower traffic levels in 2021 and 2022, it should still be possible to perform at a better level and therefore the targets have been lowered with respect to the initial RP3 plan.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Amsterdam/ Schiphol (EHAM)	1.65
Groningen (EHGG)	0.00
Rotterdam (EHRD)	0.00
National Target	1.50



Amsterdam Schiphol is the only airport in the Dutch performance plan expected to generate delays, and the breakdown for that airport with the traffic share is in line with the national target.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Amsterdam/ Schiphol (EHAM)	GROUP I	0.65	3.10	+2.45	1.65	+1.00
Groningen (EHGG)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00
Rotterdam (EHRD)	GROUP IV	0.00	0.00	+0.00	0.00	-0.00

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

Amsterdam Schiphol registered the worst ATFM delays in Europe in the period 2015-2019, with an average value more than four times the median delays of similar airports. The targets for RP3 at Amsterdam Schiphol represent an important improvement but they are still more than double that reference value based on past performance for similar airports.

3.3.5 PRB Key Points

- The Netherlands included four airports in the performance plan, out of which the main driver for traffic and delays is Amsterdam Schiphol. National targets are set significantly lower than in RP2, and also represent a major improvement compared to the average past performance.
- Amsterdam Schiphol generated the highest amount of delays in RP2 over the SES area and, despite the planned enhancement measures, performance is still expected to be significantly worse than that of the group of similar airports.

3.4 Capacity Incentive schemes

Netherlands

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.02 min	0.500%	0.500%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.09	0.09	0.10
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.09	0.09	0.10
Pivot values for RP3			0.06	0.07	0.07

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A deadband of +/- 0.02 minutes is applied around modulated pivot value before any incentives apply. The maximum penalties or bonuses apply at +/- 0.05 minutes from pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 65% of total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could affect the financial incentive.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of determined costs.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±20.0%	0.500%	0.500%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.185	±0.185	±0.155
Performance Plan targets			1.60	1.60	1.40
Pivot values for RP3			0.37	0.37	0.31

Threshold and pivot value review

The terminal incentive scheme includes a dead band of ±20% that should allow for small variations in the arrival ATFM delay with no resulting bonuses or penalties. The pivot values are CRSTMP modulated and do not seem to follow the same improvement trend as the national target, representing slightly higher CRSTMP attributed delays than in RP2.

Modulation review

The Netherlands has chosen to modulate the pivot values according to CRSTMP causes.

According to the performance plan, modulated pivot values have been determined using a stepwise improvement of CRSTMP-only targets from 0.37 minutes per flight, 0.37 minutes per flight and 0.31 minutes per flight respectively for 2022-2024.

Nevertheless, while the targets (all causes) for arrival ATFM delay for RP3 represent an improvement with respect to past performance, the chosen CRSTMP pivot values are worse than the average CRSTMP delay observed during 2015-2019 (0.29 minutes per arrival).

Review of financial advantages/disadvantages

The scheme is symmetric, with a maximum bonus/penalty of 0.5%.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

En route:

- The Netherlands has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.
- In addition to the national incentive scheme, a FAB-level incentive scheme also applies.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

- The Netherlands has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

- As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact financial incentive.

3.5 Investments

Netherlands - LVNL

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	23.4	22.2	23.2	26.2	36.3	131.3
	En route	17.4	15.8	16.5	18.5	25.5	93.7
	Terminal	5.9	6.4	6.8	7.7	10.8	37.6

RP3 investment ratio ER/TRM



* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	Centralised Approach and remote tower Beek and Eelde	<i>The aim of the project is to relocate the provision of the Air Traffic Control Services (ATS) of two airports in the Netherlands, Maastricht Aachen Airport and Groningen Airport Eelde, by creating a Remote Tower Center (RTC) at Schiphol's facilities and deploying Remote Towers in the two relocated airports and centralise approach at Schiphol's facilities. The local maintenance organization at the two airports is going to be integrated into the Schiphol maintenance organization.</i> <i>More details can be found in section 2.5 of the performance plan.</i>	13.6	No	No	0.3	0.3
2	Common voice communication system (VCS)	<i>The activity aims to deploy a Voice over Internet Protocol (VoIP) based Voice Communication System (VCS) for civil and military Air Traffic Control below flight level 245, in the Netherlands.</i> <i>More details can be found in section 2.5 of the performance plan.</i>	18.2	No	No	0.9	0.8
3	Expansion facilities/ Polaris	<i>Due to various internal and external developments, amongst others the need for more space for the (migration towards a) new ATC system iCAS, the intended CIV/MIL integration of training and education and the outcome of a Contingency study, the present ATC Centre and its infrastructure need to be expanded. Polaris (the name of the new building) will be delivered just before RP3. During RP3 Polaris will be made ready to house the new ATC system iCAS and a trainings- and education centre for military and civil usage.</i>	50.4	No	No	0.1	0.0
4	LVNL office and sustainability	<i>During RP3 LVNL has to invest in renovating in a sustainable manner the existing HQ building at Schiphol Oost by investing in solar panels to generate green electricity, making the heating installations more energy efficient, insulation of the building, durable office furniture etc. As part of the renovation, the building will be prepared for other ongoing developments, in particular through the creation of offices for staff related to e.g. remote tower/centralised approach, and integration of civil and military service providers.</i>	56.4	No	No	2.0	0.2
5	Maintenance investments	<i>In order to maintain the normal level of service provision, several investments are needed with respect to the regular replacement and updating of the ATM systems, buildings and infrastructure, such as:</i> - Replacing ILS systems; - Replacing VOR/DMEs; - Replacing direction finders (VDF); - Replacing TAR systems by WAM/ ADS-B systems - Replacement of monitoring and control systems; - Replacement of computers and ICT systems; <i>Additionally, the introduction of new, modern systems as part of many of the other investments leads to the need to replace/modernise support systems.</i>	129.7	No	No	7.4	3.3
6	Replacement of AAA by iCAS and SESAR Deployment of Trajectory Based Operations	<i>The current AAA-system (FDP) is the core of the LVNL support system for operational services, it allows for the processing of flight plan- and radar data, it handles the display of relevant information on the operational workstations and it includes warning- (safety nets) and planning functions. AAA will no longer meet future operational requirements, like 4D trajectory based operations and SWIM, at a cost-efficient level.</i> <i>More details can be found in section 2.5 of the performance plan.</i>	129.0	Yes	Yes	8.7	0.0
7	System Wide Information Management (SWIM)	<i>Implementation of System Wide Information Management includes IPv6 based data communication networks, Public Key Infrastructure, SWIM technical infrastructure and systems using web services for the exchange of:</i> - Aeronautical information - Meteorological information - Cooperative network information - Flight information (Yellow profile). <i>More details can be found in section 2.5 of the performance plan.</i>	23.2	Yes	No	1.0	0.8
8	Tower system	<i>LVNL will deploy a state-of-the-Art tower system at Schiphol Airport to support the implementation of the European ATM Master Plan and the Common Project 1 (CP1) in accordance with the SESAR deployment plan. Realisation of CP1 requirements in the TWR domain consists of:</i> - Departure Management Synchronised with Pre-departure sequencing, including A-SMGCS 1 and 2 - Airport Safety Nets <i>In addition:</i> - A-SMGCS routing and planning function (to improve Airport Safety Nets) - Upgrade of the A-SMGCS Surveillance System - Interface for surface movement guidance <i>More details can be found in section 2.5 of the performance plan.</i>	23.0	Yes	Yes	0.0	2.0
Total:						20.5	7.5

Airspace user feedback regarding major investments

During the consultation in 2021, the airspace users did not comment on a specific investment but noted a need for a clearer view on the benefits, the underspending in RP2 compared to the high level of ambition, the feasibility of the portfolio and the practical effects of the COVID-19 pandemic.

Review of investments

Investments #5 and #6 were included in the RP2 performance plan and will continue throughout RP3. For both investments, the actual CAPEX delivery in RP2 was lower than planned, especially for investment #6 (the most significant underspending in RP2).

New major investments represent 21% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 22% higher than the planned and the amount overspent was 33.8M€. Despite overspending on investments, in terms of depreciation and cost of capital, the total costs related to investments were 11.6M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Centralised Approach and remote tower Beek and Eelde	Network, Local	Cost-efficiency	Cost-efficiency: The project will optimise the efficiency of the Air Traffic Control Service at the two concerned airports EHBK and EHGG. After commissioning the remote tower technology is scalable to more civil or military towers so more efficiency can be reached. This will most likely increase when the multiple tower concept is implemented.
2	Common voice communication system (VCS)	Network, Local	Safety, Capacity, Cost-efficiency	Safety: The three lane system is more stable, with a lower risk of overall VCS failure. Capacity: The three lane system will prevent air traffic control from having to completely reduce air traffic in the Netherlands to zero in case of a failure of one of the VCS systems, thus preventing serious disruption of the operation and delay. Cost-efficiency: By VoIP reduced costs by enabling flexible and dynamic use of ANSP resources, leading to long term savings.
3	Expansion facilities/ Polaris	Network, Local	Capacity, Cost-efficiency	Capacity: Improved contingency for ATM services in the Dutch airspace. Cost-efficiency: Enabler for setting up a joint civil/military training school.
4	LVNL office and sustainability	Local	Cost-efficiency	Cost-efficiency: Reduction of energy costs by solar panels to generate green electricity, more energy efficient heat installations and insulation of the buildings.
5	Maintenance investments	None	None, ensure continuity	No impact expected, these investments ensure the continuity of services.

Additional information

Centralised Approach and remote tower Beek and Eelde: New ATM system, linked to AOP14 – Remote Tower Services.

Common voice communication system (VCS): New ATM system, extension to a three-lane voice communication system shared with LVNL's military partner and using the Voice over Internet Protocol (VoIP). Link with the ATM Master Plan COM 11.1 – Voice over Internet Protocol (VoIP) in en route.

Expansion Facilities / Polaris: Joint development with the military, with the purpose of using the facility as a joint training school. Polaris is a building for a contingency centre for ATM services.

Maintenance investments: Replacement investments and overhaul of existing systems.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	40.7	32.6	0.0	0.3	1.4	2.6	2.9	7.3
Existing investments			19.2	20.8	19.4	18.4	18.2	96.0

3.5.3 Review of investments contribution to capacity

- a) **Investments contribute to the rectification of identified capacity shortfalls?** ✔

A capacity surplus can be expected in Amsterdam ACC during RP3 ranging from 5% to 10%.

Replacement of AAA by iCAS and SESAR Deployment of Trajectory Based Operations investment will contribute to en route capacity towards the end of RP3 (2023) and are linked to PCP/CP1 ATM Functionalities AF1, AF3, AF4 and AF5. The Tower System investment will contribute to airport/TMA capacity at Schipol and is linked to PCP/CP1 ATM Functionality AF2. In addition, investment to SWIM will contribute to PCP/CP1 ATM Functionality AF5.

The abovementioned investments also contribute to resilience, flexibility, and scalability together with the Common Voice Communication System investment.

Other (non-major) investments detailed in annex R to the FABEC / the Netherlands performance plan include en route capacity contributions from 1ATM: civil / military integration investment, PBN investment, and Capacity Management investment. Airport/TMA domain capacity contributions at Schipol airport can be expected from Extended Arrival Management (AMAN/XMAN) and increasing peak hour capacity and sustainability investments.
- b) **Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?** ✔

The iCAS investment will introduce 4D-trajectory capabilities enabling trajectory-based operations aligned with the ATM evolution in Europe. The system is a fully integrated CIV/MIL ATS system enabling improvements in A-FUA application for both civil and military stakeholders. It will introduce a new FDPS and CWP and will make use of improved MET information. The 1ATM investment aims to integrate the civil and military ANSPs' services and organisations below FL245 enabling capacity gains and the PBN investment will enable optimal use of airspace. Finally, the Capacity Management investment will introduce / improve various capacity management tools (workload model, decision support tools, CIFLO replacement, LARA, APOC, AMC).

At airport level, the Tower System investment will introduce departure management, safety net and A-SMGCS improvements, which are expected to contribute positively to airport capacity. Extended Arrival Management (AMAN/XMAN) investment will optimise inbound traffic flows at major hubs, and increasing peak hour capacity and sustainability investment will introduce solutions to better manage multiple variables (e.g. decrease of Runway Occupancy Time, RECAT EU and RECAT PWS, TBS, 2.5NM separation on final, etc.) of Amsterdam Schipol airport traffic.
- c) **Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?** ✔

The iCAS implementation in the Netherlands has been delayed. FABEC RP2 performance plan envisaged the cut-over for iCAS operational deployment to be in 2020 but the RP3 performance plan has a deployment date of 2023. The iCAS project was already included in RP2 planning and no other major investments targeting capacity carry over from RP2. Possibly due to the delayed implementation, annex R of the FABEC / the Netherlands performance plan expects that the benefits from iCAS investment will only start to accrue during RP4 and that, by the end of RP4, the system will deliver an estimated 11M€ in annual benefits due to delay reductions. However, based on the evidence, sufficient capacity is available throughout RP3 even with the delayed deployment.

3.5.4 PRB Key Points

- Investments #5 and #6 were included in the RP2 performance plan and will continue throughout RP3. For both investments, the actual CAPEX delivery in RP2 was lower than planned, especially for investment #6 (the most significant underspending in RP2).
- The actual CAPEX for RP2 was 22% higher than the planned and the amount overspent was 33.8M€. Despite overspending on investments, the total costs related to investments was 11.6M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.
- Amsterdam ACC is expected to have a capacity surplus during RP3.
- One major new investment targeting en route capacity is planned for implementation during RP3. This, and other major investments, are linked to PCP/CP1 ATM Functionalities AF1, AF2, AF3, AF4 and AF5.
- Other (non-major) investments contribute to both en route and airport/TMA capacity. Investments in general contribute to resilience, scalability, and flexibility in line with the European ATM evolution.

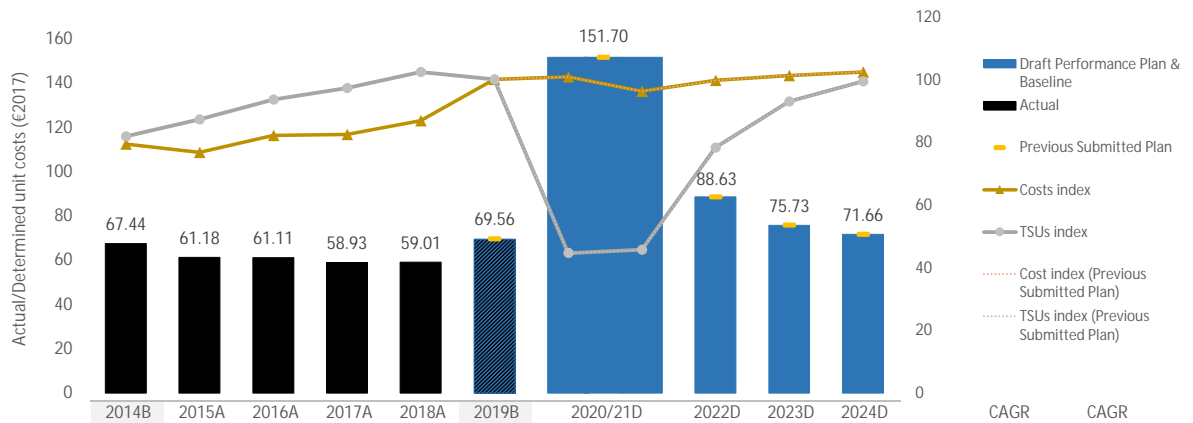
THE NETHERLANDS

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Netherlands - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



		2014B	2015A	2016A	2017A	2018A	2019B	2020/21D	2022D	2023D	2024D
Total costs	M€ (nom)	180	175	187	190	203	239	478	246	253	259
Total costs	M€ (2017)	183	177	189	190	200	231	454	230	233	236
TSU	'000	2,713	2,893	3,100	3,223	3,392	3,314	2,995	2,593	3,081	3,294
DUC	€ (2017)	67.44	61.18	61.11	58.93	59.01	69.56	151.70	88.63	75.73	71.66
Exchange rate	€:€				1.000						
DUC	€ (2017)	67.44	61.18	61.11	58.93	59.01	69.56	151.70	88.63	75.73	71.66
Annual change	%		-9.3%	-0.1%	-3.6%	+0.1%	+17.9%	+118%	-41.6%	-14.6%	-5.4%

	CAGR 2019B-2024	CAGR 2014B-2024
Cost index (Previous Submitted Plan)	+2.0%	+0.9%
TSUs index (Previous Submitted Plan)	+0.6%	+0.3%
	-0.2%	-0.1%
	+0.7%	+0.7%

4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified?	69.56 €2017	✓
The adjustments to the 2019 cost baseline relating to the transfer of costs for tax compensation and HQ support costs from the Eurocontrol cost base to the MUAC cost base seem justified.		

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	+0.7%	✓
The DUC is planned to increase on average by +0.7% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	+0.7%	✗
The DUC is planned to increase on average by +0.7% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (E) average (78.09 €2017)?	-10.9%	✓
The 2019 DUC level is -10.9% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

The cost-efficiency targets of the Netherlands have been slightly revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 remain valid and as follows:

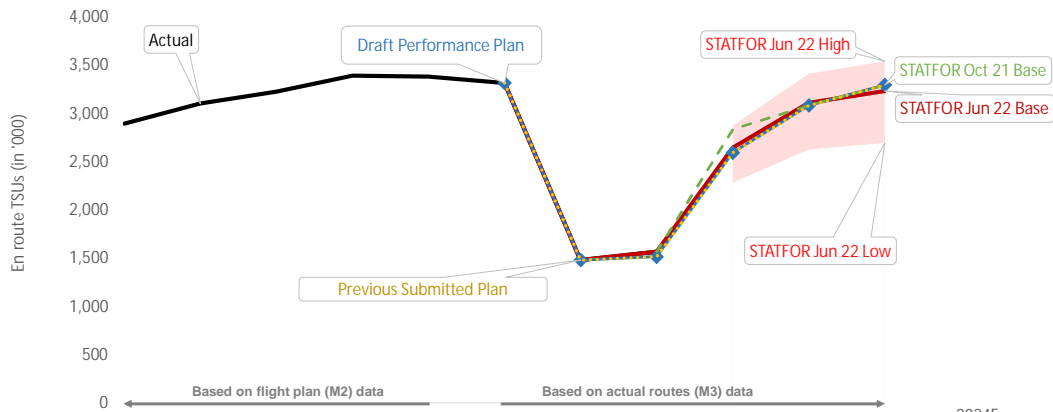
The PRB concludes that the cost-efficiency targets proposed by the Netherlands should be approved.

- The Netherlands is consistent with the RP3 DUC trend in terms of average reduction.
- The Netherlands is not consistent with the long-term Union-wide DUC trend.
- The Netherlands is consistent with the average DUC baseline of the comparator group.
- The Netherlands presents justifications for a deviation from the cost-efficiency trends to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.2 Review traffic forecasts and baseline

Netherlands - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	2,893	3,100	3,223	3,392	3,381	3,314	1,480	1,565				
	Annual change %		+7.2%	+4.0%	+5.3%	-0.3%	-2.3%	-55.4%	+5.8%				
STATFOR Jun 22 Base	'000 TSUs									2,644	3,106	3,231	-2.5%
	Annual change %									+68.9%	+17.5%	+4.0%	
STATFOR Oct 21 Base	'000 TSUs									2,835	3,081	3,294	-0.6%
	Annual change %									+81.1%	+8.7%	+6.9%	
Performance Plan	'000 TSUs						3,314	1,480	1,515	2,593	3,081	3,294	-0.6%
	Annual change %						-2.3%	-55.4%	+2.4%	+71.2%	+18.8%	+6.9%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019	3,314	
2019B (PP baseline, M3)	3,314	
2019A (as in the Reporting tables, M2)	3,381	
2019B/ 2019A	-1.97%	-1.97%
2014	2,713	
2014B (PP baseline)	2,713	
2014A (as in the Reporting tables, M2)	2,767	
2014B/ 2014A	-1.97%	-1.97%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2019 and 2014 traffic baselines were adjusted by the M2/M3 CRCO 12-months coefficient (-1.97%).

Review of 2014 and 2019 traffic baseline
 The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-1.97%). The coefficient decreases the amount of 2014 and 2019 traffic baselines while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast
 The Netherlands applied a deviation from the STATFOR October 2021 base forecast only for 2022. The deviation is justified by a significant risk of delays in traffic recovery due to recurrences of increasing infections leading to new travel restrictions and/or reduced passenger confidence, particularly in the short-term.

Review of the PP traffic forecast

- The service units forecast in the performance plan is consistent with the STATFOR October 2021 base forecast for all years of RP3 except for 2022.
- Identifying the risk of potential delays in traffic recovery, the Netherlands decided to diverge from the STATFOR October 2021 base forecast. However, following the consultation with airspace users, the deviation was reduced and applied only to 2022. The resulting forecast for 2022 is -8.6% lower than the STATFOR October 2021 base forecast, but +15.2% higher than the May 2021 base forecast and foresees a significant increase of +71.2% over 2021.
- Looking at the year-to-date traffic evolution (until November 2021), the Netherlands' en route charging zone records the lowest service units growth in 2021 (-6.6%) within the RP3 SES area.

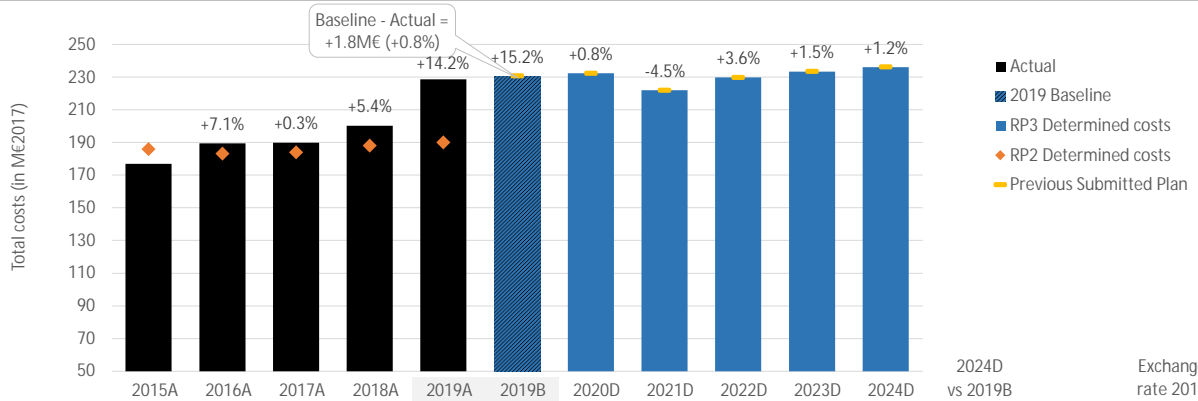
4.2.4 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:
 - The en route traffic forecast is in line with STATFOR October 2021 except for 2022.
 - No major issues identified.

4.3 Review of determined costs and baseline

Netherlands - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3

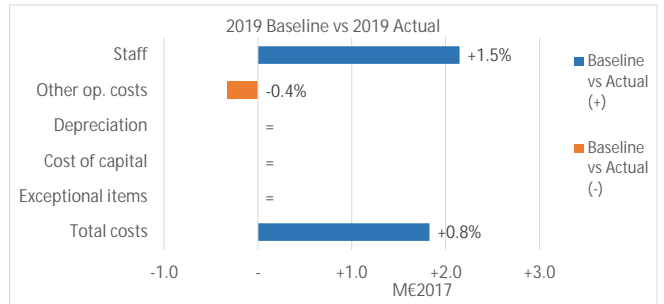


		2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B	Exchange rate 2017
Total costs	M€ (nom)	175	187	190	203	237	239	243	235	246	253	259	+8.4%	€:€
Annual change	%		+7.1%	+1.4%	+6.8%	+16.9%	+17.8%	+1.7%	-3.5%	+5.0%	+2.8%	+2.2%	+7.4%	1.00000
Inflation index	2017 = 100	98.6	98.7	100.0	101.6	104.3	104.3	105.5	107.0	108.6	110.3	112.1		
Total costs	M€ (2017)	177	189	190	200	229	231	232	222	230	233	236	+2.4%	
Annual change	%		+7.1%	+0.3%	+5.4%	+14.2%	+15.2%	+0.8%	-4.5%	+3.6%	+1.5%	+1.2%		
Total costs	M€ (2017)	177	189	190	200	229	231	232	222	230	233	236	+2.4%	

The inflation rates used in the performance plan are in line with the IMF April 2021 forecast. Minor rounding differences are observed for inflation rates 2021 and 2022 leading to a deviation of only -0.05 p.p. by the end of RP3.

4.3.2 Baseline review

Baseline analysis	Δ M€2017	%
2014B vs 2014A	3.5	+1.9%
2019B vs 2019A	1.8	+0.8%



2014 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Transfer of costs for tax compensation into MUAC cost base	ANSP	Staff	+2.7
#2 - Transfer of costs for HQ costs into MUAC cost base	ANSP	Other ops.	+1.3
#3 - Correction of adjustments #1 and #2	NSA/EUROCONTROL	Other ops.	-0.5

2019 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Integration of costs for tax compensation into MUAC cost base	ANSP	Staff	+2.2
#2 - Correction of adjustment #1	NSA/EUROCONTROL	Other ops.	-0.3

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The adjustments to the 2014 and 2019 cost baselines relate to the transfer of costs for tax compensation and HQ support costs from the Eurocontrol cost base to the MUAC cost base.

2014/2019 baseline analysis

- The adjustments to the cost baselines relating to MUAC transfers slightly increase the actual costs recorded in 2014 and 2019 (+2.2% and +0.9%, respectively).
- These adjustments (two on 2014 baseline and one on 2019 baseline) seem justified. These have been slightly modified since the performance plan submitted in November 2021 in order to address the PRB comment noting that they should be corrected to avoid double counting of the part of costs for the Netherlands, which are already included in the NSA costs. These minor amendments only slightly increase the 2014 and the 2019 baseline costs without any significant impact on the DUC assessment.

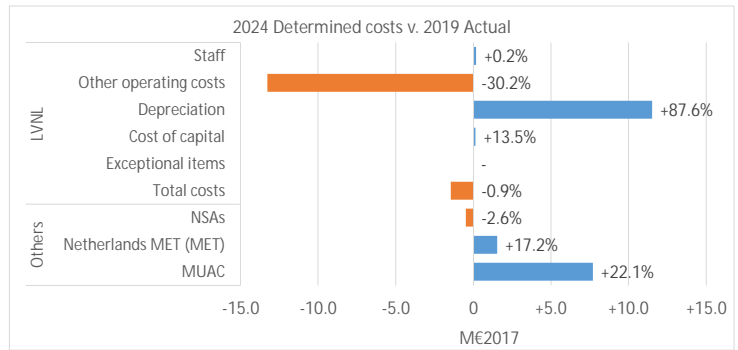
4.3.3 Review of the RP3 determined costs and incentives ✓

Review of 2020/2021 determined costs	ME€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+6.5	+3.0%

- Review of cost elements
- 🔴 Investments (see details in 3.5)
 - ✓ Cost of capital (see details in 4.3.1)
 - ✓ Pension costs (see details in 4.3.2)
 - ✓ Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



The total costs of the Netherlands are planned to increase by +3.2% (+7.3ME2017) between 2019 actuals and planned 2024. The main contributor to this planned increase in costs is MUAC (+22.1%, or +7.7ME2017 overall). Costs remained roughly stable during 2020 and 2021 compared to 2019 actual costs, with no substantial decreases in reaction to COVID-19.

- For LVNL, total costs are planned to decrease by -0.9%.
- The planned decrease in costs is mainly driven by a reduction in other operating costs (-30.2%, or -13.3ME2017 between 2019 and 2024). According to the information in annex A of the performance plan, the reduction is explained by the completion of several major investments programmes followed by a reduction of temporary staff and expertise and project related research and development costs, which are reported as other operating costs.
- A significant increase in depreciation costs (+87.6%, or +11.5ME2017 between 2019 and 2024) reflects mainly the entry into operation of the new iCAS system, the new Polaris building, the new voice communication system, and centralised base (remote tower operation).

MUAC shows a cost increase (+22.1%) mainly due to staff costs. The main reasons are: the indexation of remunerations, the integration of costs for tax compensation, the additional ab initio intake, and the "General Condition of Employment package" negotiated with ATCOs in 2018 aiming at providing increased capacity through the increased ATCO working time. The MUAC costs have been slightly revised downwards for 2023 and 2024 compared to the performance plan submitted in November 2021, as a result of the revision of Belgium-Luxembourg en route determined costs. The effect on annual determined costs for the Netherlands is marginal (less than 200K€ per annum).

KNMI (MET) costs increase by +17.2% between 2019 and 2024 mainly due to an increase in staff costs (additional staff and higher costs of staff) and other operating costs reflecting additional service provision and improved performance. The NSA costs are planned to decrease slightly (-2.6%) reflecting a reduction in Eurocontrol costs while the NSA supervision costs are planned to increase over RP3.

4.3.4 PRB Key Points ✓

- Minor changes since the FABEC draft RP3 performance plan submitted in November 2021:
- The Netherlands includes adjustments to the cost baselines related to the MUAC cost base. The adjustments seem justified and have been corrected to avoid double counting compared to the performance plan submitted in November 2021
 - Between 2019 and 2024, the costs are planned to increase slightly by +3.2% mainly due to the increase of MUAC costs (+22.1%, or +7.7ME2017).
 - LVNL planned a decrease in costs, due to a decrease in other operating costs.

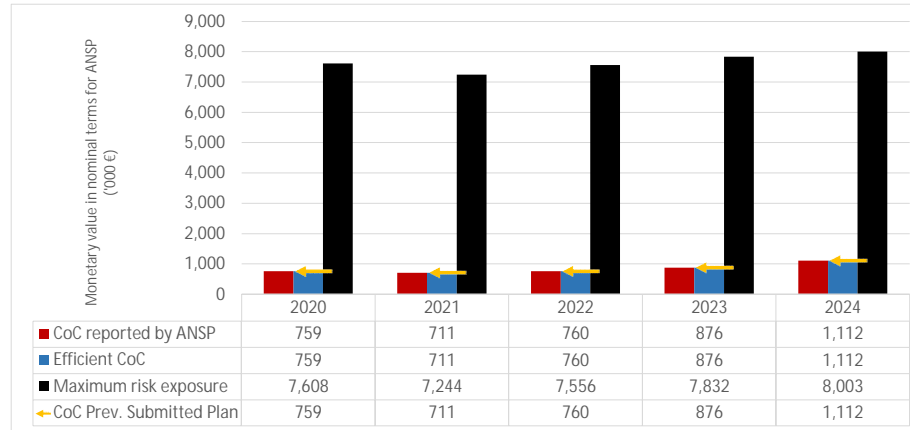
4.3.A Cost of capital

LVNL - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	172,918	164,641	171,717	178,005	181,888
Monetary value of Return on Equity	0.0	0.0	0.0	0.0	0.0
Ratio RoE/DC (%)	0.0%	0.0%	0.0%	0.0%	0.0%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debts	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Capital structure (% debt)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
WACC	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%

Is the interest on debts in line with the market? Yes

- All of LVNL's investments are financed with long term loans with fixed interest rates for the term of the loan concerned. LVNL is entitled to national treasury banking. While LVNL's equity capital is used to carry the financial consequences of the ANSPs share of traffic and cost risk, it is not used to finance LVNL's assets.
- The interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.
- As equity is not used to finance LVNL's assets, a return on equity of 0% has been reported in the performance plan. The efficient WACC has been calculated based on option 2.
- Adjustments to the proposed cost of capital do not seem to be necessary over RP3.

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	190,495	219,254	273,087	300,237	312,756
Net current assets	0	0	0	0	0
Adjustments total assets	28,759	53,833	27,150	12,520	4,327
Total asset base	219,254	273,087	300,237	312,756	317,083

- The fixed asset base is planned to significantly increase over RP3. This is in line with the increase in investments described in section 3.5 of this document.
- The RAB does not include net current assets.
- The adjustments to the RAB include the sum of depreciation of assets, new investments, and if applicable useful life and impairment effects.
- The total asset base will increase over RP3, due to the increase in fixed asset base.

4.3.A.5 PRB Key Points

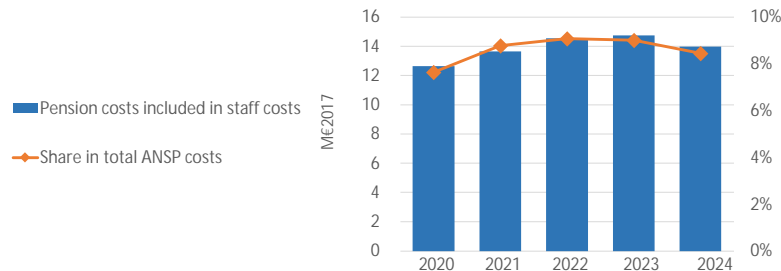


- No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- The cost of capital does not present major issues over RP3.

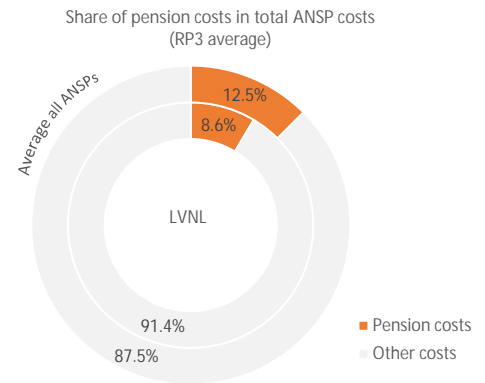
4.3.B Pensions

LVNL - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



Pension costs included in staff costs	M€2017	12.6	13.7	14.5	14.7	14.0
Year on year variation	% change		+8.0%	+6.5%	+1.4%	-5.2%
Share in total ANSP costs	%	7.6%	8.8%	9.1%	9.0%	8.4%
Year on year variation	p.p.		1.1p.p.	0.3p.p.	-0.1p.p.	-0.6p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight increase**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **n/a**

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **Yes**

LVNL is obliged by law to participate in the "Pensioenfonds ABP". Employees receive a defined benefit, but ABP maintains liability for any shortfalls and LVNL is only liable to make contributions as specified by ABP. Since ABP has difficulties meeting the mandatory coverage ratio (assets at least 104% of liabilities), the premium is expected to increase from 20.73% in 2020 to 22.95% in 2022, remain in place for two years, and then decrease.

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **n/a**

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

In 2020, the staff costs were computed based on the pension premium contribution of 20.73%. For the rest of RP3, the pension costs included in the staff costs increase due to the expected increase in the pension premium contribution.

"There is a (cost exempt) risk that structural changes in the pension scheme may occur during RP3 because of the pension discussion currently held in the Netherlands. A new study to the necessary coverage ratio of pension funds in the Netherlands addresses the need for an improved coverage ratio which may lead to increased pension premiums. Besides this study the government and the social partners are negotiating the fundamentals of the current pension scheme. For example new retirement age categories are now discussed upon. This may also lead to changes during RP3."

4.3.B.4 PRB Key Points



No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- No major issues identified.

4.3.C Methodology for cost allocation between ER and TRM

Netherlands

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- The Netherlands did not mention changing the cost allocation methodology with respect to RP2.
- LVNL allocates in its cost allocation model the costs of air navigation services to traffic above flight level 30 (~3,000 feet) and outside 18 kilometres (12 nM) from the LVNL controlled airports to the en route charging zone on the basis of the operational requirements. The costs for air navigation services below flight level 30 and within 18 kilometres from the LVNL controlled airports are allocated to the terminal charging zone.
- For the main ANSP, the Netherlands calculated that about 69% of the total costs are attributed to en route, MET costs are allocated 82% en route, 18% terminal, and NSA costs are fully allocated to en route.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

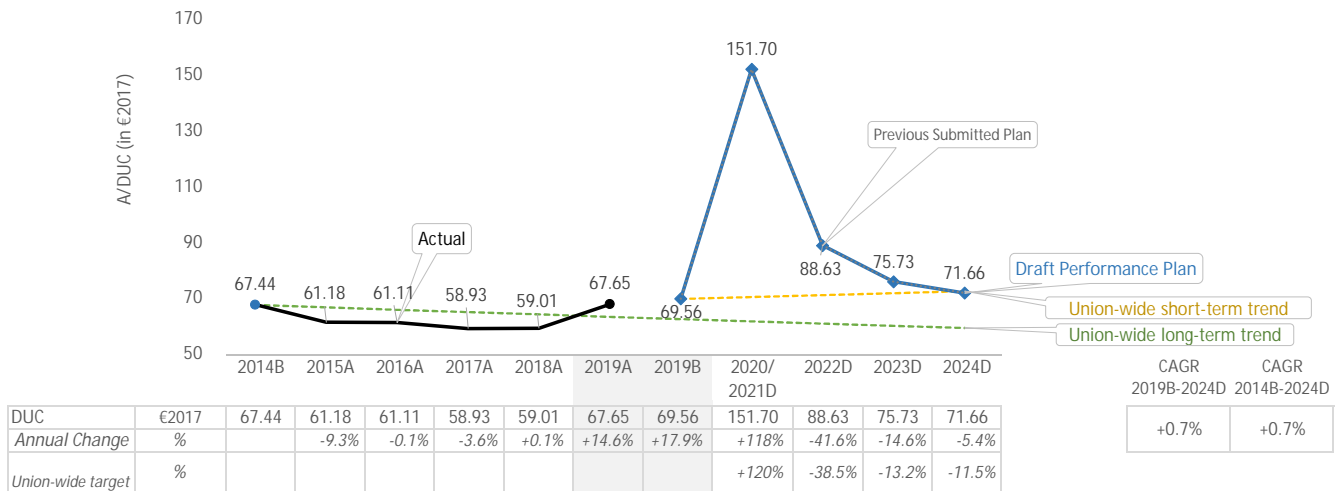


- No changes since the previous FABEC draft RP3 performance plan submitted in November 2021:
- The Netherlands did not mention changing the cost allocation methodology with respect to RP2.
 - No major issues identified.

4.4 Determined unit costs (DUC)

Netherlands - En route CZ

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency

	Performance Plan	Union-wide	Difference	
✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	+0.7%	+1.0%	-0.3p.p.
✗ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	+0.7%	-1.3%	+2.0p.p.
	Performance Plan	Average comparator group	Difference	
✓ DUC level consistency	2019 baseline	69.56	78.09	-10.9%

- The DUC is planned to increase on average by +0.7% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to increase on average by +0.7% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -10.9% lower than the average of the comparator group.
- The Netherlands presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs

n/a

4.4.5 PRB Key Points

✓

Minor changes compared to the FABEC draft RP3 performance plan submitted in November 2021, not affecting the assessment:

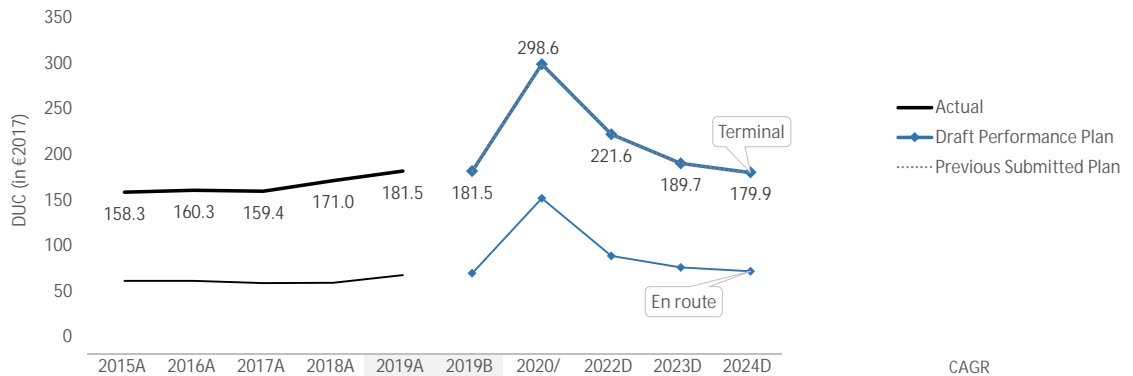
- The Netherlands is consistent with the RP3 DUC trend in terms of average reduction.
- The Netherlands is not consistent with the DUC long-term Union-wide trend.
- The Netherlands is consistent with the average DUC baseline of the comparator group.

- The Netherlands presents justifications for a deviation from the cost-efficiency trends to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.5 Terminal

Netherlands

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	158.3	160.3	159.4	171.0	181.5	181.5	298.6	221.6	189.7	179.9	-0.2%
Annual Change	%		+1.3%	-0.6%	+7.3%	+6.2%	+6.2%	+64%	-25.8%	-14.4%	-5.2%	
DUC - En route	€2017	61.2	61.1	58.9	59.0	67.7	69.6	151.7	88.6	75.7	71.7	+0.7%
Annual Change	%		-0.1%	-3.6%	+0.1%	+14.6%	+17.9%	+118%	-41.6%	-14.6%	-5.4%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Amsterdam/ Schiphol (EHAM)	GROUP I	138.9	137.7	-0.9%	176.0	173.5	-1.4%
Maastricht-Aachen (EHBK)	GROUP IV	659.2	515.6	-21.8%	807.8	381.6	-52.8%
Groningen (EHGG)	GROUP IV	659.2	1312.8	+99.1%	807.8	2029.7	+151.3%
Rotterdam (EHRD)	GROUP IV	659.2	744.0	+12.1%	807.8	946.9	+17.1%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

- The average unit cost of Amsterdam Schiphol, the main airport, is slightly lower than the comparator group median over RP3.
- With respect to other airports included in the Netherlands terminal charging zone, it is noticeable that the RP2 average unit cost of Groningen airport was significantly higher than its comparator group median (+99.1%). This gap is expected to further increase to +151.3% over RP3.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

The 2019 traffic and cost baselines are in line with the actual values as presented in the terminal reporting tables.

Traffic forecasts (terminal)

Review of the PP traffic forecast

The terminal service units forecast in the performance plan is consistent with the STATFOR October 2021 base forecast for all years except for 2022.

Determined costs (terminal)

Review of 2020/2021 determined costs
 2020 determined vs actual
 2021 determined vs actual

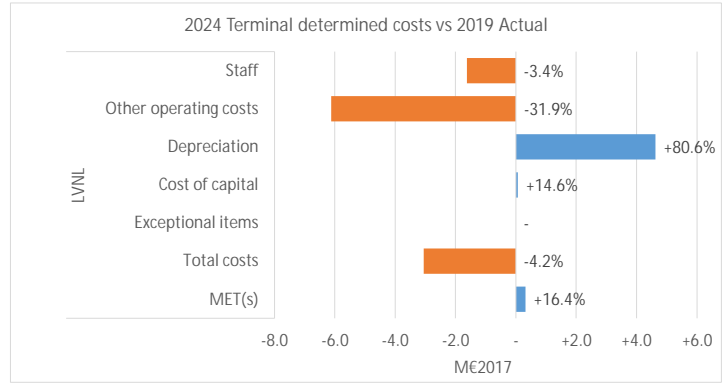
M€2017	%
+0.0	+0.0%
+2.5	+4.0%

Cost elements - LVNL (terminal)

- ⓘ Investments (see details in 3.5)
- ⓘ Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ✓ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



- The share of terminal pension costs (31%) is slightly higher than the share of terminal total costs (29%).
- The WACC and its parameters are different from the ones applied for en route. No justification has been provided.
- Changes in the different cost items and for different entities follow a similar pattern as for en route.
- For LVNL, the terminal costs are planned to decrease (-4.2%, or -3.1M€2017) between 2019 and 2024, mainly due to the completion of several major investments programmes and reduction of associated other operating costs. It is noticeable that LVNL terminal staff costs will also be lower in 2024 (-3.4%, or -1.6M€2017) even though a higher pension premium contribution of 21.74% is used to compute terminal pension costs compared to 2019 (14.76%).

4.5.4 PRB Key Points ✓

- Minor changes since the FABEC draft RP3 performance plan submitted in November 2021:
- The terminal RP3 DUC trend is -0.2%, which is better than the en route RP3 DUC trend of +0.7%.
 - The terminal RP3 DUC trend is -0.2%, which is better than the terminal RP2 DUC trend of +3.5%.
 - The average unit cost of Amsterdam Schiphol, the main airport, is slightly lower than the comparator group median over RP3.
 - The Netherlands used the STATFOR October 2021 base forecast, with the exception of 2022.
 - Terminal costs decrease over the period, mainly due to a decrease in other operating costs.

PRB Assessment

SWITZERLAND

Draft Performance Plan

Context and scope

Switzerland

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6125, F6126, F6129, F5729, F5730, F5731, F5732, F5721, F5722, F5723, F5724, F5725, F5726, F5786

Relative weight compared to the SES area (2019):

 % Flight-hours vs SES 1.8%
 % Serv. Units vs SES 1.6%
 % Costs vs SES 3.1%

Scope

FAB: FABEC

 ANSPs: Skyguide
 Office Fédéral de la Météorologie et de Climatologie
 MétéoSuisse

 Other entities (as per Article 1 (2) last para. of Regulation 2019/317): Federal Office for Civil Aviation (FOCA), Safety Division
 Infrastructure
 Eurocontrol

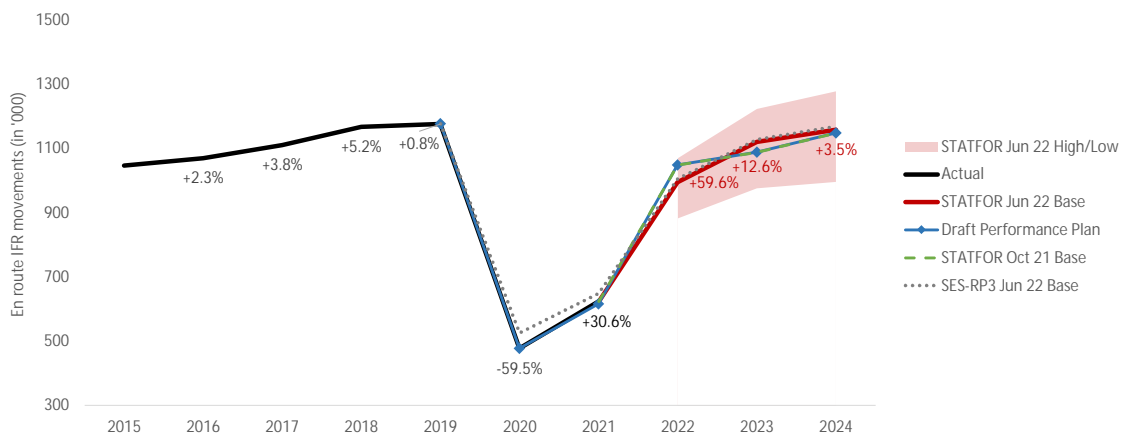
ATM
 MET

 Competent authority
 NM, CRCO

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Switzerland	n/a	No	No	No	
Terminal (TRM)	Switzerland - TCZ	2	No	No	No	
Changes in the CZs from RP2		Yes	<p>The allocation key of MET costs for en route and terminal has been changed, having thus an impact on the cost level. As reflected in the performance plan and its Annex A. Additionally in the airspace users consultation material, Switzerland explains that regarding the evolution from 2019 to 2020 per cost nature, the methodology changed in this period, meaning that comparing both years between cost natures is a bit difficult because Skyguide changed the way they display the cost nature (in addition to the effect of the change in the allocation key for MET mentioned above).</p>			

Comparator group: Group E Other States in the comparator group: Austria, Belgium, Netherlands
 Currency: CHF Exchange rate: 1.11124

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
skyguide	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

skyguide	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Switzerland should be approved.

- The EoS safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
ANSP target for horizontal en route flight efficiency (KEA) (%)	4.78%	4.59%	4.28%	4.28%	4.28%
Previous submitted PP	4.78%	4.59%	4.28%	4.28%	4.28%

PRB assessment

The PRB concludes that the environment targets proposed by FABEC for Switzerland should be approved.

- Switzerland's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.47	0.12	0.19	0.19	0.19
National target for terminal and airport ANS ATFM arrival delay per flight (min)	1.94	1.03	1.15	1.28	1.42
Previous submitted PP (en route)	0.47	0.12	0.19	0.19	0.19
Previous submitted PP (terminal)	1.94	1.03	1.15	1.28	1.42

PRB assessment

The PRB concludes that the capacity breakdown values proposed by Switzerland should be approved.

- There is a discrepancy in the performance plan between capacity profile plans, planned number of ATCO FTEs, and the proposed capacity enhancement measure.
- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk. There is a trigger mechanism defined by the performance plan in the terminal capacity incentive scheme which practically renders the incentive scheme, a bonus only scheme.

4. Cost-efficiency 

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	203.64	103.11	93.10	86.04	-0.5%	-1.2%
Target for determined unit cost (DUC) (€2017) - Terminal	777.80	380.28	343.36	330.10	+2.7%	n/a
<i>Previous submitted PP (en route)</i>	<i>203.64</i>	<i>103.11</i>	<i>93.10</i>	<i>86.04</i>	<i>-0.5%</i>	<i>-1.2%</i>
<i>Previous submitted PP (terminal)</i>	<i>777.80</i>	<i>380.28</i>	<i>343.36</i>	<i>330.10</i>	<i>+2.7%</i>	<i>n/a</i>

PRB assessment

The cost-efficiency targets of Switzerland have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 have been slightly revised as follows:

The PRB concludes that the cost-efficiency targets proposed by Switzerland should be approved.

- Switzerland is consistent with the RP3 DUC trend in terms of average reduction.
- Switzerland is not consistent with the long-term Union-wide DUC trend. However, the difference is negligible. Therefore, the trend can be considered consistent with the Union-wide one.
- Switzerland is not consistent with the average DUC baseline of the comparator group.

5. PRB recommendations

ENVIRONMENT

- Switzerland should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Switzerland should revise the incentive schemes so that they have a material impact on the revenues.
- Switzerland should ensure that the terminal capacity incentive scheme does not include a trigger mechanism which renders the incentive scheme a bonus only scheme, and that the terminal incentive scheme is compliant with Implementing Regulation (EU) 2019/317.

COST-EFFICIENCY

- Switzerland should detail the changes in the cost allocation.
- Switzerland should ensure that the overspent determined costs related to the RP2 investments are not recovered during RP3.

6. PRB recommendations from the performance plans submitted in November 2021

ENVIRONMENT

- Switzerland should ensure it implements all relevant project outlined in the June 2021 ERNIP.

CAPACITY

- Switzerland should revise the incentive schemes so that they have a material impact on the revenues.
- Switzerland should ensure that the terminal capacity incentive scheme does not include a trigger mechanism which renders the incentive scheme a bonus only scheme, and that the terminal incentive scheme is compliant with Implementing Regulation (EU) 2019/317.

COST-EFFICIENCY

- Switzerland should detail the changes in the cost allocation.
- Switzerland should ensure that the overspent determined costs related to the RP2 investments are not recovered during RP3.
- Switzerland should detail how the capitalisation rules applied are impacting the reimbursement of potential underspent RP3 determined costs related to investments.

SWITZERLAND

Safety KPA

1.1 Summary of safety key data and assessment results

Switzerland

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2023.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan describes the measures established at ANSP, CAA, and FABEC level. Considering the current safety levels, the measures are considered sufficient and adequate to improve and further ensure the required safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan describes in detail the FABEC approach to address the impact of changes to the ATM functional system on interdependencies and trade-offs with safety at the ANSP and CAA level. It is stated that safety constitutes the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The approach provides confidence that the implementation of changes to ATM functional system will not deteriorate safety levels.

1.1.4 Change Management

Switzerland describes the change management practices are defined by Skyguide. Considering the level of details provided in the performance plan, these practices, if compliant with Commission Implementing Regulation (EU) 2017/373, should be sufficient to control impacts on safety.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Switzerland should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- The ongoing cooperation at FAB level aims to improve the overall safety management approach by identifying best practices and harmonising procedures.

1.2 Targets for EoSM for ANSPs and Measures

Switzerland

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
Skyguide	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	C	C	C	C	D	D	✓	
	Safety assurance	C	C	C	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained in 2023. In 2020, Switzerland has already met the RP3 safety targets in four out of five management objectives. Only safety risk management needs to be improved from level C to level D.

The performance plan describes the specific measures applied at the levels of the ANSP, the CAA, and the FABEC.

At the ANSP level, the following measures are planned to be implemented:

- Integration of all risk management activities together with business continuity and crisis management;
- Implementation of the RMIS (Risk Management Information System) combining all risk information in one single, cloud-based IT tool;
- Development of external supplier monitoring activities;
- Conduct of a safety culture survey together with other ANSPs;
- Legally anchoring of external Just Culture in the Swiss law;
- Application of data science to systematically learn from safety II data; and
- Detection and management of interdependencies of complex operations.

At the level of Competent Authority, the measures derived from compliance with Commission Implementing Regulation (EU) 2017/373, applicable to EoSM improvements are regularly reviewed and verified.

Furthermore, FABEC Authorities established a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to review the FABEC ANSPs' performance and to jointly determine if specific actions are necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach for all seven FABEC ANSPs.

Considering current safety levels, the safety roadmap described in the performance plan gives confidence that the ANSP will achieve the safety levels at the end of RP3.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan confirms that changes will be required to achieve targets for other KPAs and that improvements under the safety KPA may affect other KPAs. The performance plan underlines that safety remains the highest priority and cannot be compromised by adverse interdependencies with other key performance areas. The impact of changes to the ATM functional system, including changes to the system needed to improve other KPAs, is assessed by the ANSPs through safety procedures compliant with Commission Implementing Regulation (EU) 2017/373, which ensures that safety levels are not compromised. Changes are also presented for approval by the Competent Authority to ensure that there are no unacceptable safety implications.

FABEC ANSPs have defined additional (K)PIs to monitor their performance (on all KPAs) in addition to those specified by Commission Implementing Regulation (EU) 2019/317.

Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (safety, security, quality, environment). Indicators, issues, and possible trade-offs are discussed, explained and addressed by board members under the leadership of the ANSPs' management.

The approach provides confidence that the changes introduced to reach targets on other KPAs will not deteriorate safety levels.

1.3.2 Change Management Practices

Skyguide applies an innovative and flexible change management framework, applying Lean Portfolio management techniques for the selection and approval of changes, and a hybrid approach to individual change delivery. Skyguide's change management framework sits aside and integrates with various management processes, with special focus on safety, but also strategy, finance, and compliance.

All described processes, if compliant with the Commission Implementing Regulation (EU) 2017/373, provide assurance that the new implementation will be conducted in a manner that minimises any negative impact on the network performance.

SWITZERLAND

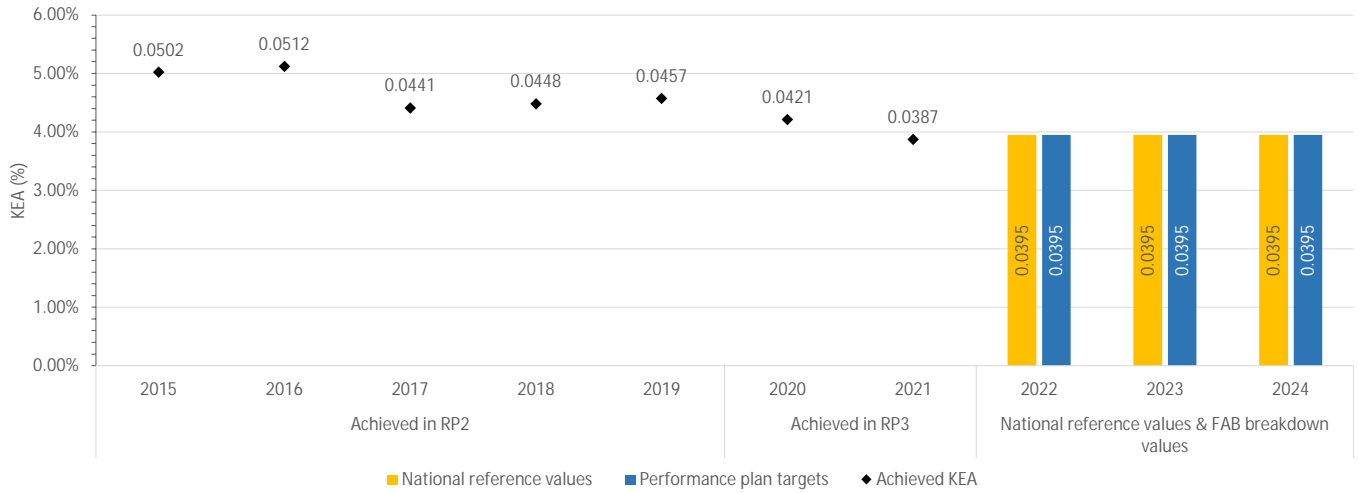
Environment KPA

2.1 Summary of Key Data and Assessment Results

Switzerland

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	4.62%	3.95%	3.95%	3.95%	3.95%
National reference values	n/a	3.95%	3.95%	3.95%	3.95%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.2.2 PRB Conclusions



The PRB concludes that the environment targets proposed by FABEC for Switzerland should be approved.

- Switzerland's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- Switzerland should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Switzerland

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
A free route airspace (FRA) project that will allow airspace users to plan and fly direct routes is in progress and should become effective in 2022. An ATS route network is still in place in lower airspace (GND to FL195) and upper airspace (FL195 to FL660).		3.2.1(a)	Page 69
Major ERNIP Recommended Measures:	6	Reference in PP	Reference in ERNIP
Measure included within performance plan?		n/a	Page 67
PBN transition plan	✗	Implemented	Page 104
Deletion of operational flight level	✓	Implemented	Page 127
Flight Level Orientation/ FLOS change Switzerland	✓	Implemented	Page 113
RAD suspension Switzerland	✓	3.2.1.(a)	Page 195
Free Route Airspace Switzerland - FRACH	✓	n/a	Page 196
Cross-border FRA CHE/ DEU	✗		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Switzerland achieved a KEA of 4.21% in 2020. In 2021, Switzerland reached a KEA of 3.87% which means it achieved the 2021 target of 3.95% in its performance plan.

Switzerland believes that free route airspace (FRA) implementation cannot improve performance given most of the inefficiency is at the interfaces over which Skyguide has little control. While this is the case, Skyguide is able to influence this by cooperating with its neighbours and initiating cross-border FRA (CB FRA) and collaborative airspace design to improve the interfaces. Switzerland committed to offering FRA in 2022, but did not include cross-border FRA operations.

Other measures planned include the use of local and sub-regional airspace management support system (LARA) to manage military airspace and arrival manager (AMAN) extended to the en route airspace that should improve horizontal and vertical flight efficiency. Switzerland plans to use an air traffic flow control management (ATFCM) optimisation tool to enable planning and flying more direct routes and optimal flight levels.

2.3.1 Annex IV 2.1(f): Measures for achievement of targets

Does Switzerland plan for an environmental incentive scheme?	✗
The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.	

SWITZERLAND

Capacity KPA

3.1 Summary of capacity key data and assessment results

Switzerland

3.1.1 En route ATFM delay

The ANSP breakdown values are consistent with the ANSP reference values and fall within the range of the delay forecast in all remaining years of RP3. The capacity plans indicate that both Geneva and Zürich ACCs are expected to have a reasonable capacity surplus in all remaining years of RP3. There might be an inconsistency in the performance plan between capacity profile plans, planned number of ATCO FTEs, and the proposed capacity enhancement measures.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Switzerland includes two airports in the performance plan. The proposed targets are set lower than in RP2, however, the trend of the targets is increasing from 2021 until 2024. Targets represent an improvement to the average past performance.

The performance of both airports is expected to be worse than that of the group of similar airports.

The performance plan includes several measures to improve airport capacity, which are expected to enable the achievement of the targets.

3.1.3 Incentives

En route:

Switzerland has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.

In addition to the national incentive scheme, a FAB-level incentive scheme also applies.

The maximum bonus and penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

Switzerland has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.

The maximum bonus and penalty is set at 0.5%. However, a trigger mechanism is set at 1.94 minutes per arrival, essentially rendering the incentive scheme, a bonus only scheme.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, plus the trigger mechanism practically excludes the possibility of inducing penalties, thus the incentive scheme does not have a material impact on the revenue at risk.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

The actual CAPEX for RP2 was 10% higher than the planned and the amount overspent was 20M€. In terms of depreciation and cost of capital, Switzerland overspent 8.3M€. In 2021 Switzerland noted in Annex C of the performance plan that the overspending was prefunded and that part of depreciation overspent in RP2 will not be charged, while another part will be included as additional depreciation in RP3.

Switzerland is expected to have a capacity surplus throughout RP3.

One major new investments targeting en route capacity is planned for implementation during RP3. Major investments are not linked to PCP/CP1 ATM Functionalities, although based on the investment descriptions they will contribute to achieving some of the AFs.

Investments have been slightly delayed but are being implemented in phases with intermediate capacity benefits. Investments contribute to resilience, scalability, and flexibility in line with European ATM evolution.

3.1.5 PRB conclusions

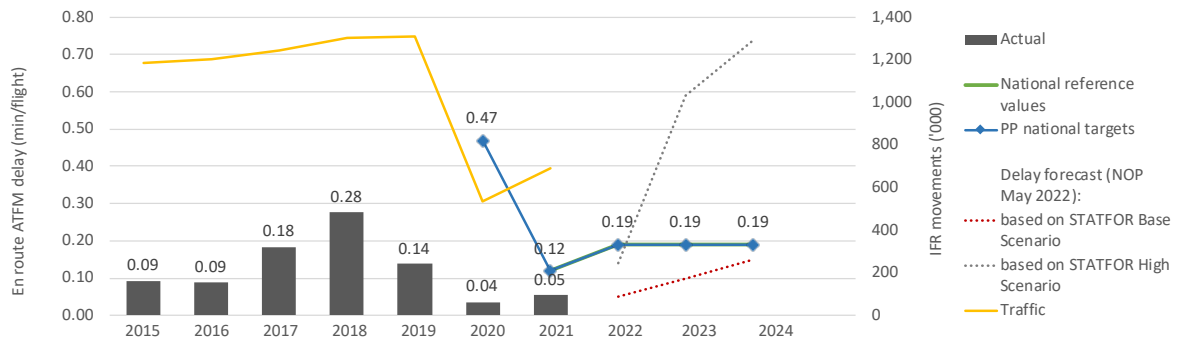
The PRB concludes that the capacity breakdown values proposed by Switzerland should be approved.

- There is a discrepancy in the performance plan between capacity profile plans, planned number of ATCO FTEs, and the proposed capacity enhancement measure.
- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk. There is a trigger mechanism defined by the performance plan in the terminal capacity incentive scheme which practically renders the incentive scheme, a bonus only scheme.
- Switzerland should revise the incentive schemes so that they have a material impact on the revenues.
- Switzerland should ensure that the terminal capacity incentive scheme does not include a trigger mechanism which renders the incentive scheme a bonus only scheme, and that the terminal incentive scheme is compliant with Implementing Regulation (EU) 2019/317.

3.2 En route ATFM delay per flight

Switzerland - Skyguide

3.2.1 Overview of en route ATFM delay per flight ✓



Traffic variation	+2%	+1.8%	+3.1%	+4.9%	+0.5%	-59.2%	+29.5%			
Actual delay/flight	0.09	0.09	0.18	0.28	0.14	0.04	0.05			
National reference values						n/a	0.12	0.19	0.19	0.19
PP national targets						0.47	0.12	0.19	0.19	0.19
Delay forecast*:										
Based on STATFOR High Scenario						-	0.14	0.59	0.74	
Based on STATFOR Base Scenario						-	0.05	0.10	0.15	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✓

Assessment of capacity enhancement measures and review against NOP

During RP2 and the beginning of RP3, Switzerland experienced capacity constraints mostly related to ATM capacity, staffing, and weather, registering increasing delays in 2017 and 2018. Actual capacity targets are in line with the reference values following the scenario 1 delay forecast.

The performance plan contains the following capacity enhancement measures:

- Virtual Centre program, aiming at a flexible service-oriented approach (implemented during RP3 but will bring benefit as from RP4 only),
- Free route airspace CH,
- Improved ATFCM/ASM CDM procedures,
- Crystal TWR/APP – Traffic and complexity prediction tool,
- Recruitment as necessary to maintain the required staffing levels,
- Implementation of the new CPDLC human machine interface (HMI),
- flexible rostering, and
- CAPAN Study to improve sectorisation and capacity of the Switzerland airspace.

The ATCO numbers will decrease below 2019 levels. There has been a slight increase in Geneva ACC but a large decrease in Zurich ACC compared to 2019. The performance plan provides that the numbers will change according to the actual traffic trends and that the numbers for each year could be different. Switzerland, as all FABEC Member States, states that there is no legal obligation to provide the ATCO numbers and that the information is socially sensitive.

Only a high-level description of the measures is provided in the FABEC performance plan. Additionally, Switzerland complements all the measures with notes that all implementations including ATCO recruitment is highly dependable on the traffic recovery. Furthermore, the performance plan provides that if the traffic reaches high traffic forecast, the delays will increase and the targets will be difficult to achieve.

ATCO Planning (FTEs)

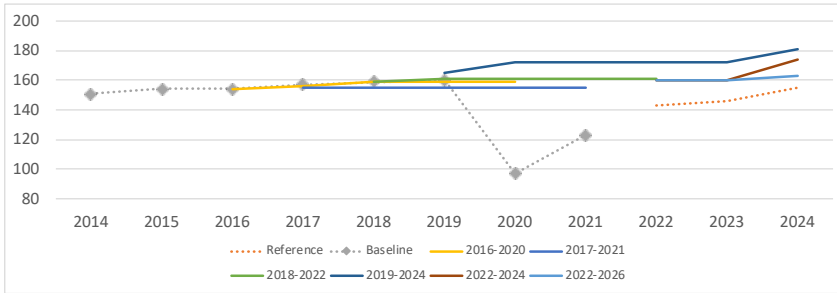
		2018A	2019A	2020A	2021A	2022P	2023P	2024P
Geneva ACC (LSAG)	Additional ATCOs in OPS to start working in the OPS room	0	5	10	6	13	8	10
	ATCOs in OPS to stop working in the OPS room	0	8	7	5	6	13	14
	ATCOs in OPS to be operational at year-end	121	118	121	122	129	124	120
Zurich ACC (LSAZ)	Additional ATCOs in OPS to start working in the OPS room	0	7	4	6	10	10	6
	ATCOs in OPS to stop working in the OPS room	0	4	12	6	10	11	9
	ATCOs in OPS to be operational at year-end	118	121	113	113	113	112	109
Total - Skyguide (en route)	Additional ATCOs in OPS to start working in the OPS room	0	12	14	12	23	18	16
	ATCOs in OPS to stop working in the OPS room	0	12	19	11	16	24	23
	ATCOs in OPS to be operational at year-end	239	239	234	235	242	236	229

2024 (end) - 2020 (beg.)	
	+2
	-12
	-10

3.2.3 Review of previous and existing capacity profile plans per ACC



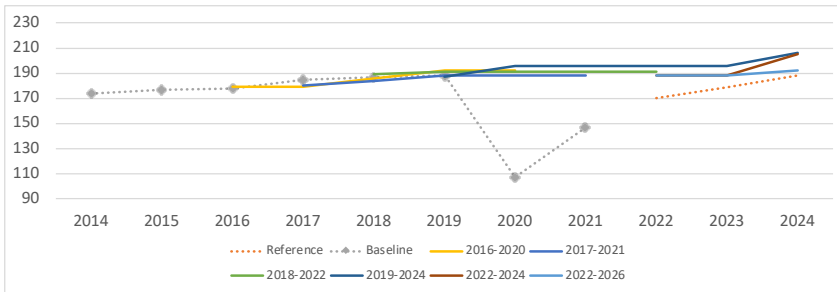
Geneva ACC (LSAG)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									143	146	155
Baseline	151	154	154	157	159	160	97	123			
2016-2020			154	156	159	159	159				
2017-2021				155	155	155	155	155			
2018-2022					159	161	161	161	161		
2019-2024						165	172	172	172	172	181
2022-2024									160	160	174
2022-2026									160	160	163
Latest vs Reference									12%	10%	5%

- Historical data shows a minor increase of the baseline capacity profiles in RP2. The planned profiles were mostly consistent or lower than the baseline values.
- The latest planned capacity plans show an average annual growth of 0.9%, which is planned as a step increase in 2024. The planned profiles indicate a reasonable capacity surplus in all remaining years of RP3.
- Based on the planned number of ATCO FTEs, the increase in capacity profiles may be due exclusively to capacity enhancement measures, or there may be a minor inconsistency between the planned number of ATCO FTEs, capacity profile plans, and the capacity enhancement measures.

Zurich ACC (LSAZ)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									170	179	188
Baseline	174	177	178	185	187	188	107	147			
2016-2020			179	179	186	192	192				
2017-2021				180	184	188	188	188			
2018-2022					189	191	191	191	191		
2019-2024						187	196	196	196	196	206
2022-2024									188	188	205
2022-2026									188	188	192
Latest vs Reference									11%	5%	2%

- Historical data shows a 7.8% growth in RP2 baseline profiles. The planned profiles were largely in line with the baseline values in RP2. Zurich ACC managed to maintain the capacity without significant gaps resulting in higher delays only in 2018 due to the major increase of traffic levels and weather situation.
- The latest planned capacity plans show an average annual growth of 1.1%, which is planned as a step increase in 2024. The planned profiles indicate a reasonable capacity surplus in all remaining years of RP3.
- Based on the planned number of ATCO FTEs, the increase in capacity profiles may be due exclusively to capacity enhancement measures, or there may be a minor inconsistency between the planned number of ATCO FTEs, capacity profile plans, and capacity enhancement measures.

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events



Review of the planned impact of special events in some years of RP3

The NOP foresees an impact of FRA implementation during 2023. Neither the NOP nor the performance plan provide details that could be used to assess the scale of impact or necessity of measures. The project is coordinated with the NM. Other projects are not seen as special events.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps 🔍

a)	Performance plan contains additional measures compared to the NOP in order to close the capacity gap? The performance plan provides high-level references to some measures which cannot be directly identified in the NOP. The level of details however makes it difficult to rule out that the measures are not part of the ones included in the NOP.	🔍
b)	Measures proposed by the NM to enhance capacity are planned and described in the performance plan? The performance plan does not contain adequate information to assess the above mentioned statement.	🔍
c)	The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described? n/a	n/a
d)	The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap? The performance plan does not contain adequate information to assess the above mentioned statement.	✖
e)	Staffing plans adequately address the capacity gap closure (Increasing number of ATCOs is aligned to capacity requirements)? The performance plan contains the information that ATCO recruitment plan is envisaged, with ATCO recruitment numbers during the RP3. The performance plan provides that the final numbers are highly dependant on the traffic levels.	🔍
f)	The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity? The performance plan provides information on the rostering measures reflecting actual traffic trends and the NM plan. The level of details does not allow to make the assessment of the measure.	🔍
g)	The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome? The performance plan identifies no limitations of the ATM systems and infrastructure which would negatively affect capacity. Some upgrades and renewals are envisaged by the investment plan. New Virtual Center to bring benefits in RP4.	✅

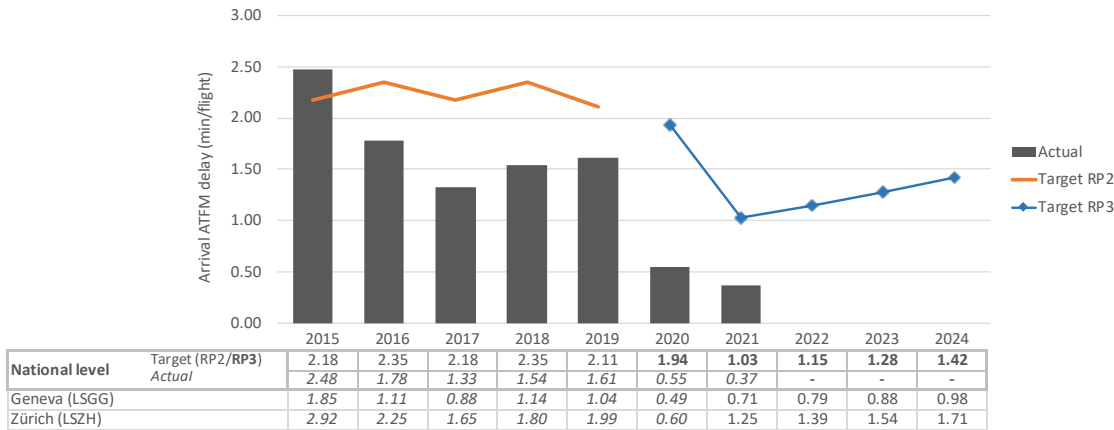
3.2.6 PRB Key Points ✅

- The ANSP breakdown values are consistent with the ANSP reference values and fall within the range of the delay forecast in all remaining years of RP3.
- The capacity plans indicate that both Geneva and Zürich ACCs are expected to have a reasonable capacity surplus in all remaining years of RP3.
- There might be an inconsistency in the performance plan between capacity profile plans, planned number of ATCO FTEs, and the proposed capacity enhancement measures.

3.3. Arrival ATFM delay per flight

Switzerland

3.3.1 Overview of arrival ATFM delay per flight

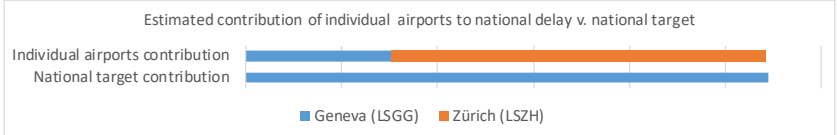


3.3.2 Review of targets and comparison with level and trend of past performance during RP2

Switzerland presents a target for RP3 at national level that starts at 1.03 minutes per arrival in 2021 and then increases linearly until reaching 1.42 minutes per arrival in 2024. These targets represent significant improvements with respect to RP2 targets and the average observed RP2 performance (1.75 minutes per arrival). Switzerland has used the STATFOR October 2021 base forecast. This forecast estimates a CAGR (in IFR movements) for the 2019-2024 period at the TCZ of -0.7%. Several measures are planned to improve the delay situation along RP3, the main one being the recruitment of ATCOs at both approach services.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Geneva (LSGG)	0.84
Zürich (LSZH)	1.47
National Target	1.22



Zurich is the main contributor to the national delays, with higher target and bigger traffic share than Geneva. Assuming similar traffic and distribution than in RP2, the contribution of both airports according to the local targets coincides with the performance associated to the national target.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Geneva (LSGG)	GROUP III	0.12	1.20	+1.08	0.84	+0.36
Zürich (LSZH)	GROUP I	0.65	2.12	+1.47	1.47	+0.82

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The performance of both Geneva and Zurich in terms of arrival ATFM delay was considerably worse than the performance observed at similar airports. The new targets are an improvement, but still represent higher delays than similar airports during RP2.

3.3.5 PRB Key Points

- Switzerland includes two airports in the performance plan. The proposed targets are set lower than in RP2, however, the trend of the targets is increasing from 2021 until 2024. Targets represent an improvement to the average past performance.
- The performance of both airports is expected to be worse than that of the group of similar airports.
- The performance plan includes several measures to improve airport capacity, which are expected to enable the achievement of the targets.

3.4 Capacity Incentive schemes

Switzerland

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±23.0%	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.19	0.19	0.19
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.19	0.19	0.19
Pivot values for RP3			0.13	0.13	0.13

Threshold and pivot value review

The pivot value is the reference value from the NOP, modulated according to CRSTMP. A dead band of +/- 23% is applied around modulated pivot value before any incentives apply. The maximum penalties or bonuses apply at +/- 0.05 minutes from the pivot value.

Modulation review

The scope of the en route incentive scheme is modulated according to the ATFM delay codes C,R,S,T,M & P. The target is based on the average ratio of attributed CRSTMP delays during RP2, circa 65% of the total en route ATFM delays. As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could affect the financial incentives.

Review of financial advantages/disadvantages

A FAB-wide criteria is applied to determine if ANSPs are initially liable for bonuses or penalties, based on the overall FAB performance. The maximum potential bonus / penalty is fixed at 0.5% of determined costs.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±5.0%	0.500%	0.500%
	✓	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.040	±0.045	±0.045
Performance Plan targets			1.15	1.28	1.42
Pivot values for RP3			0.08	0.09	0.09

Threshold and pivot value review

The terminal incentive scheme includes a dead band of 5% of the CRSTMP pivot value (dead band: 0.076 - 0.084 minutes per arrival). The 5% dead band might be too small to allow for small variations in the performance with no associated bonuses/penalties.

The pivot values are CRSTMP modulated and are in line with the past CRSTMP share and the national targets.

Modulation review

Switzerland has chosen to modulate the pivot values according to CRSTMP causes. The chosen pivot values correspond to a similar share of CRSTMP delays as reported during RP2 (approx 6.5%), applied to the new national targets (all causes) for RP3.

Review of financial advantages/disadvantages

The scheme is symmetric. The bonus / penalty is only 0.5%.

In addition, Switzerland adds a trigger for the application of the incentives, set at a national performance of 1.94 minutes per arrival. This means that a bonus is computed only if the total arrival ATFM delay is below 1.94 minutes per arrival and a penalty is computed only if the total arrival ATFM delay is above 1.94 minutes per arrival movement. This trigger is significantly higher than the proposed national targets (1.15 minutes per arrival in 2022 to 1.42 minutes per arrival in 2024) and than the past observed performance (average in RP2: 1.75 minutes per arrival), turning this incentive scheme in virtually a bonus-only scheme, given the very low chance of penalties.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

En route:

- Switzerland has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the reference values for the ANSP.
- In addition to the national incentive scheme, a FAB-level incentive scheme also applies.
- The maximum bonus and penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

- Switzerland has chosen to modulate the pivot values for CRSTMP-only delays. The basis for the modulation is the target values for the ANSP. The indicated pivot values are higher than the average CRSTMP delays during RP3.
- The maximum bonus and penalty is set at 0.5%. However, a trigger mechanism is set at 1.94 minutes per arrival, essentially rendering the incentive scheme, a bonus only scheme.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, plus the trigger mechanism practically excludes the possibility of inducing penalties, thus the incentive scheme does not have a material impact on the revenue at risk.
- As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

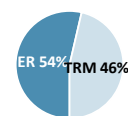
3.5 Investments

Switzerland - Skyguide

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	47.0	42.9	45.1	42.0	39.6	216.6
	En route	26.7	24.0	24.1	21.6	19.7	116.2
	Terminal	20.3	18.8	21.0	20.5	19.9	100.4

RP3 investment ratio ER/TRM



* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.
The numbers presented in this table do not correspond to the values presented below due to inconsistencies between the performance plan and its annex A and B.
Switzerland included a correction in the performance plan defined as "Financing outside Suisse FIR" that reduces the amount of the total new and existing investments by 64.0M€ over RP3.

3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	Virtual Center	From a local and disconnected set-up to a horizontal service structure: - A dynamic and networked airspace configuration - Scalable, connected, highly resilient and location-independent air traffic services - A virtual, network-centric, open and service-oriented architecture - Rationalised auxiliary services through strategic partnerships	57.5	No	Yes	22.2	5.0
2	NSG	Replacement of end of life asset and also includes new voice recognition features to automate Pilot voice responses for specific training modules, thus allow trainees to practice some modules without the need for a human Pilot, thus ultimately reduce the instructor to learner ratio.	6.5	No	No	1.1	0.9
3	Smart Radio	Replaces obsolescent main radio equipment across Switzerland, compliant with EC implementing rule for 8.33 kHz, and VOIP enabled to support the Virtual Centre implementation). This project started in 2013 and is due to complete in 2021 fully.	5.0	Yes	No	0.7	0.4
4	WAM	Deploy MLAT to replace end of asset life secondary radar. MLAT allows lower running costs and affordably improve coverage in the complicated Swiss mountain geography. As demanded by Eurocontrol Bluebook.	7.2	Yes	No	0.6	0.3
5	SAMAX	SAMAX SMR ZRH Renewals: The project aims at renewing the two legacy SMR (Surface Movement Radars) of Zürich airport, used for our A-SMGCS application SAMAX. Benefits: Continuous SMR service as sensor for the safety net functions Rimcas and ARSI / Use of modern technology with equal performances / Ensure a safe, available, performing and compliant SMR service beyond 2020 for a 15 years' time frame / to meet OPS and AMS airport surface requirements as they are today.	4.7	Yes	No	0.0	1.5
6	PAGE 1	The PAGE-1 project aims to reduce the TWR ATCOs workload to harmonise their working methods and to simplify their training by deploying a more efficient and safer working environment that will replace the currently paper strip-based one. It also aims to develop the basis for Approach improvements in view of the global TWR/APP improvement in terms of safety, capacity and cost-efficiency.	8.9	Yes	Yes	0.0	4.6
7	SkyC@T	Skyguide Communication at TWR/APP: Following the bankruptcy of the VCS supplier Schmid Telecom (SZ), who was foreseen to support various mid-life upgrades at regional TWRs and ZRH TWR/APP, a new voice communication solution is being implemented. A harmonized VCS product through all civil skyguide OPS units / Simplification of controller working position by replacing several HMI (TEL, RAD, VOBIS, Intercom) by one integrated solution; Implement the "any controller, any frequency, any site" concept for the first VCS and thereby enable remote TWR and VC concepts	7.1	No	No	0.2	0.1
8	AMAN CH	Replace the 17 year old current Arrival Manager (AMAN) in ZRH, known as CALM. In GVA, a new AMAN is required to complete the PAGE-1 stripless concept for Approach planners. The project also delivers a required pre-requisite for a future planned project (Future: PAGE-2 - which supports the airport development plan to improve capacity and efficiency), and AMAN is a prerequisite for XMAN Zurich.	5.4	Yes	Yes	1.1	1.1
Total:						25.9	13.9

Airspace user feedback regarding major investments

In 2021, the airspace users made several comments with respect to the investment plan of Switzerland:

- Inquired about the tangible benefits of the Virtual Center project. Switzerland noted that the investment will benefit the ability to adapt to volatile air traffic demand, higher cost-efficiency, reduce the impact on environment, cyber security, safety and efficiency, also providing the results of the business case study.
- Cost-benefit analysis to understand the realised/planned investments to cope with current lack of traffic and future increase. Switzerland noted that non-strategic investments have been postponed and that the current traffic pattern does not impact the cost-benefit analyses performed. No significant reduction of ATCO numbers is foreseen.

During the 2022 airspace users consultation, airspace users requested additional information on the benefits of the investments, especially on the TMA area investments (#5 and #6) and the Virtual Centre (#1). Skyguide reassured the airspace users that the projects will lead to operational benefits.

Review of investments

New major investments represent 18% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 10% higher than the planned and the amount overspent was 20M€. In terms of depreciation and cost of capital, Switzerland overspent 8.3M€. In 2021 Switzerland mentioned in Annex C of the performance plan that "Skyguide explains that the overspending was prefunded, and Skyguide has lost money over RP2. This is a definitive loss. One part will not be charged, and the other part will come through additional depreciation in RP3. This explains the trend and the cost.". No further explanation was provided.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Virtual Center	Local	Safety, Environment, Capacity, Cost-efficiency	Split in 3 phases, expected to bring significant benefits in multiple areas.
2	NSG	Local	Safety, Cost-efficiency	Benefits in safety: obsolescence; Cost-efficiency: reduction of simulation pilots.
3	SkyC@T	Local	Safety, Environment, Capacity	Main benefit is linked to service continuity. The investment is an enabler for cost-efficiency.

Additional information

Virtual Center: new ATM system, a mixture of new systems and improving processes, overhauling old systems, and replacing old systems, linked to the ATM Master Plan.

NSG: overhaul of simulator, linked to the ATM Master Plan.

SkyC@T: overhaul of ATM system, linked to the ATM Master Plan.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	115.5	100.5	1.9	6.1	8.7	10.9	13.2	40.9
Existing investments			54.1	44.7	38.6	31.1	25.0	193.4

3.5.3 Review of investments contribution to capacity

- a) Investments contribute to the rectification of identified capacity shortfalls? ✔
- Both Geneva and Zurich ACCs have a capacity surplus in the beginning of RP3 (12% and 11% respectively) reducing to 5% for Geneva and 2% for Zurich in 2024.
- The main investment contributing to improving capacity is the Virtual Centre implementation which will be done in a phased manner throughout RP3. Additional capacity improvements can be expected in the airport domain by the PAGE1 and AMAN CH investments.
- No investment has been linked to PCP/CP1 ATM Functionalities.
- The Virtual Centre and various COM and SUR infrastructure related investments all contribute to resilience, flexibility, and scalability in line with the European ATM evolution.
- b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP? ✔
- The Virtual Centre investment will introduce system improvements by removing flight progress strips, enabling air/ground data link capabilities and procedural improvements as well as enabling airspace improvements (route management, dynamic airspace management). Virtualisation will also enable location-independent service provision and is aligned with the overall ATM evolution in Europe. The first phase of the Virtual Centre investment was performed in RP2 and was shown to contribute to capacity improvements (source: LSSIP Switzerland 2018).
- At airport level, the PAGE1 investment will enable transition to stripless environment in towers facilitating improvements in TWR/APP interoperability and the complementing AMAN CH investment enables future developments improving capacity (PAGE2 project and XMAN development).
- c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? ✔
- Some of the Virtual Centre phases and associated systems have been delayed, e.g. FDPS replacement pushed to 2024 (source: LSSIP Switzerland 2021), while the original timeline called for completion of the Virtual Centre initiative is in 2021 (source: LSSIP Switzerland 2014). However due to the phased approach, some Virtual Centre milestones have been implemented already with capacity gains. The first phase of the Virtual Centre investment was performed in RP2 and was shown to contribute to capacity improvements (source: LSSIP Switzerland 2018). As there is a capacity surplus in Switzerland during RP3, there does not seem to be any significant timing issues.

3.5.4 PRB Key Points

- The actual CAPEX for RP2 was 10% higher than the planned and the amount overspent was 20M€. In terms of depreciation and cost of capital, Switzerland overspent 8.3M€. In 2021 Switzerland noted in Annex C of the performance plan that the overspending was prefunded and that part of depreciation overspent in RP2 will not be charged, while another part will be included as additional depreciation in RP3.
- Switzerland is expected to have a capacity surplus throughout RP3.
- One major new investments targeting en route capacity is planned for implementation during RP3. Major investments are not linked to PCP/CP1 ATM Functionalities, although based on the investment descriptions they will contribute to achieving some of the AFs.
- Investments have been slightly delayed but are being implemented in phases with intermediate capacity benefits. Investments contribute to resilience, scalability, and flexibility in line with European ATM evolution.

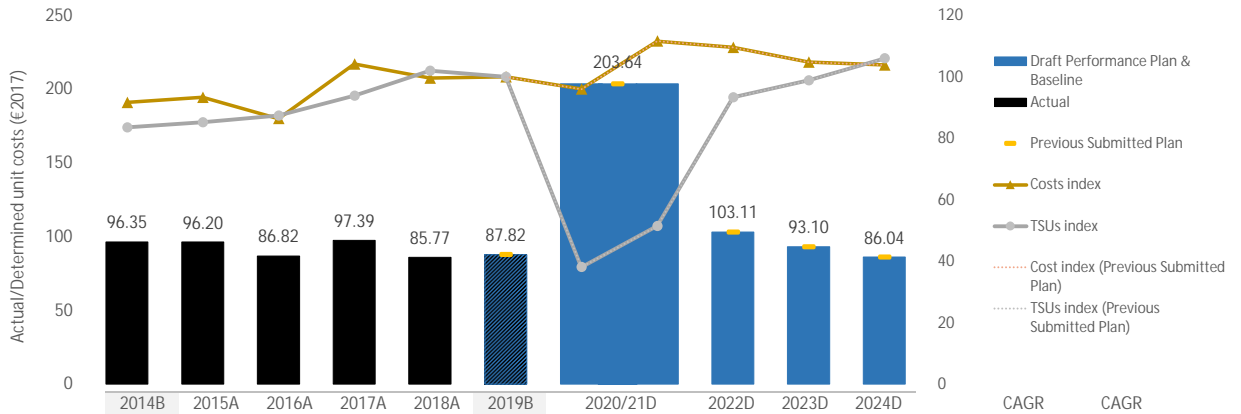
SWITZERLAND

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Switzerland - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



		2014B	2015A	2016A	2017A	2018A	2019B	2020/21D	2022D	2023D	2024D
Total costs	MCHF (nom)	153	155	143	174	167	168	350	185	178	178
Total costs	MCHF (2017)	153	156	144	174	166	167	346	183	175	173
TSU	'000	1,427	1,455	1,493	1,604	1,741	1,708	1,529	1,594	1,689	1,811
DUC	CHF (2017)	107.06	106.90	96.48	108.22	95.31	97.59	226.30	114.58	103.45	95.61
Exchange rate	CHF:€				1.111						
DUC	€ (2017)	96.35	96.20	86.82	97.39	85.77	87.82	203.64	103.11	93.10	86.04
Annual change	%		-0.2%	-9.7%	+12.2%	-11.9%	+2.4%	+132%	-49.4%	-9.7%	-7.6%

CAGR 2019B-2024: +1.4%
CAGR 2014B-2024: +0.6%

CAGR 2019B-2024: +1.0%
CAGR 2014B-2024: +0.4%

CAGR 2019B-2024: +1.5%
CAGR 2014B-2024: +0.7%

CAGR 2019B-2024: -0.5%
CAGR 2014B-2024: -1.2%

4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified? 87.82 €2017 ⓘ

Switzerland includes adjustments to the cost baseline due to an exceptional reimbursement in 2019 and a change in MET cost allocation criteria, the adjustments seem justified. However, not enough details are provided with respect to the change in the key allocation for MET costs in en route.

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target? -0.5% ✓

The DUC is planned to decrease on average by -0.5% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).

b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target? -1.2% ✓

The DUC is planned to decrease on average by -1.2% between 2019 and 2024, which is slightly worse than the RP3 Union-wide trend (-1.3%). However, the difference is negligible and the trend can be considered consistent with the Union-wide one.

c) DUC level (2019 baseline) lower than the average of comparator group (E) average (72.01 €2017)? +22.0% ✗

The 2019 DUC level is +22.0% higher than the average of the comparator group.

d) Deviation exclusively due to measures necessary to achieve the capacity targets? n/a

e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users? n/a

4.1.4 PRB Conclusions ✓

The cost-efficiency targets of Switzerland have not been revised as part of the revised FABEC RP3 draft performance plan submitted in July 2022. The PRB conclusions from the FABEC draft RP3 performance plan submitted in November 2021 have been slightly revised as follows:

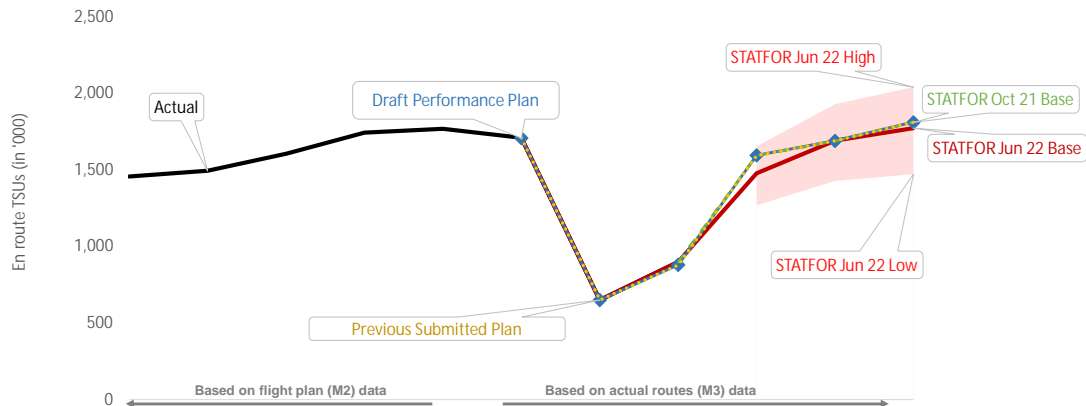
The PRB concludes that the cost-efficiency targets proposed by Switzerland should be approved.

- Switzerland is consistent with the RP3 DUC trend in terms of average reduction.
- Switzerland is not consistent with the long-term Union-wide DUC trend. However, the difference is negligible. Therefore, the trend can be considered consistent with the Union-wide one.
- Switzerland is not consistent with the average DUC baseline of the comparator group.
- Switzerland should detail the changes in the cost allocation.
- Switzerland should ensure that the overspent determined costs related to the RP2 investments are not recovered during RP3.

4.2 Review traffic forecasts and baseline

Switzerland - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	1,455	1,493	1,604	1,741	1,769	1,708	650	897				
Annual change	%		+2.6%	+7.4%	+8.6%	+1.6%	-1.9%	-61.9%	+37.9%				
STATFOR Jun 22 Base	'000 TSUs									1,476	1,691	1,771	+3.7%
Annual change	%									+64.5%	+14.6%	+4.8%	
STATFOR Oct 21 Base	'000 TSUs									1,594	1,689	1,811	+6.0%
Annual change	%									+77.6%	+6.0%	+7.2%	
Performance Plan	'000 TSUs						1,708	650	879	1,594	1,689	1,811	+6.0%
Annual change	%						-1.9%	-61.9%	+35.1%	+81.3%	+6.0%	+7.2%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019		
2019B (PP baseline, M3)	1,708	
2019A (as in the Reporting tables, M2)	1,769	
2019B/ 2019A	-3.44%	-3.44%
2014		
2014B (PP baseline)	1,427	
2014A (as in the Reporting tables, M2)	1,427	
2014B/ 2014A	0.00%	-3.44%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

- The 2019 traffic baseline was adjusted by the M2/M3 CRCO 12-months coefficient (-3.44%).
- No adjustment has been applied to the 2014 traffic baseline.

Review of 2014 and 2019 traffic baseline

- The application of the M2/M3 coefficient to the 2019 traffic baseline is as expected, increasing the DUC baseline.
- The M2/M3 coefficient calculated by the CRCO over 12 months is -3.44% and applying it to the 2014 baseline would have meant raising the baseline values for the DUCs, but no adjustment for 2014 traffic baseline has been reported.

4.2.3 Review of the PP traffic forecast

Review of the PP traffic forecast

The en route traffic forecast presented in the performance plan of Switzerland is in line with the STATFOR October 2021 base scenario.

4.2.4 PRB Key Points

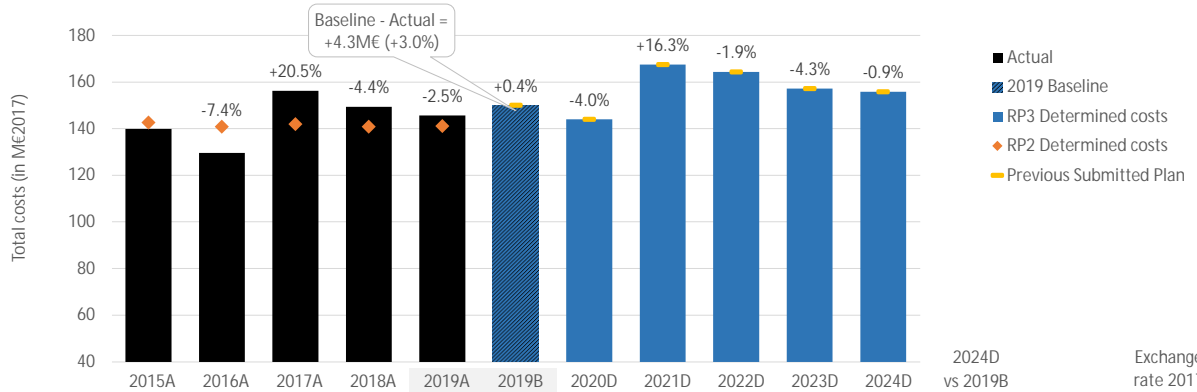
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- Switzerland en route traffic forecast is in line with STATFOR October 2021.
- The 2014 traffic baseline has not been adjusted. The traffic baseline would have been lower, increasing the DUC baseline.

4.3 Review of determined costs and baseline

Switzerland - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



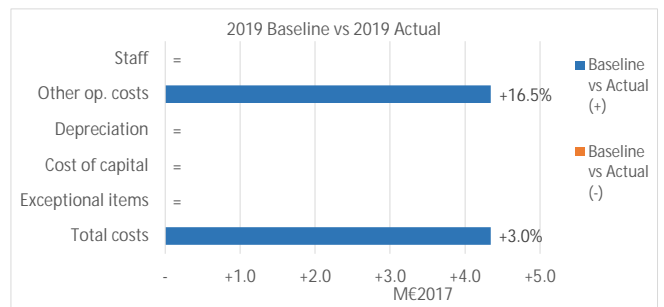
		2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D
Total costs	MCHF (nom)	155	143	174	167	163	168	162	188	185	178	178
Annual change	%		-7.7%	+21.0%	-3.7%	-2.2%	+0.7%	-4.0%	+16.4%	-1.6%	-3.7%	-0.2%
Inflation index	2017 = 100	99.9	99.4	100.0	100.9	101.3	101.3	101.3	101.4	101.7	102.5	103.4
Total costs	MCHF (2017)	156	144	174	166	162	167	160	186	183	175	173
Annual change	%		-7.4%	+20.5%	-4.4%	-2.5%	+0.4%	-4.0%	+16.3%	-1.9%	-4.3%	-0.9%
Total costs	M€ (2017)	140	130	156	149	146	150	144	167	164	157	156
												+3.9%

Exchange rate 2017
CHF:€
1.11124

The inflation rates used in the performance plan are in line with the IMF April 2021 forecast.

4.3.2 Baseline review

Baseline analysis	Δ M€2017	%
2014B vs 2014A	0.0	+0%
2019B vs 2019A	4.3	+3.0%



2014 Baseline Adjustments	Entity Type	Nature	M€2017

2019 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - MET costs extraordinary reimbursement 2019	MET	Other ops.	+5.2
#2 - MET costs change in allocation key as of 2020	MET	Other ops.	-0.9

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

- No adjustments applied to the 2014 cost baseline.
- Two adjustments applied to the 2019 cost baseline. The adjustments are due to an exceptional reimbursement in 2019 (+5.2M€2017), and a shift of cost allocation of MET costs between 2019 and 2020 (-0.9M€2017). "In 2019, the reimbursement of MET costs has been provisioned which artificially decreased the MET costs for 2019 (extraordinary one-off effect)".

2014/2019 baseline analysis

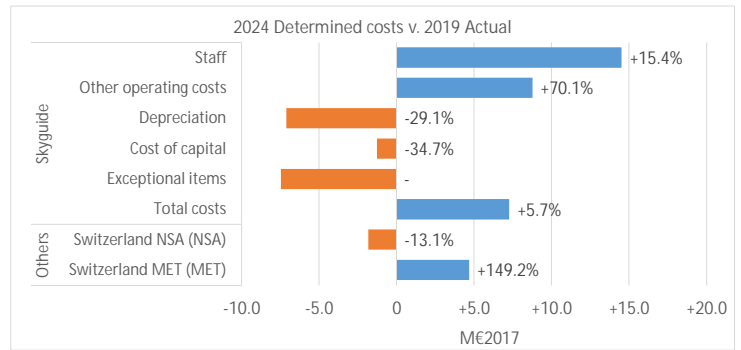
- The 2019 MET actual costs were outstandingly low compared with previous years. This was the result from an extraordinary, one-time effect, after a financial audit performed by the Swiss NSA. This led to a one-time deduction of the actual costs in 2019. If the actual 2019 figures have to be compared with the 2020 figures and the trend in RP3, and if conclusions are made regarding effective cost increases/decreases, this extraordinary effect must be corrected, therefore the baseline increase related to MET costs is well justified.
- Not enough details are provided with respect to the change in the key allocation for MET costs in en route. However, the increase in terminal cost for this effect (+2.0M€2017) is higher than the deduction applied in the en route baseline under this item (-0.9M€2017). The cost variation in terminal can not be fully related to a cost allocation change between en route and terminal.

4.3.3 Review of the RP3 determined costs and incentives

Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	-20.7	-12.6%
2021 determined vs actual	+12.3	+7.9%

Review of cost elements	
Investments (see details in 3.5)	
Cost of capital (see details in 4.3.1)	
Pension costs (see details in 4.3.2)	
Allocation ER-TCZ methodology (see details in 4.3.3)	

Incentives (see details in 3.4)	
Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



Total determined costs in 2024 is planned to be +7% (+10.1M€2017) higher than actuals 2019.

Skyguide costs in 2024 are planned to be +5.7% (+7.3M€2017) higher than in 2019 overall.

- The differences by nature of costs are largely driven by a change in the capitalisation rules, resulting in a shift from CAPEX to OPEX as of 2021 in order to stimulate the purchase of external services, support new development methods and ease the choice of the relevant projects to implement. Hence a large part of the increases in staff costs and other operating costs between 2019 and 2024 are attributable to the change in the capitalisation rules (+6.3M€2017 of the +14.5M€2017 increase for the staff costs and +7.7M€2017 of the +8.8M€2017 increase for the other operating costs). On the other hand, depreciation and cost of capital in 2024 are lower than in 2019 due to the changes in the capitalisation rules (-5.0M€2017 of the -7.1M€2017 decrease for the depreciation and -1.0M€2017 of the -1.3M€2017 decrease for the cost of capital). Overall, the additional costs relating to the new capitalisation rules in 2024 amounts to +7.5M€2017. This amount is deducted as exceptional items so as not to be billed to airspace users. Further to the PRB conclusions of the performance plan submitted in November 2021, Switzerland has clarified that the change in the capitalisation rules will not shift the investments risks to the airspace users given the RP3 reimbursement rules. *"In order not to invoice this additional OPEX to the airspace users, Switzerland has decided to decrease the Determined Costs by adding a negative amount under Exceptional Items, in order to take out the impact of the change in capitalization criteria. As a consequence, the Article 28 can be applied, as any gap on Depreciation and Cost of Capital can be calculated, and the artificial reduction of determined costs is only applied on Exceptional Items (hence an invoicing impact, but no impact on costs). The risk sharing mechanism is not biased, as actual Costs are compared to Determined Costs, and due to the for the airspace users beneficial decision of Switzerland not to invoice these additional costs, there is a reduction in exceptional items."*

The same approach has been followed by Skyguide for 2021 to 2024. In 2020, the amounts deducted as exceptional items correspond to the decrease of financing for the delegated airspace (Germany/Italy/Austria).

However, overall, total costs of Skyguide still result in an increase of 5.7% between 2019 actuals and 2024 planned costs.

- Skyguide indicates that they obtained a State capital injection of 150MCHF (around 135M€) to cover the transitory losses for delegated airspace in 2020 and capitalisation rules, as well as a loan of 350MCHF (around 315M€) for the accrued revenues for 2020 and 2021 that are planned to be invoiced as of 2023. It is indicated in the performance plan that *"As a counterpart of the recapitalization by the CH Confederation, Skyguide has to implement a 120MCHF (around 108M€) savings in 2020-2024 (reflected in current submission) and to raise the retirement age of ATCOs to at least 60 years (having as consequence a transition phase with additional costs)."*

The NSA costs in 2024 are planned to be -13.1% (-1.8M€2017) lower than in 2019.

The MET costs for 2024 are planned to be +149.2% (+4.7M€2017) higher than in 2019. This is due to an exceptional reimbursement in 2019 and a change in allocation key as of 2020. These are presented as adjustments to the baseline value for 2019 (see 4.3.2 of this document). After adjustment, the 2024 MET costs are planned to be +0.3M€2017 higher than in 2019 (+4.5%).

4.3.4 PRB Key Points

Minor changes since the FABEC draft RP3 performance plan submitted in November 2021:

- Switzerland includes adjustments to the cost baseline due to an exceptional reimbursement in 2019 and a change in MET cost allocation criteria. However, not enough details are provided with respect to the change in the key allocation for MET costs in en route.
- Between 2019 and 2024, the total costs for Skyguide are planned to increase by +5.7% (+7.3M€2017).
- Further to the PRB conclusions from the performance plan submitted in November 2021, Switzerland has clarified that the change in the capitalisation rules will not shift the investments risks to the airspace users given the RP3 reimbursement rules.

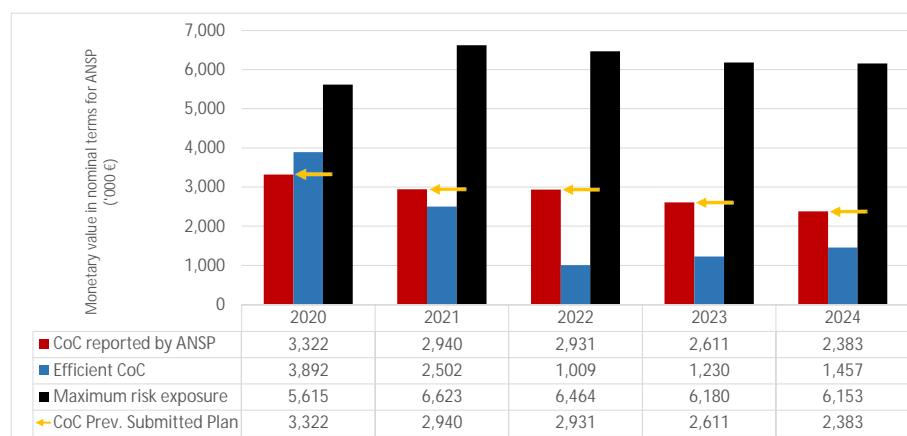
4.3.A Cost of capital

Skyguide - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	127,620	150,532	146,910	140,454	139,839
Monetary value of Return on Equity	1,745	1,350	2,671	2,394	2,199
Ratio RoE/DC (%)	1.4%	0.9%	1.8%	1.7%	1.6%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Total 2020-2024	4,097
-----------------	-------

Difference CoC reported by ANSP vs Efficient ('000 €)	2020	2021	2022	2023	2024
	-570	438	1,922	1,381	925

4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	2.8%	3.7%	5.1%	3.5%	12.9%	3.6%	9.9%	4.1%	8.1%	4.3%
Interest on debts	2.2%	2.2%	1.7%	1.7%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%
Capital structure (% debt)	53.1%	53.1%	77.5%	77.5%	82.3%	82.3%	76.9%	76.9%	71.4%	71.4%
WACC	2.5%	2.9%	2.5%	2.1%	2.5%	0.9%	2.5%	1.2%	2.5%	1.5%

Is the interest on debts in line with the market?	Yes
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- The interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.
- The efficient WACC has been calculated based on option 3.
- Over RP3, the reported cost of capital is 4.1M€ above the efficient cost of capital. Despite this and the remarkably high return on equity for 2022-2024, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 0.9% and 1.8%).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	132,873	117,583	117,249	104,444	95,300
Net current assets	0	0	0	0	0
Adjustments total assets	0	0	0	0	0
Total asset base	132,873	117,583	117,249	104,444	95,300

- The fixed asset base is planned to decrease over RP3. This is in line with the decrease in investments as described in section 3.5 of this document.
- The RAB does neither include net current assets, nor adjustments to the total asset base.
- The total asset base is therefore equal to the fixed asset base and will decrease over RP3 accordingly.

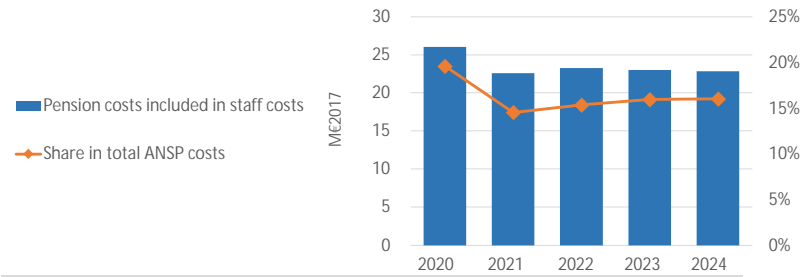
4.3.A.5 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:

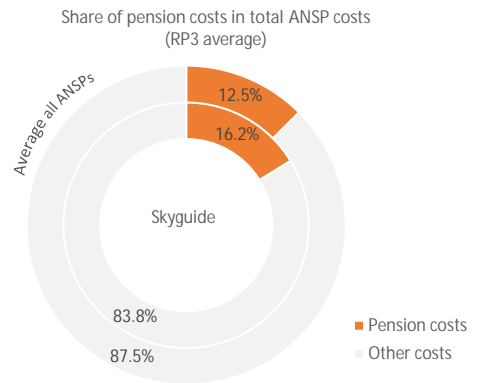
- Over RP3, the reported cost of capital is 4.1M€ above the efficient cost of capital. Despite this and the remarkably high return on equity for 2022-2024, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 0.9% and 1.8%).

4.3.B Pensions

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	ME2017	2020	2021	2022	2023	2024
Pension costs included in staff costs		26.0	22.6	23.3	23.0	22.9
Year on year variation	% change		-13.2%	+3.0%	-1.1%	-0.7%
Share in total ANSP costs	%	19.6%	14.5%	15.4%	16.0%	16.0%
Year on year variation	p.p.		-5.1p.p.	0.8p.p.	0.6p.p.	0.1p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Decrease**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Higher**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **Yes**

The change is relatively minor. In 2020 the contribution rate was 5.275% and 5.3% for the rest of the period.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **Yes**

Skyguide has five defined contribution pension schemes for different staff categories. The employer contribution rates to the defined contribution pension schemes are planned to decrease for two categories (ATCOs from 34.8% to 31.8% and ATCOs regional/military from 18.9% to 17.7%). For the other three categories the contributions are planned to increase (managers from 25.6% to 27.9%, AOT from 15.9% to 17.5% and auxiliaries from 5.1% to 5.5%).

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

Skyguide manages its occupational defined contribution scheme through a separate legal entity called Skycare. Members receive defined benefits, as the full liability of the scheme is assumed by Skycare. Skyguide is only liable for making contributions to the scheme and so the contributions are assessed on a defined contribution basis.

4.3.B.4 PRB Key Points

No changes since the FABEC draft RP3 performance plan submitted in November 2021:
- No major issues identified.



4.3.C Methodology for cost allocation between ER and TRM

Switzerland

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- The performance plan does not explain the overall cost allocation methodology or criteria in detail. The explanation only states that: 1) dedicated services are directly allocated to en route or terminal services, and 2) services common to en route and terminal are allocated based on the respective key of the service. The keys are not explained.
- In relation to MET costs, Switzerland states that it applies the "Guide to Aeronautical Meteorological Services Cost Recovery" of the World Meteorological Organisation (WMO-No. 904), and the Manual on Air Navigation Services Economics, Appendix 2 (ICAO Doc. 9161).

1.2. Are the criteria for cost allocation clearly defined and justified?

Partially

If not, what are the issues identified?

The methodology and criteria for cost allocation are not explained in detail.

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

Yes

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

Annex C on the stakeholder consultation states that there have been two changes in cost allocation between 2019 and 2020:

- 1) a change in indirect OPEX costs having an impact on en route of 1.6MCHF (around 1.44M€) and on terminal of 2.7MCHF (around 2.43M€); and
- 2) a change in MET costs having an impact on en route of -0.9M€2017 and on terminal of 2M€2017.

Annex T states that indirect costs are now allocated directly to Skyguide products instead of being first allocated to organizational units of Skyguide. The difference with the previous allocation methods represents between 1% and 2% of the en route and terminal total cost base.

The performance plan justifies that the change in the costs allocation of MET is in order to comply with applicable ICAO and WMO rules. In particular, Switzerland states that, in order to comply with regulatory requirements, it must increase the terminal MET cost for category I airports (Zurich and Genf) covered by the performance scheme and reduce the terminal MET costs for regional airports. No further details on the specific changes in the cost allocation methodology or criteria are provided. Switzerland notes that this is solely a cost reallocation and it has not increased the terminal MET costs at a national level.

2.2. Are these changes in cost allocation duly described and justified?

Yes

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

Yes

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

The reported changes in the allocation key of MET costs result in a decrease of the en route 2019 costs baseline of -0.9M€2017 and, at the same time, an increase of the terminal 2019 costs baseline of +2M€2017.

4.3.C.3 PRB Key Points

1

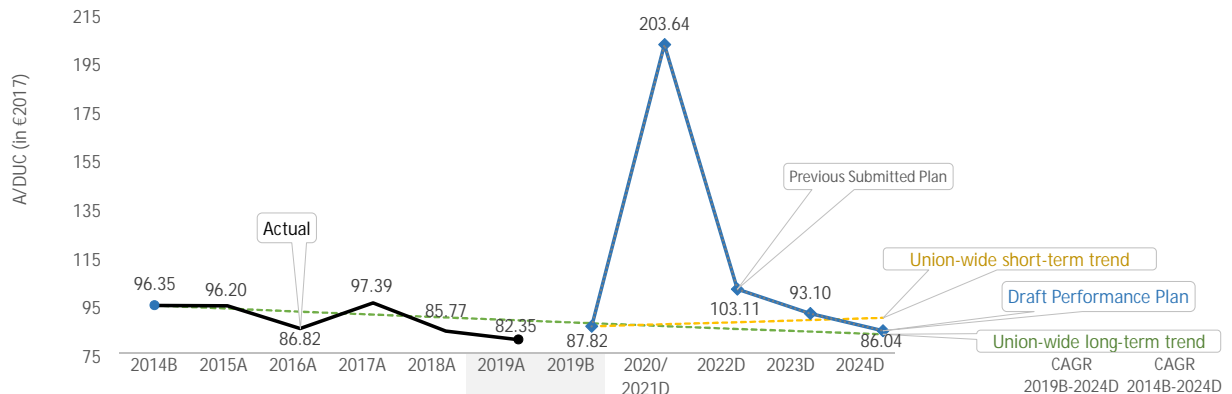
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- Annex C on the stakeholder consultation states that there have been two changes in en route/terminal cost allocation in: indirect OPEX costs and MET costs.
- The performance plan justifies the change in the allocation methodology for MET costs in order to comply with applicable ICAO and WMO requirements. Switzerland noted that indirect costs are now allocated directly to Skyguide products instead of being first allocated to organizational units of Skyguide.
- There is no record of stakeholders opposing the proposed changes in cost allocation.
- The plan indicates different impacts on the en route and terminal 2019 baseline costs, which should be further explained.

4.4 Determined unit costs (DUC)

Switzerland - En route CZ

4.4.1 Overview and trends of the DUC



DUC	€2017	96.35	96.20	86.82	97.39	85.77	82.35	87.82	203.64	103.11	93.10	86.04
Annual Change	%		-0.2%	-9.7%	+12.2%	-11.9%	-4.0%	+2.4%	+132%	-49.4%	-9.7%	-7.6%
Union-wide target	%								+120%	-38.5%	-13.2%	-11.5%

Union-wide long-term trend	CAGR 2019B-2024D	-0.5%
Union-wide short-term trend	CAGR 2014B-2024D	-1.2%

4.4.2 DUC consistency

✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan	Union-wide	Difference
✓ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-0.5%	+1.0%	-1.5p.p.
✗ DUC level consistency	2019 baseline	Performance Plan	Average comparator group	Difference
		87.82	72.01	+22.0%

- The DUC is planned to decrease on average by -0.5% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -1.2% between 2014 and 2024, which is slightly worse than the long-term Union-wide trend (-1.3%). However, the difference is negligible therefore the trend can be considered consistent with the Union-wide one.
- The 2019 DUC level is +22.0% higher than the average of the comparator group.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs

n/a

4.4.5 PRB Key Points

✓

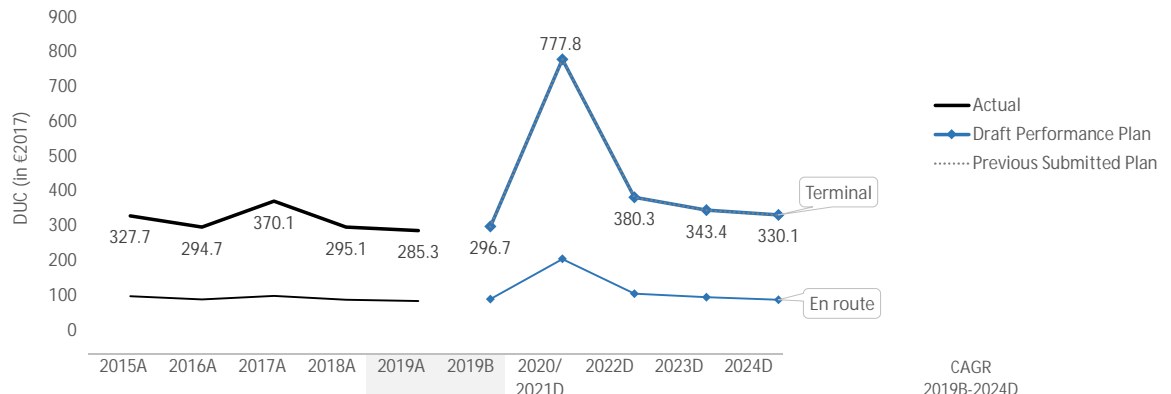
No changes since the FABEC draft RP3 performance plan submitted in November 2021:

- Switzerland is consistent with the RP3 DUC trend in terms of average reduction.
- Switzerland is not consistent with the DUC long-term Union-wide trend. However, the difference is negligible. Therefore, the trend can be considered consistent with the Union-wide one.
- Switzerland is not consistent with the average DUC baseline of the comparator group.

4.5 Terminal

Switzerland

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D	
DUC - Terminal	€2017	327.7	294.7	370.1	295.1	285.3	296.7	777.8	380.3	343.4	330.1	+2.7%
Annual Change	%		-10.1%	+25.6%	-20.2%	-3.3%	+0.5%	+162%	-51.1%	-9.7%	-3.9%	
DUC - En route	€2017	96.2	86.8	97.4	85.8	82.3	87.8	203.6	103.1	93.1	86.0	-0.5%
Annual Change	%		-9.7%	+12.2%	-11.9%	-4.0%	+2.4%	+132%	-49.4%	-9.7%	-7.6%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Geneva (LSGG)	GROUP III	169.1	371.9	+120.0%	233.8	582.1	+149.0%
Zürich (LSZH)	GROUP I	138.9	284.0	+104.4%	176.0	378.8	+113.2%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The average unit costs for Geneva (LSGG) and Zurich (LSZH) were significantly higher than the median of their comparator group during RP2, the difference is planned to be even higher during RP3.

4.5.3 Elements subject to review

Baseline review (terminal)

Traffic

Traffic Baseline analysis		Δ '000 TSUs	%
2019B vs 2019A	TCZ1	0.0	+0%
2019 Traffic Baseline Adjustments	TCZ1	No	

Costs

Cost Baseline analysis		Δ M€2017	%	
2019B vs 2019A	TCZ1	3.3	+4.0%	
2019 Cost Baseline Adj.	TCZ	Entity Type	Nature	M€2017
#1 - MET costs extraordinary reimbursement 2019	TCZ1	MET	Other ops.	+1.3
#2 - MET costs change in allocation key as of 2020	TCZ1	MET	Other ops.	+2.0

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

Two adjustments are described in the 2019 terminal baseline: the increase is explained by an exceptional reimbursement in 2019 (+1.3 M€2017), and a change of cost allocation for MET costs between 2019 and 2020 (+2.0 M€2017).

2019 baseline analysis

- Regarding the first element of the adjustments, the 2019 MET actual costs were outstandingly low compared with previous years. This was the result from an extraordinary one-time effect, after a financial audit performed by the Swiss NSA. This led to a one-time deduction of the actual costs in 2019. This adjustment related to MET costs is well justified.

- As for the second adjustment in en route, no much detail has been provided in the performance plan and in its Annexes. However, the increase in terminal (+2.0 M€2017) is higher than the deduction applied in the en route baseline under this item (-0.9 M€2017) and therefore the costs variation in terminal cannot be fully related to a cost shift between en route and terminal.

Traffic forecasts (terminal)

Review of the PP traffic forecast

The selected TNSU forecast underlying the proposed cost-efficiency targets for RP3 is in line with STATFOR October 2021 base forecast.

Determined costs (terminal)

Review of 2020/2021 determined costs

2020 determined vs actual
2021 determined vs actual

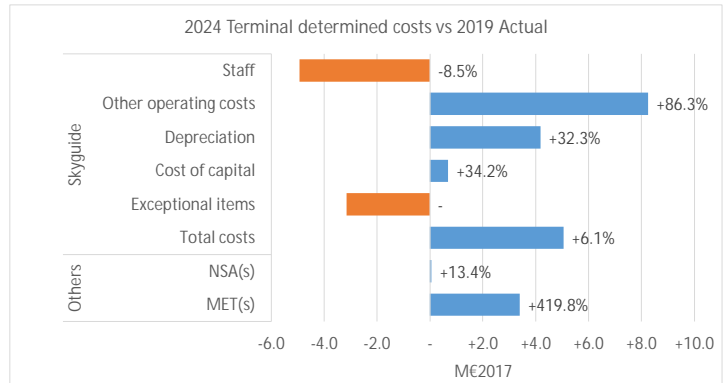
M€2017	%
+0.0	+0.0%
+8.2	+9.1%

Cost elements - Skyguide (terminal)

- ① Investments (see details in 3.5)
- ① Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ✓ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



- The share of terminal investment costs (46%) is higher than the share of terminal total costs (38%).
- Terminal WACC and its parameters are equal to the ones for en route.
- The share of terminal pension costs in total pensions costs (30%) is lower than the share of terminal costs in total determined costs (38%).
- The terminal DUC trend over RP3 planned for Switzerland (+2.3% p.a.) is higher than planned for en route (-0.5% p.a.).
- Skyguide total costs in 2024 are planned to be above the 2019 level (+6.1%, or +5.1M€2017). The main drivers are the other operating costs which are +86.3% higher in 2024, and higher depreciation costs (+34% or +4.2M€2017). This is only partially compensated by the exceptional items, that report a negative amount for each year. This amount corresponds to the adjustment for not invoicing of the impact of capitalisation rules from 2021 to 2024.
- For incentives, refer to section 3.4 of this document.
- The MET costs are planned to increase by +419.8% (or +3.4M€2017) mainly due to the elements included in the 2019 baseline adjustment explained in section 4.5.3 of this document.

4.5.4 PRB Key Points



No changes since the previous FABEC draft RP3 performance plan submitted in November 2021:

- The terminal RP3 DUC trend is +2.7%, which is worse than the en route RP3 DUC trend of -0.5%.
- The terminal RP3 DUC trend is +2.7%, which is worse than the terminal RP2 DUC trend of -3.4%.
- The average unit costs for Geneva (LSGG) and Zurich (LSZH) were significantly higher than the median of their comparator group during RP2, the difference is planned to be even higher during RP3.
- Switzerland used the STATFOR October 2021 base forecast for terminal traffic.
- Terminal costs increase over the period, mainly due to an increase in other operating costs and depreciation costs.

PRB Assessment

GREECE

Draft Performance Plan

Context and scope

Greece

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F5788, F5789, F5790, F5791, F5797, F5798, F5805, F5806, F6508

Relative weight compared to the SES area (2019):
 % Flight-hours vs SES 4.2%
 % Serv. Units vs SES 4.6%
 % Costs vs SES 2.2%

Scope

FAB: BLUE MED FAB

ANSPs: HASP
 HNMS

Other entities (as per Article 1(2) last para. of Regulation 2019/317): NATIONAL COORDINATION CENTER FOR SEARCH AND RESCUE
 HCAA/NSA

ATS,CNS, AIS
 MET

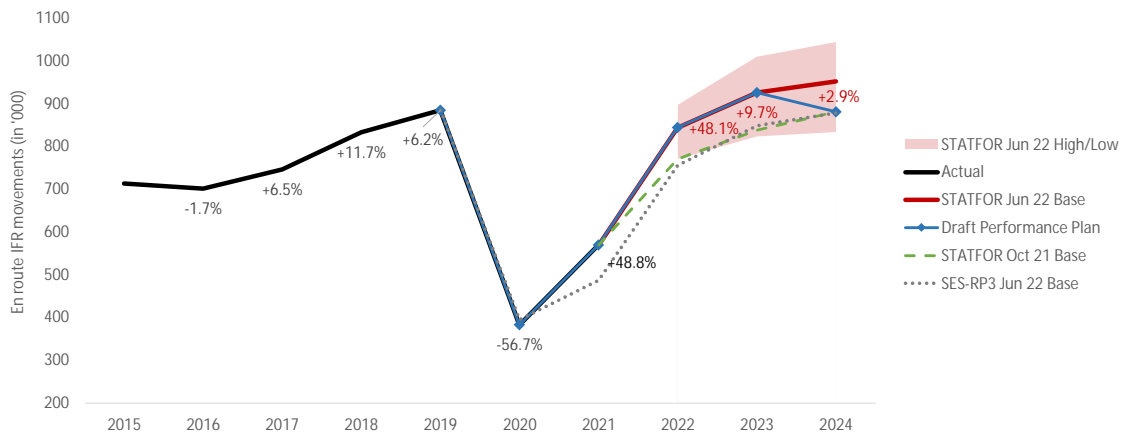
SAR
 STATE/NSA

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Greece	n/a	No	No	No	
Terminal (TRM)	Greece - TCZ	1	No	No	No	
Changes in the CZs from RP2		Yes				
Explanations: Reorganisation of the institutional arrangements in Greece. SAR costs included in the performance plan and occupational pension scheme implemented from 2021.						

Comparator group: Group D Other States in the comparator group: Cyprus, Estonia, Latvia, Lithuania, Malta

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
HASP	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

HASP	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Greece should be approved.

- The EoS safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	1.94%	2.00%	1.92%	1.92%	1.92%
Previous submitted PP	1.94%	2.00%	1.92%	1.92%	1.92%

PRB assessment

The PRB concludes that the environment targets proposed by Greece should be approved.

- Greece's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Greece did not achieve the 2021 target of 2.00% in its performance plan.
- Due to insufficient environmental performance in past years and lack of measures introduced to achieve RP3 targets, Greece remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.34	0.32	0.14	0.15	0.15
National target for terminal and airport ANS ATFM arrival delay per flight (min)	1.20	0.90	0.70	0.40	0.20
Previous submitted PP (en route)	0.34	0.32	0.26	0.20	0.20
Previous submitted PP (terminal)	1.20	0.90	0.70	0.40	0.20

PRB assessment

The PRB concludes that the national capacity targets proposed by Greece should be approved.

- National targets are set equal to the national reference values in the period of 2022-2024. The proposed targets are lower than the range of the delay forecast in 2022-2024.
- There is a discrepancy in the performance plan between capacity profile plans, planned number of ATCO FTEs, the proposed capacity enhancement measures, and the proposed breakdown values.
- The feasibility of the planned increase in the number of ATCO FTEs remains questionable.

4. Cost-efficiency 

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	40.71	27.86	26.96	27.98	+4.8%	-1.3%
Target for determined unit cost (DUC) (€2017) - Terminal	233.62	155.70	182.18	198.95	+7.7%	n/a
<i>Previous submitted PP (en route)</i>	40.71	32.60	33.12	32.93	+9.1%	+0.5%
<i>Previous submitted PP (terminal)</i>	233.62	198.05	198.48	192.69	+6.8%	n/a

PRB assessment

The PRB concludes that the cost-efficiency targets proposed by Greece should be approved.

- Greece is not consistent with the RP3 DUC trend in terms of average reduction.
- Greece is consistent with the long-term Union-wide DUC trend.
- Greece is consistent with the average DUC baseline of the comparator group.

5. PRB recommendations

ENVIRONMENT

- Greece should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Greece should address the capacity gap projected in their capacity plans by implementing structural enablers and current plans in a timely manner, as well as by developing additional capacity enhancement measures to meet the reference values.

COST-EFFICIENCY:

- Greece should detail how the RP2 underspending in investments have been taken into account for RP3.
- Greece should justify or revise the terminal RP3 cost-efficiency targets in regards to the determined unit cost trend against RP2.

6. PRB recommendations from the performance plans submitted in November 2021

ENVIRONMENT

- Greece should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Greece should revise the performance plan, introduce additional measures if necessary and set more ambitious en route ATFM delay targets to achieve consistency with Union-wide targets in each calendar year of RP3.
- Greece should ensure that ATCO training and recruitment plans provided in the performance plan are realistic and feasible, and should make every effort to realise the planned increase in the number of ATCOs in OPS FTEs.
- Greece should address the capacity gap projected in their capacity plans by implementing structural enablers and current plans in a timely manner, as well as by developing additional capacity enhancement measures to align to the reference values.
- Greece should revise the incentive schemes so that they have a material impact on the revenues.

COST-EFFICIENCY

- Greece should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Greece should detail the ANSP pension scheme applicable in RP3.
- Greece should detail how the RP2 underspending in investments have been taken into account for RP3.
- Greece should justify or revise the terminal RP3 cost-efficiency targets in regards to the determined unit cost trend against RP2.

GREECE

Safety KPA

1.1 Summary of safety key data and assessment results

Greece

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3.
The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained at the end of RP3.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan stipulates measures to be applied during RP3 in the safety risk management area that are considered relevant.

1.1.3 Interdependencies and Trade-offs

The performance plan underlines the priority of safety above other KPAs with respect to changes to ATM functional systems and lists specific measures to monitor the impact on safety during implementation.

1.1.4 Change Management

The performance plan indicates that the change management practices applied by Greece were updated to be compliant with the Commission Implementing Regulation (EU) 2017/373.

1.1.5 PRB conclusions



The PRB concludes that the safety targets proposed by Greece should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

1.2 Targets for EoSM for ANSPs and Measures

Greece

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
HASP	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	C	C	C	C	C	C	D	✓	
	Safety assurance	C	C	C	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets have been defined for each year for RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained at the end of RP3. Considering the ANSP' starting levels, close to RP3 targets, the targets could be achieved earlier.

The performance plan stipulates the measures to be applied during RP3: the implementation of Safety Committee meetings, continuous training of the involved staff, implementation of eTOKAI platform for the reporting and investigation of occurrences, identification of hazards, formal processes for the conduct of safety management system audits, safety surveys, and safety/risk assessments of changes and associated mitigations measures.

Considering that the ANSP will need to improve in the safety risk management area, the measures are considered relevant.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

The performance plan underlines the priority of safety above other KPAs with respect to changes to ATM functional systems. The ANSP has implemented an Integrated Management System with specific metrics and measures aiming at monitoring and balancing the impact over all KPAs during the implementation processes.

1.3.2 Change Management Practices

The performance plan indicates that the change management practices are applied for all future major airspace changes or ATM system improvements (subject to Safety Support Assessment) compliant with the Commission Implementing Regulation (EU) 2017/373.

GREECE

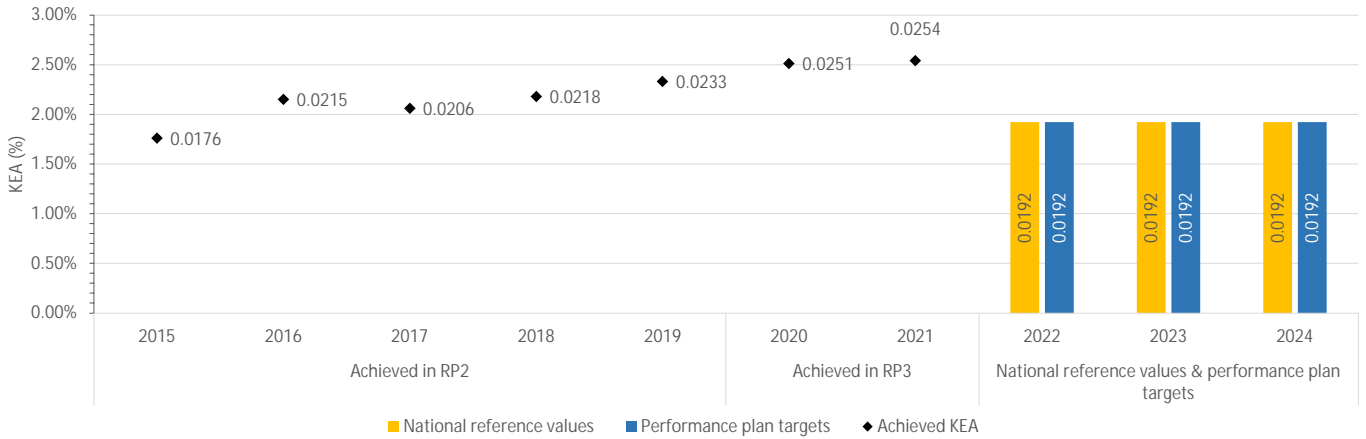
Environment KPA

2.1 Summary of Key Data and Assessment Results

Greece

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	1.94%	2.00%	1.92%	1.92%	1.92%
Performance plan targets	1.94%	2.00%	1.92%	1.92%	1.92%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Greece should be approved.

- Greece's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Greece did not achieve the 2021 target of 2.00% in its performance plan.
- Due to insufficient environmental performance in past years and lack of measures introduced to achieve RP3 targets, Greece remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- Greece should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Greece

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
On 30 January 2020, HELLAS free route airspace (FRA) was implemented daily between 21:00 – 04:00 UTC between FL335 - FL460. Further development of this FRA is required to meeting the requirements of the pilot common project (PCP). Greece plans to offer 24-hour FRA between FL305-FL660 by the end of 2022.		3.2.1.(c)	Page 78
Major 2021 ERNIP Recommended Measures:	9	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1.(c)	Page 163
PBN transition plan	✓	3.2.1.(c)	Page 120
Airspace classification in HELLAS UIR	✓	3.2.1.(c)	Page 122
Extension of Hellas UIR upper limit	✓	3.2.1.(c)	Page 155, 156
ATS route improvements	✓	3.2.1.(c)	Page 157
FRA in Hellas UIR	✓	n/a	Page 156
LGGG FIR direct routes	✗	n/a	Page 184
Greek airspace reorganisation – phase 2	✗	3.2.1.(c)	Page 206
HELLAS FRA – phase 4b	✓	n/a	Page 209
Greek airspace reorganisation – phase 3	✗		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Greece achieved a KEA of 2.51% in 2020. In 2021, Greece reached a KEA of 2.54% which means it did not achieve the 2021 target of 2.00% in its performance plan.

Greece plans to extend and improve the currently available night time free route airspace (FRA) in the UIR. Other measures planned include modernising the ATS network that includes the performance based navigation (PBN) transition plan, terminal manoeuvring area (TMA) restructuring, and developing new procedures in the TMAs. Finally, full FRA is planned to be offered after RP3, which delays realising the benefits of it in RP3 and may make the targets difficult to achieve.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Greece plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

GREECE

Capacity KPA

3.1 Summary of capacity key data and assessment results

Greece

3.1.1 En route ATFM delay

The national targets are set equal to the national reference values in the period of 2022-2024. The proposed targets are lower than the range of the delay forecast in 2022-2024.

The capacity plans indicate that Greece will face a capacity gap throughout 2022-2024 without implementing additional measures compared to those described in the latest NOP.

There might be an inconsistency in the performance plan between capacity profile plans, planned number of ATCO FTEs, the proposed capacity enhancement measures, and the proposed breakdown values.

The feasibility of the plan to increase the number of ATCO FTEs remains questionable.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Athens is the only airport included in the performance plan. The proposed targets are set significantly higher than the overly ambitious RP2 targets, and represent a gradual improvement compared to the average past performance.

A set of capacity enhancement measures are detailed in the performance plan, which may support the closure of the capacity gap.

Despite the capacity improvement measures and the improving targets, Athens is still expected to perform worse than the group of similar airports.

3.1.3 Incentives

En route:

Greece has chosen not to modulate the pivot values, which are set at the national targets, equal to the national reference values.

The maximum bonus is set at 1% and the maximum penalty is set at 2%.

Terminal:

Greece has chosen not to modulate the pivot values, which are set equal to national targets.

The maximum penalty is set at 1.5%, the maximum bonus is set at 1%.

3.1.4 Investments

Several investments were included in the RP2 performance plan and will continue throughout RP3 due to delays or deployment plan.

The actual CAPEX for RP2 was 12% of the planned for the same period and the amount underspent was 112M€. The airspace users have financed 33M€ for investments that have not been materialised. Greece mentioned that depreciation and cost of capital have been reduced such that costs that have been already recovered in RP2 due to delayed projects have been deducted, however the amount is unknown.

New major investments in RP3 are planned to be charged from 2023 onwards.

New major projects targeting en route capacity are planned for RP3 and one investment contributes to PCP/CP1 ATM functionality AF3.

Capacity shortfalls are expected to occur before the new investments become operational.

Other investments contribute to resilience, scalability, and flexibility.

3.1.5 PRB conclusions

The PRB concludes that the national capacity targets proposed by Greece should be approved.

- National targets are set equal to the national reference values in the period of 2022-2024. The proposed targets are lower than the range of the delay forecast in 2022-2024.

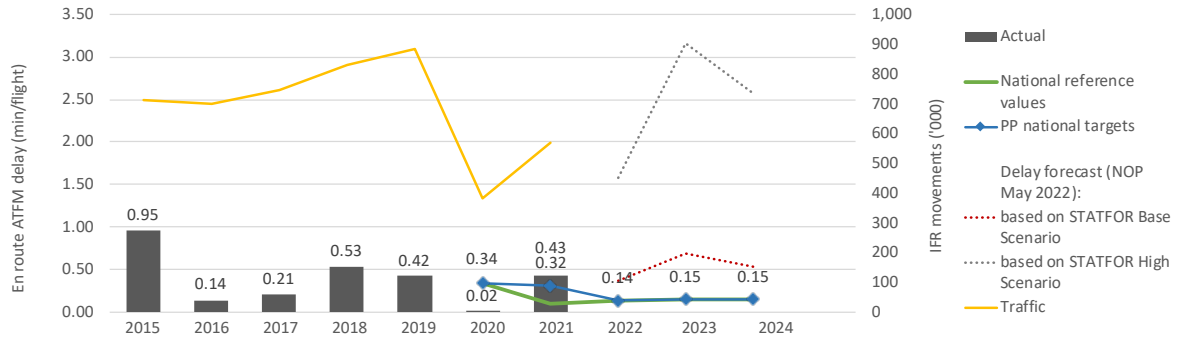
- There is a discrepancy in the performance plan between capacity profile plans, planned number of ATCO FTEs, the proposed capacity enhancement measures, and the proposed breakdown values.

- The feasibility of the planned increase in the number of ATCO FTEs remains questionable.

- Greece should address the capacity gap projected in their capacity plans by implementing structural enablers and current plans in a timely manner, as well as by developing additional capacity enhancement measures to meet the reference values.

3.2 En route ATFM delay per flight

3.2.1 Overview of en route ATFM delay per flight



Traffic variation	+5%	-1.7%	+6.5%	+11.7%	+6.2%	-56.7%	+48.8%			
Actual delay/flight	0.95	0.14	0.21	0.53	0.42	0.02	0.43			
National reference values						0.34	0.10	0.14	0.15	0.15
PP national targets						0.34	0.32	0.14	0.15	0.15
Delay forecast*:										
Based on STATFOR High Scenario						-	1.58	3.16	2.56	
Based on STATFOR Base Scenario						-	0.37	0.69	0.54	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
Deviation target vs reference value	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	⚠	⚠	⚠

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures

Assessment of capacity enhancement measures and review against NOP

During RP2, Greece experienced capacity constraints related to staffing and ATM capacity. Greece missed the capacity targets in 2015 and in 2018. Staffing issues were common root cause to the majority of delays and negatively aggravated the lack of ATM capacity.

The main capacity enhancement measures introduced by the NOP not fully addressed by the performance plan include:

- Implementation of new ATM system (2023-2024), Enhanced Mode S Radars network, new voice communication system,
- Airspace reorganisation - FRA (2022-2023),
- Recruitment of ACC ATCOs, and
- ATFM procedures.

Based on the evidence submitted, it is not clear that Greece plans to implement all capacity enhancement measures contained in the NOP (including those proposed by the NM).

The planned number of ATCO FTEs is based on Eurocontrol and ICAO studies. Figures provided for Athens ACC only cover both ACCs (The ACCs are physically collocated). In 2022-2023, a sharp increase of ATCO FTEs by 102 is planned. Considering the length of the training, the personnel must have already been recruited and finalising their training. The performance plan does not elaborate on how such a large increase of ATCO FTEs will be feasible, and/or how the final, on-the-job phase of the training might impact capacity performance. The planned increase is estimated to decrease capacity gaps identified in the previous version (2021) of the plan although still estimated 4% - 8% during 2023 and 2024.

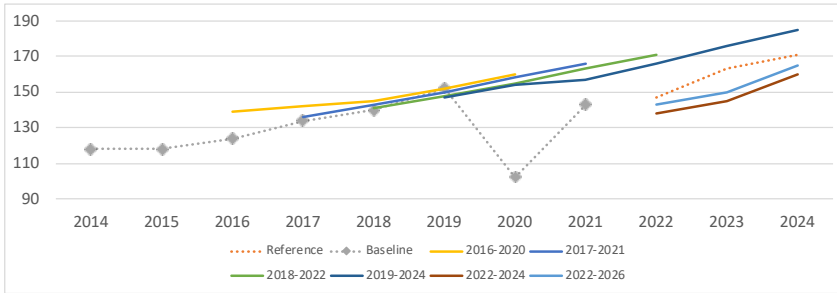
ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Athens ACC (LGGG)	Additional ATCOs in OPS to start working in the OPS room	0	24	2	0	40	62	25	+71
	ATCOs in OPS to stop working in the OPS room	3	20	22	4	0	17	15	
	ATCOs in OPS to be operational at year-end	210	214	194	190	230	275	285	
Macedonia ACC (LGMD)	Additional ATCOs in OPS to start working in the OPS room	0	0	0	0	0	0	0	+0
	ATCOs in OPS to stop working in the OPS room	0	0	0	0	0	0	0	
	ATCOs in OPS to be operational at year-end	0	0	0	0	0	0	0	
Total - HASP (en route)	Additional ATCOs in OPS to start working in the OPS room	0	24	2	0	40	62	25	+71
	ATCOs in OPS to stop working in the OPS room	3	20	22	4	0	17	15	
	ATCOs in OPS to be operational at year-end	210	214	194	190	230	275	285	

3.2.3 Review of previous and existing capacity profile plans per ACC



Athens ACC (LGGG)



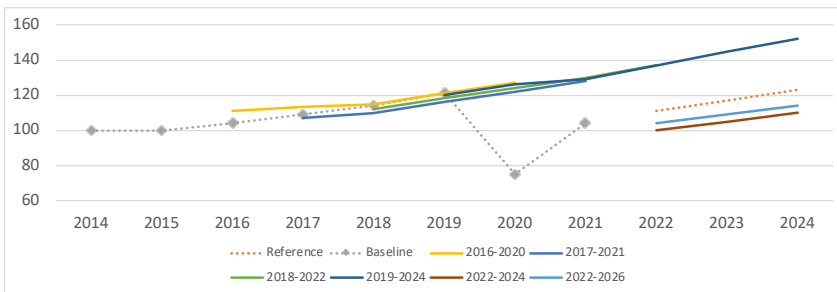
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									147	163	171
Baseline	118	118	124	134	140	152	102	143			
2016-2020			139	142	145	152	160				
2017-2021				136	143	150	158	166			
2018-2022					141	148	155	163	171		
2019-2024						147	154	157	166	176	185
2022-2024									138	145	160
2022-2026									143	150	165
Latest vs Reference									-3%	-8%	-4%

- Historical evolution of capacity profiles in RP2 shows a steady increase, although capacity plans were mostly higher than the baseline values. Greece experienced capacity gaps due to ATC capacity and staffing.

- The latest planned capacity profiles show an average annual growth of 7.4%, which results in a significant capacity gap of 8% in 2023 and a minor capacity gap of -4% in 2024.

- There are inconsistencies between the planned number of ATCO FTEs, capacity profile plans, capacity enhancement measures, and national targets.

Makedonia ACC (LGMD)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									111	117	123
Baseline	100	100	104	109	114	121	75	104			
2016-2020			111	113	115	121	127				
2017-2021				107	110	116	122	128			
2018-2022					112	118	124	130	137		
2019-2024						120	126	129	137	145	152
2022-2024									100	105	110
2022-2026									104	109	114
Latest vs Reference									-6%	-7%	-7%

- Historical evolution of capacity profiles in RP2 shows that capacity plans were mainly in line with the baseline, which were increased steadily. Greece experienced capacity gaps due to ATC capacity and staffing.

- The latest planned capacity profiles show an average annual growth of 4.7%. Makedonia ACC is expected to face a significant capacity gap of -6% in 2022, and -7% in 2023 and 2024.

- There are inconsistencies between the planned number of ATCO FTEs, capacity profile plans, capacity enhancement measures, and national targets.

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events



Review of the planned impact of special events in some years of RP3

The NOP identifies the FRA implementation, new ATM system implementation and associated ATCO training as major projects, and special events. The performance plan does not provide enough details to quantify the impact and identify relevant mitigating measures. The performance plan however describes intensive cooperation and coordination with Eurocontrol and the NM.

Review of the capacity enhancement measures planned to mitigate the impacts of special events

The evidence provided in the performance plan does not include a detailed description of mitigation measures.

3.2.5 Review of the measures to increase capacity and address capacity gaps !

- | | | |
|----|--|---|
| a) | Performance plan contains additional measures compared to the NOP in order to close the capacity gap?
The performance plan provides no additional capacity measures compared to those included in the NOP. | ✘ |
| b) | Measures proposed by the NM to enhance capacity are planned and described in the performance plan?
The NM proposed more measures than actually listed in the performance plan (such as network weather mitigation, operational excellence programme etc.). The level of details does not allow to determine whether those measures are implemented with the main ones introduced by the performance plan. | ✘ |
| c) | The performance plan provides rationale if only a subset of the measures proposed by NM is planned and described?
The performance plan does not provide such rationale. | ✘ |
| d) | The NSA proposed additional measures for the operational stakeholders in order to close the capacity gap?
The NSA does not propose additional measures for the operational stakeholders in order to close the capacity gap. | ✘ |
| e) | Staffing plans adequately address the capacity gap closure (increasing number of ATCOs is aligned to capacity requirements)?
The performance plan provides details on the methodology used to calculate the required number of ATCOs to ensure the required capacity. However, despite the planned sharp increase in ATCO FTEs in 2022, capacity gaps are expected to persist in both ACCs. Furthermore, the feasibility of such a large increase remains questionable. | ✘ |
| f) | The performance plan describes how the flexible use of operational staff is improved in order to enhance capacity?
The performance plan provides only a high-level description of the ATCO numbers to be shared between Athens and Makedonia ACCs and the methodology to calculate required numbers. It does not provide additional details on the flexible rostering. | ! |
| g) | The performance plan provides information on how the limitations of ATM systems and infrastructure negatively affecting capacity are overcome?
The new ATM system is described as an enabler of increasing capacity and will be implemented in the second half of RP3. The performance plan does not describe limitations of the current system. | ✔ |

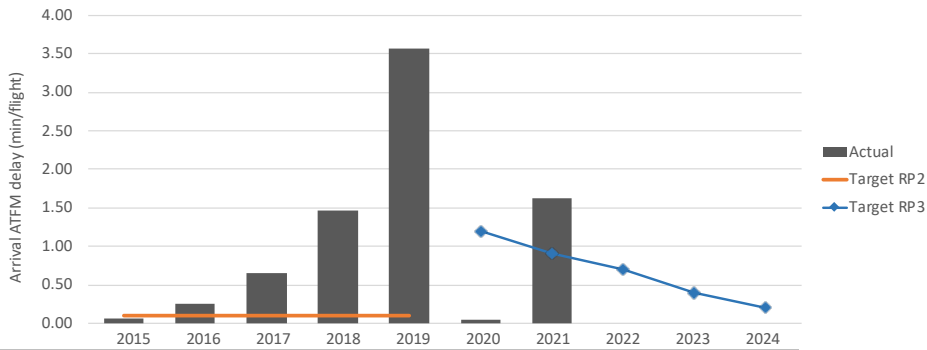
3.2.6 PRB Key Points !

- The national targets are set equal to the national reference values in the period of 2022-2024. The proposed targets are lower than the range of the delay forecast in 2022-2024.
- The capacity plans indicate that Greece will face a capacity gap throughout 2022-2024 without implementing additional measures compared to those described in the latest NOP.
- There might be an inconsistency in the performance plan between capacity profile plans, planned number of ATCO FTEs, the proposed capacity enhancement measures, and the proposed breakdown values.
- The feasibility of the plan to increase the number of ATCO FTEs remains questionable.

3.3. Arrival ATFM delay per flight

Greece

3.3.1 Overview of arrival ATFM delay per flight



	Target (RP2/RP3)											
	Target (RP2/RP3)	Actual	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level	0.10	0.06	0.10	0.26	0.65	1.47	3.57	0.04	0.90	0.70	0.40	0.20
Athens (LGAV)	0.10	0.06	0.10	0.26	0.65	1.47	3.57	0.04	0.90	0.70	0.40	0.20

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

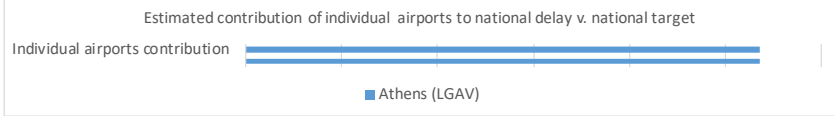
Athens, the only airport included in the Greek performance plan for RP3, has been increasing its arrival ATFM delays exponentially during RP2, reaching the worst performance in 2019 with 3.57 minute per arrival delay (the third highest arrival ATFM delay in the SES area). The main reason for this is the problems with the ATCO provision in the summer season.

The situation is not expected to improve in the short-term but several measures are foreseen in the performance plan: CDM (2021-2022), A-SMGCS (2022), staff recruitment that is planned to overcome the significant lack of operational ATCOs, who will only be operational in 2023, PBN procedures (2024), redesign of Athens TMA (2024), and new ATM surveillance system (2024).

The targets for RP3 are adapted to the current capacity constraints and the national target decreases in line with the implementation plan for these measures. The performance plan uses a local forecast updated with the STATFOR October 2021 base forecast and expects a CAGR in IFR movements of -0.2% in 2019-2024.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Athens (LGAV)	0.55
National Target	0.55



As Athens is the only airport included in the performance plan, the national target coincides with the airport target and the potential delay contribution is only associated to this airport.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Athens (LGAV)	GROUP II	0.23	1.31	+1.08	0.55	+0.32

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

Athens' performance during RP2 was considerably worse than the median for similar airports. The proposed target for RP3, although it closes 70% of that gap, still represents worse performance than similar airports.

3.3.5 PRB Key Points

- Athens is the only airport included in the performance plan. The proposed targets are set significantly higher than the overly ambitious RP2 targets and represent a gradual improvement compared to the average past performance.
- A set of capacity enhancement measures are detailed in the performance plan, which may support the closure of the capacity gap.
- Despite the capacity improvement measures and the improving targets, Athens is still expected to perform worse than the group of similar airports.

3.4 Capacity Incentive schemes

Greece

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.02 min	1.000%	2.000%
	✔	✔

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
NOP reference values			0.14	0.15	0.15
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.14	0.15	0.15
Pivot values for RP3			0.14	0.15	0.15

Threshold and pivot value review

The pivot values are aligned with the national performance plan targets and equal to the national reference values. A dead band of +/- 0.02 minutes is applied before bonuses or penalties apply. Maximum bonus or penalty could be applied at delay levels +/-0.05 minutes above or below the target.

Modulation review

No modulation is applicable.

Review of financial advantages/disadvantages

The scheme is asymmetric: the maximum bonus is 1% and a maximum penalty of 2% may be incurred.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.03 min	1.000%	1.500%
	✔	✔

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.350	±0.200	±0.100
Performance Plan targets			0.70	0.40	0.20
Pivot values for RP3			0.70	0.40	0.20

Threshold and pivot value review

The Greek terminal incentive scheme has opted for a dead band of +/-0.03 minutes, which might be too small to allow for small variations in performance with no associated bonuses / penalties.

The pivot value is not modulated and represents a significant improvement in performance with respect to the actual delays observed during RP2. Delays in 2020 almost disappeared due to the traffic reduction, but with the traffic recovery in 2021 the arrival delays at Athens have come back and the actual performance is likely to result in maximum penalties for this year.

Modulation review

Greece has opted for pivot values based on the performance targets (not modulated).

Review of financial advantages/disadvantages

The terminal incentive scheme includes a maximum penalty of 1.5% and a maximum bonus of 1%, resulting in an asymmetric scheme.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✔

En route:

- Greece has chosen not to modulate the pivot values, which are set at the national targets, equal to the national reference values.
- The maximum bonus is set at 1% and the maximum penalty is set at 2%.

Terminal:

- Greece has chosen not to modulate the pivot values, which are set equal to national targets.
- The maximum penalty is set at 1.5%, the maximum bonus is set at 1%.

3.5 Investments

Greece - HASP

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	1.7	1.6	2.1	10.2	21.3	36.9
	En route	1.7	1.5	1.6	9.7	18.8	33.4
	Terminal	0.1	0.0	0.4	0.5	2.5	3.5

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	Procurement of new DPS/ATM	Procurement of new Data Processing System / Air Traffic Management – DPS/ATM	37.9	Yes	Yes	12.6	0.0
2	Procurement and installation of 7 Surveillance systems (5 Collocated PSR/MSSR EHS and 2 MSSR EHS)	Procurement and installation of five (5) collocated surveillance systems (PSR/MSSR EHS, CORFU, THESSALONIKI, RODOS, HERAKLIO, LEMNOS) and two (2) Monopulse Secondary Surveillance Radar Enhanced Mode-S En-route Systems (MSSR EHS) at ATTAVIROS and KARPATOS.	34.7	Yes	No	5.6	0.0
3	Replacement of 10 DVOR, 13 DME and 6 ILS at Greek Airports	Procurement and installation of Navigation Aids (10 DVOR, 13 DME, 6 ILS) in Aerodromes and ATS En-Route determination sites	16.3	Yes	No	0.4	1.0
4	Procurement and installation of 7 Surveillance Systems (3 Collocated En Route PSR/MSSR EHS and 4 En Route MSSR EHS)	Procurement of 7 Surveillance Radars installed in KAMARA (collocated PSR and MSSR Enhanced Mode-s (EHS)), LEYKADA, KITHIRA, PILIO, HIMITTO and MEREDA	15.4	Yes	No	2.6	0.0
5	Procurement of 19 Voice Communication and Recording Systems (VCRS) for 5 Major and 14 National Airports	Procurement and installation of 19 Voice Communication and Recording Systems (VCRS) at 5 Major (Corfu, Rhodes, Kos, Thessaloniki and Iraklion) and 14 National Airports (Alexandroupolis, Limnos, Sitia, Milos, Samos, Kavala, Kalamata, Ioannina, Chios, Skiathos, Aktio/Prevezas, Karpathos, Paros and KHEMS). This procurement is also going to serve the ACC Contingency Plan and includes the following (per site): A. Voice Communications System (VCS). B. Digital Voice Recording Systems C. Time Reference Display Units. D. Installation and cabling of VCS network. E. Controller Working Positions (CWPs).	11.7	No	No	0.7	0.4
6	Procurement of 450 VHF transceivers and 60 UHF Tx/Rx	Procurement of 450 VHF transceivers and 60 UHF Tx/Rx	9.2	Yes	No	1.1	0.5
7	Procurement of DLS	The DLS system under procurement will be a Multi-Frequency "C" model (Model C Multi Frequency - Model C-MF) as described in the Strategic Plan for the SESAR Deployment Manager of the Data Link Services (DLS). The procurement includes the following equipment: a) VDL Model C-MF Ground Station, b) ATN air-to-ground router (AGR) c) ATN ground-to-ground router (AGG). d) ACARS Data System Processor, e) Central VHF Management Entity (C-VME), f) Multi-frequency Monitoring System, g) System performance supervision system.	5.6	Yes	No	1.8	0.0
8	APP RELOCATION at AIA Airport (NEW VCRS & 14 CWPs)	Relocation of ATHINAI APP from Hellinikon to Athens International Airport provides for procurement of new VCRS with improved functionality and additional to the existing one's CWPs (from 8 to 14). In addition, the prospect of increasing ATHINAI TMA in the Cyclades area is raised. The project includes the following equipment: A. Voice Communications System (VCS). B. Digital Voice Recording Systems C. Time Reference Systems. D. Installation and cabling of VCS network. E. Controller Working Positions (CWPs).	5.2	No	Yes	0.0	0.9
Total:						24.7	2.8

Airspace user feedback regarding major investments

In 2021, the airspace users addressed questions about the high increase of depreciation costs and of net current assets throughout RP3 and requested a more detailed analysis of the investments. Greece noted that the costs and net current assets follow the implementation of the investment plan. The depreciation has been recalculated such that costs that have already been recovered in RP2 due to delayed projects have been deducted.

In 2022, the airspace users addressed that investments were not focused on new technologies, noting that the current performance plan only relies on recruiting ATCOs to close the capacity gap.

Review of investments

Several investments were included in the RP2 performance plan and will continue throughout RP3 due to delays or the deployment plan. New major investments represent 75% of the total determined costs over RP3. The actual CAPEX for RP2 was 12% of the planned for the same period and the amount underspent was 112M€. In terms of depreciation and cost of capital, the airspace users have financed 33M€ for investments that have not been materialised. Greece mentioned that depreciation and cost of capital have been reduced such that costs that have been already recovered in RP2 due to delayed projects have been deducted, however the amount is unknown.

3.5.2.2 Justifications for major investments (i.e. above 5 M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Procurement of 19 Voice Communication and Recording Systems (VCRS) for 5 Major and 14 National Airports	Network	Safety, Environment, Capacity, Cost-efficiency	Significant benefits to all KPAs. This procurement seeks to deliver a robust and resilient service, legislative compliance, operational performance and cyber resilience.
2	APP RELOCATION at AIA Airport (NEW VCRS & 14 CWP's)	Network	Safety, Environment, Capacity, Cost-efficiency	Significant benefits to all KPAs. This procurement seeks to deliver a robust and resilient service, legislative compliance, operational performance and cyber resilience.

Additional information

Procurement of 19 Voice Communication and Recording Systems (VCRS) for 5 Major and 14 National Airports: Link to Master Plan COM11.

APP RELOCATION at AIA Airport (NEW VCRS & 14 CWP's): Link to Master Plan COM11.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	0.0	0.0	0.1	0.0	0.4	0.8	0.8	2.1
Existing investments			1.6	1.6	1.7	1.3	1.1	7.3

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	Procurement of SMR/A-SMGCS/MLT system for Athinai (LGAV) Airport	3.9	3.9	0.0	0.0	0.4	0.4	0.4	1.2	n/a
2	Purchase of 7 D-ATIS/D-VOLMET	2.2	1.1	0.0	0.0	0.0	0.2	0.2	0.3	n/a
3	Replacement of 4x4 vehicles required for the installation and maintenance of ATM/CNS systems at distant sites	1.2	0.9	0.0	0.0	0.0	0.1	0.1	0.3	n/a
4	Athinai& Makedonia ACC Security Means (CCTV/Intrusion detection etc)	0.7	0.7	0.0	0.0	0.0	0.1	0.1	0.2	n/a

3.5.3 Review of investments contribution to capacity

- a) **Investments contribute to the rectification of identified capacity shortfalls?** 🔍
 Both Athens and Macedonia ACCs are expected to experience capacity shortfalls during RP3, up to -8% for 2023 in Athens ACC and -7% in Macedonia ACC in 2023-2024.
 Procurement of new DPS/ATM investment can be expected to yield capacity benefits and the DPS/ATM investment is linked to PCP/CP1 ATM Functionality AF3. Procurement of DLS investment can be seen as a capacity enabler for the future. While the performance plan notes that all new major investments will deliver significant benefits in terms of capacity improvements and reduction in safety risk, it can be argued that while the DPS/ATM, DLS, and VCRS investments contribute to resilience, scalability, and flexibility and the communication, navigation, and surveillance related investments contribute mainly to resilience, the en route capacity benefits generated by the other investments is negligible.
 In the airport domain the APP relocation at AIA airport (new VCRS & CWP's) may yield capacity benefits for Athens airport through the implementation of additional CWP's. Additionally, in the other new investments category the SMR/A-SMGCS/MLT system invested at Athinai airport can contribute to airport capacity and resilience.
- b) **Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?** ✅
 The Procurement of new DPS/ATM investment can be expected to introduce a state-of-the-art flight data processing system capable of supporting the current European ATM evolution and associated system capabilities. The procurement of DLS enables the implementation of Data Link Services (DLS) / Controller-Pilot Data Link Communications with the associated capacity benefits to materialise in the longer term.
- c) **Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?** ❌
 The capacity shortfall in both ACCs is imminent and both ACCs are expected to remain capacity constrained throughout RP3. The DPS/ATM investment is planned to become operational by the end of 2023, indicating that the system will not be in place in time to respond to the capacity shortfalls. Furthermore, LSSIP Greece 2020 notes that the system was planned to be completed in 2022 and that at the time of publication of the LSSIP edition (Q1 2021) the DPS/ATM investment was being tendered and not yet in implementation phase.
 Taking into consideration the delay sensitivity associated with the new ATM system implementation projects this may result in additional delays and the situation should be closely monitored.

3.5.4 PRB Key Points

- Several investments were included in the RP2 performance plan and will continue throughout RP3 due to delays or deployment plan.
- The actual CAPEX for RP2 was 12% of the planned for the same period and the amount underspent was 112M€. The airspace users have financed 33M€ for investments that have not been materialised. Greece mentioned that depreciation and cost of capital have been reduced such that costs that have been already recovered in RP2 due to delayed projects have been deducted. The amount is however unknown.
- New major investments in RP3 are planned to be charged from 2023 onwards.
- New major projects targeting en route capacity are planned for RP3 and one investment contributes to PCP/CP1 ATM functionality AF3.
- Capacity shortfalls are expected to occur before the new investments become operational.
- Other investments contribute to resilience, scalability, and flexibility.

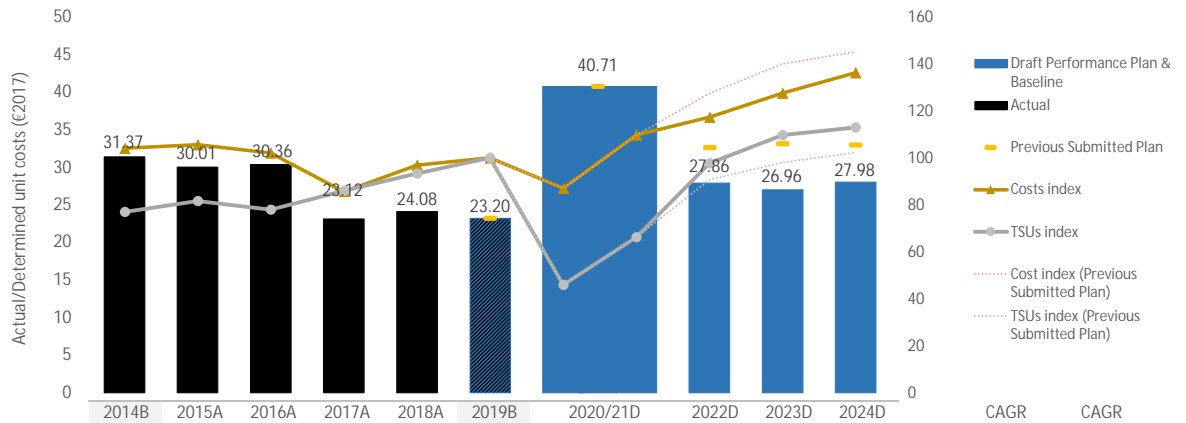
GREECE

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Greece - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



	M€ (nom)	2014B	2015A	2016A	2017A	2018A	2019B	2020/21D	2022D	2023D	2024D	CAGR 2019B-2024	CAGR 2014B-2024
Total costs	M€ (nom)	145	146	141	119	136	141	277	172	189	204	+9.7%	+4.2%
Total costs	M€ (2017)	145	147	142	119	135	139	274	163	178	190	+8.0%	+3.5%
TSU	'000	4,617	4,899	4,678	5,158	5,600	6,004	6,729	5,861	6,584	6,781	+3.1%	+1.4%
DUC	€ (2017)	31.37	30.01	30.36	23.12	24.08	23.20	40.71	27.86	26.96	27.98		
Exchange rate	€:€				1.000								
DUC	€ (2017)	31.37	30.01	30.36	23.12	24.08	23.20	40.71	27.86	26.96	27.98		
Annual change	%		-4.3%	+1.2%	-23.9%	+4.2%	-3.6%	+75%	-31.6%	-3.2%	+3.8%	+4.8%	-1.3%

4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified?	23.20 €2017	✓
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No major issues identified.

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	+4.8%	✗
The DUC is planned to increase on average by +4.8% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	-1.3%	✓
The DUC is planned to decrease on average by -1.3% between 2014 and 2024, which is in line with the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (D) average (28.59 €2017)?	-18.9%	✓
The 2019 DUC level is -18.9% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

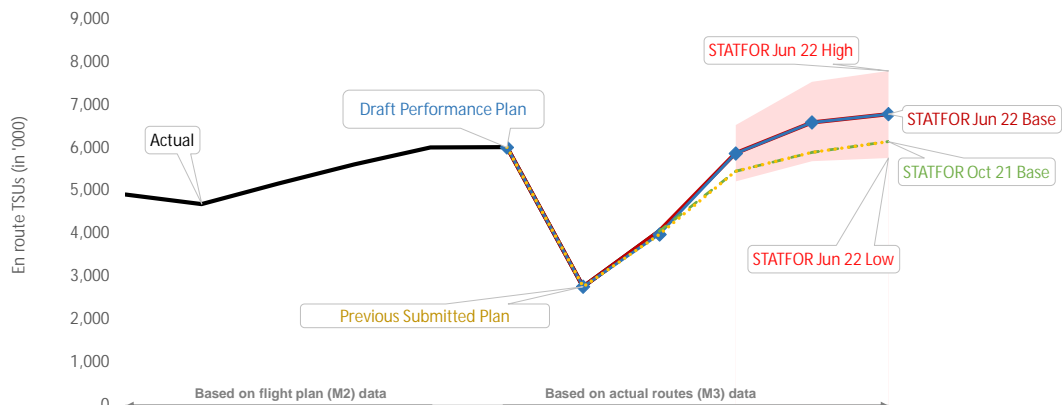
The PRB concludes that the cost-efficiency targets proposed by Greece should be approved.

- Greece is not consistent with the RP3 DUC trend in terms of average reduction.
- Greece is consistent with the long-term Union-wide DUC trend.
- Greece is consistent with the average DUC baseline of the comparator group.
- Greece should detail how the RP2 underspending in investments have been taken into account for RP3.
- Greece should justify or revise the terminal RP3 cost-efficiency targets in regards to the determined unit cost trend against RP2.

4.2 Review traffic forecasts and baseline

Greece - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	4,899	4,678	5,158	5,600	6,005	6,004	2,756	4,048				
	Annual change %		-4.5%	+10.3%	+8.6%	+7.2%	+7.2%	-54.1%	+46.9%				
STATFOR Jun 22 Base	'000 TSUs									5,861	6,584	6,781	+12.9%
	Annual change %									+44.8%	+12.3%	+3.0%	
STATFOR Oct 21 Base	'000 TSUs									5,445	5,888	6,140	+2.3%
	Annual change %									+34.5%	+8.1%	+4.3%	
Performance Plan	'000 TSUs						6,004	2,756	3,973	5,861	6,584	6,781	+12.9%
	Annual change %						+7.2%	-54.1%	+44.2%	+47.5%	+12.3%	+3.0%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019	6,004	
2019B (PP baseline, M3)	6,004	
2019A (as in the Reporting tables, M2)	6,005	
2019B/ 2019A	-0.01%	-0.01%
2014	4,617	
2014B (PP baseline)	4,617	
2014A (as in the Reporting tables, M2)	4,618	
2014B/ 2014A	-0.01%	-0.01%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2019 traffic baseline and 2014 traffic baseline were adjusted by the M2/M3 CRCO 12-month coefficient (-0.01%).

Review of 2014 and 2019 traffic baseline
 The 2014 and 2019 traffic baselines are calculated on the basis of 2014 and 2019 actual traffic respectively, and adjusted by the M2/M3 CRCO 12-month coefficient (-0.01%). The impact of the adjustment on the level of baselines traffic is marginal.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024?

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast
 n/a

Review of the PP traffic forecast
 The en route traffic forecast presented in the performance plan of Greece is in line with the STATFOR June 2022 base scenario.

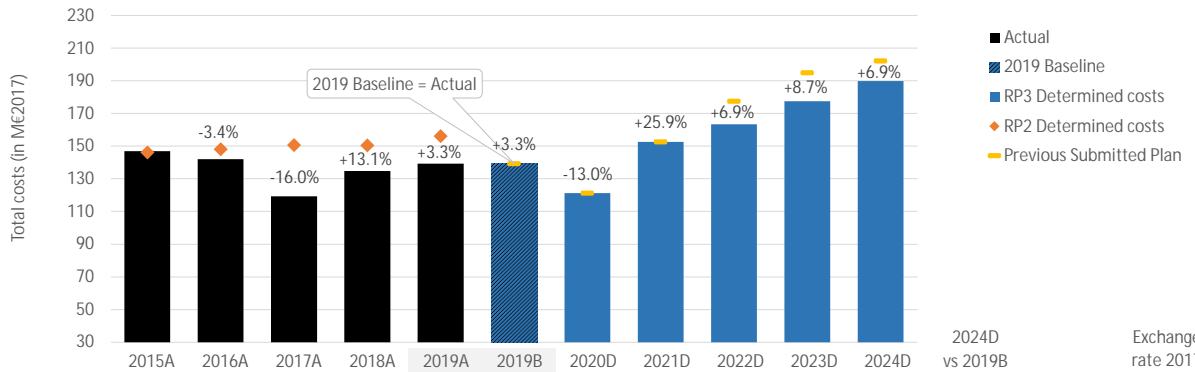
4.2.4 PRB Key Points

- Greece en route traffic forecast is in line with STATFOR June 2022.
- No major issues identified.

4.3 Review of determined costs and baseline

Greece - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



		2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B
Total costs	M€ (nom)	146	141	119	136	141	141	123	155	172	189	204	+44.9%
Annual change	%		-3.4%	-15.2%	+13.9%	+3.8%	+3.8%	-13.1%	+26.2%	+11.5%	+9.8%	+8.0%	+8.2%
Inflation index	2017 = 100	98.9	98.9	100.0	100.8	101.3	101.3	101.3	101.5	106.5	107.9	109.7	+8.2%
Total costs	M€ (2017)	147	142	119	135	139	139	121	153	163	178	190	+36.2%
Annual change	%		-3.4%	-16.0%	+13.1%	+3.3%	+3.3%	-13.0%	+25.9%	+6.9%	+8.7%	+6.9%	+36.2%
Total costs	M€ (2017)	147	142	119	135	139	139	121	153	163	178	190	+36.2%

Exchange rate 2017	€:€
	1.00000

Is inflation in PP in line with IMF (April 2022 forecast)? Yes

4.3.2 Baseline review

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
No adjustments applied to the 2014 and 2019 costs baselines.

2014/2019 baseline analysis

The 2014 and 2019 costs baselines are equal to 2014 and 2019 actual costs accordingly.

4.3.3 Review of the RP3 determined costs and incentives

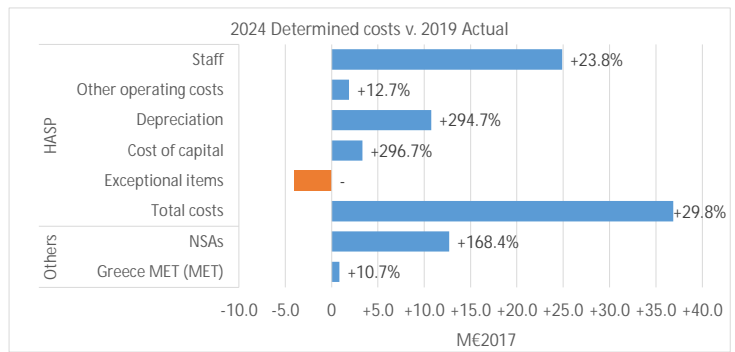
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+20.3	+15.3%

Review of cost elements

- Investments (see details in 3.5)
- Cost of capital (see details in 4.3.1)
- Pension costs (see details in 4.3.2)
- Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	2.00%
Additional incentives?	No



Total cost of Greece in 2024 is expected to be +36.2% (+50.4M€2017) higher than 2019 actual costs, which is more ambitious (-8.9 p.p) than in the performance plan submitted in November 2021, when the total costs was higher by +45.1% (+62.9M€2017).

The total planned HASP costs in 2024 is +30% (+37M€2017) higher than in 2019 due to the increase of all costs categories: cost of capital (+297%), depreciation costs (+295%), staff costs (+24%), and other operating costs (+13%).

- The implementation of the new occupational pension scheme (implemented in 2021) will increase the HASP staff costs during the whole RP3 by +24M€2017. Additionally, based on the information from section 3.3.1 of the performance plan, Greece expected to increase the number of ATCOs (+71 FTE by the end of RP3). Comparing to the performance plan submitted in November 2021, HASP's staff costs increased by +12.7M€ in nominal terms. As explained by Greece, this is mainly due to the upward correction of both inflation and traffic forecast for Greece which influence the level of total staff costs.

- The depreciation costs are planned to increase significantly in 2023 and 2024, due to the commissioning of the new ATM/DPS system and other investments foreseen in the performance plan. In annex C of the performance plan, Greece underlined that depreciation costs were decreased by the costs that have already been recovered in RP2 regarding delayed projects. Comparing to the performance plan submitted in November 2021, HASP's depreciation costs decreased by -9.1M€2017.

- The cost of capital is planned to increase in 2023 and 2024 due to a higher asset base. After the consultation with airspace users, Greece decided to exclude the net current assets from the calculation of the cost of capital for years 2022-2024. Comparing to the performance plan submitted in November 2021, HASP's cost of capital is lower by -2.8M€2017.

- Greece also reported negative costs of exceptional items, which decreased the level of determined costs for 2023 and 2024 together by -9.0M€2017. These exceptional items represent the difference between determined and actual costs in 2021.

The establishment of an independent NSA and the inclusion of SAR costs in the NSA costs increased the en route NSA costs in RP3. SAR costs present 48% of total determined NSA costs forecasted for RP3.

4.3.4 PRB Key Points



- There are no adjustments to the cost baselines.
- Between 2019 and 2024, the total costs for Greece is planned to increase by +36% (+50M€2017).
- All cost categories and all entities are planned to increase the costs, with the exception of exceptional costs of HASP.
- In RP2, in terms of depreciation costs and cost of capital, airspace users have financed 33M€ for investments that have not been materialised. Greece mentioned that depreciation has been recalculated so that costs that have already been recovered in RP2 due to delayed projects have been deducted. However, the amount is unknown.

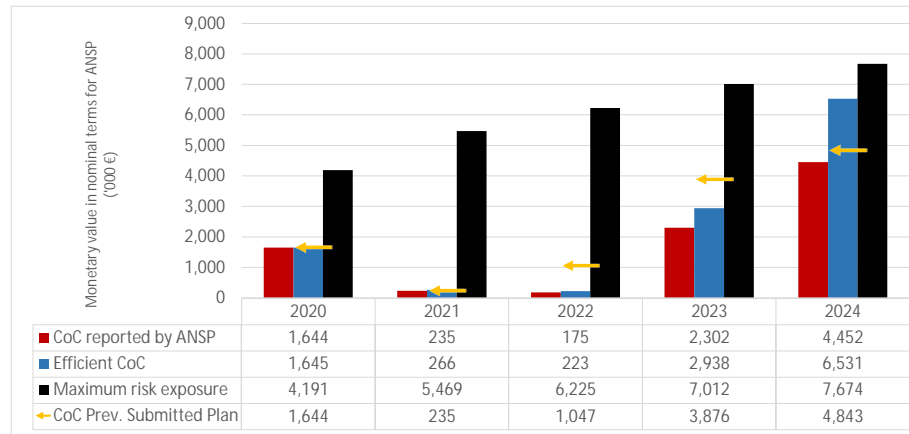
4.3.A Cost of capital

HASP - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	95,244	124,304	141,481	159,357	174,398
Monetary value of Return on Equity	1,644	235	175	2,302	4,452
Ratio RoE/DC (%)	1.7%	0.2%	0.1%	1.4%	2.6%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	5.6%	6.5%	4.6%	6.0%	4.6%	6.7%	4.6%	6.7%	4.6%	7.7%
Interest on debts	0.0%	3.1%	0.0%	3.3%	0.0%	3.9%	0.0%	4.1%	0.0%	4.7%
Capital structure (% debt)	0.0%	25.6%	0.0%	28.8%	0.0%	29.3%	0.0%	29.1%	0.0%	29.1%
WACC	5.6%	5.6%	4.6%	5.2%	4.6%	5.9%	4.6%	5.9%	4.6%	6.8%

Is the interest on debts in line with the market? n/a

- HASP is fully financed through equity, thus no interest on debts is specified.
- The WACC reported in the performance plan has been calculated based on the CAPM. The efficient WACC has been calculated based on option 1.
- The embedded return on equity reported in the performance plan over RP3 varies from a minimum of 0.1% to a maximum of 2.6%. The monetary value of the embedded return on equity is commensurate to the determined costs over RP3.
- Adjustments to the proposed cost of capital do not seem to be necessary over RP3.

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	6,033	5,072	3,788	49,711	96,151
Net current assets	23,163	0	0	0	0
Adjustments total assets	0	0	0	0	0
Total asset base	29,195	5,072	3,788	49,711	96,151

- The fixed asset base will significantly increase over RP3. This is in line with the investments described in section 3.5 of this document. However, the amounts raise questions on the feasibility of such an increase.
- After consultation with the airspace users, Greece decided to exclude the net current assets from the calculation of the cost of capital as of 2021.
- The RAB does not include adjustments to the total asset base.
- The total asset base will increase over RP3, driven by an increase in the fixed asset base.

4.3.A.5 PRB Key Points

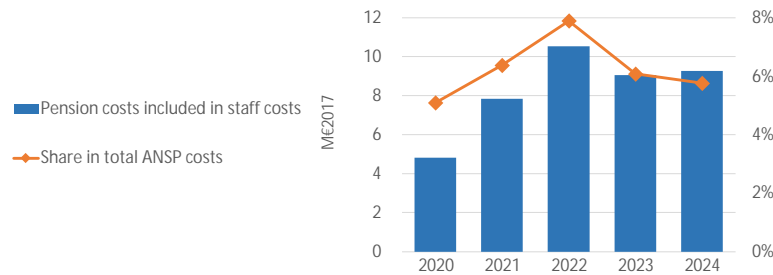


- The cost of capital does not present major issues over RP3.
- The asset base significantly increases at the end of RP3, when RP3 major investments are starting to be charged.

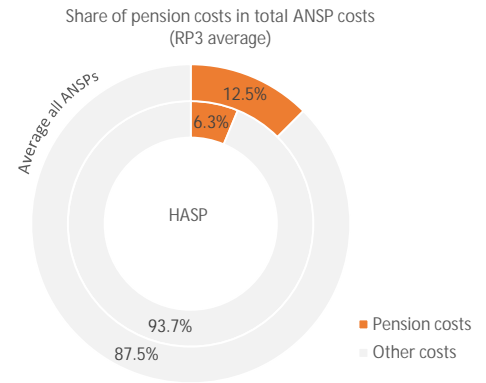
4.3.B Pensions

HASP - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



Pension costs included in staff costs	ME2017	4.8	7.8	10.5	9.0	9.3
Year on year variation	% change		+62.7%	+34.4%	-14.1%	+2.5%
Share in total ANSP costs	%	5.1%	6.4%	7.9%	6.1%	5.8%
Year on year variation	p.p.		1.3p.p.	1.5p.p.	-1.8p.p.	-0.3p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight increase**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

n/a

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

State Pension Fund (EFKA), for primary pensions, is a defined benefits scheme financed on a pay-as-you-go basis. The contribution rate is set at 16.33% for all RP3 years which include the State (employer) contribution to the pension scheme of 13.33% and the employer contribution to the auxiliary pension provision fund (ETEAP) of 3%.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **No**

The rate reported in the performance plan is stable throughout RP3 and is equal to 1%. The applicable defined contribution scheme has been established in line with the current and updated national law and Directive 2003/41 EC.

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **n/a**

No occupational defined benefit scheme established for HASP.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

As indicated in the performance plan, actions are taken in line with the applicable national law. Additionally, it was mentioned that the risk management and actuarial actions associated with the occupational fund have been outsourced in order to control and monitor the potential associated risks.

4.3.B.4 PRB Key Points



- Starting from 2021 the new occupational defined contribution scheme was implemented.
- The share of the pension costs in total costs is relatively low compared to the Union-wide average.
- Pension costs are forecasted to slightly increase during RP3.

4.3.C Methodology for cost allocation between ER and TRM

Greece

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Greece did not mention changes to the cost allocation methodology with respect to RP2.
- The criteria used to allocate costs between en route and terminal are: the ATCO working positions and allocation of personnel, the number of sectors, the number of flights, the use of equipment, and the organisational structure.

1.2. Are the criteria for cost allocation clearly defined and justified?

Partially

If not, what are the issues identified?

The criteria for cost allocation are only briefly explained.

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

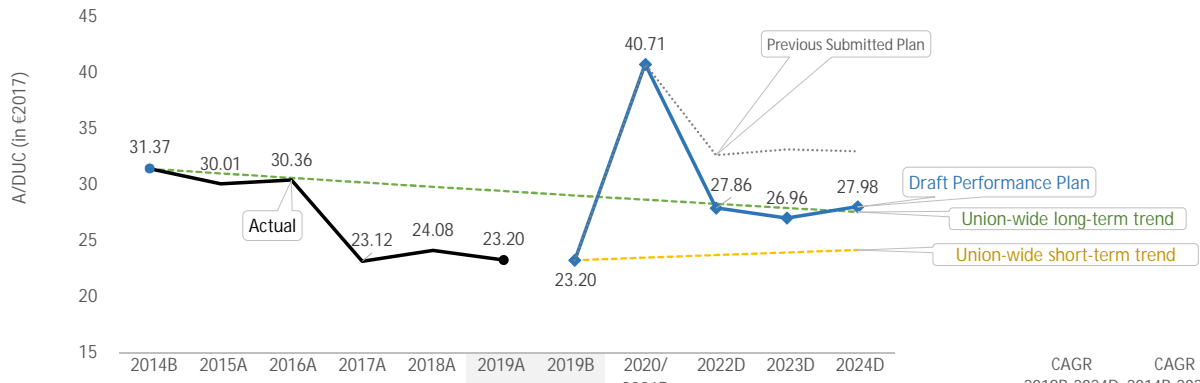


- Greece did not mention changes to the cost allocation methodology with respect to RP2.
- The criteria for cost allocation are only briefly explained.

4.4 Determined unit costs (DUC)

Greece - En route CZ

4.4.1 Overview and trends of the DUC



	€2017	2014B	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D
DUC		31.37	30.01	30.36	23.12	24.08	23.20	23.20	40.71	27.86	26.96	27.98
Annual Change	%		-4.3%	+1.2%	-23.9%	+4.2%	-3.7%	-3.6%	+75%	-31.6%	-3.2%	+3.8%
Union-wide target	%								+120%	-38.5%	-13.2%	-11.5%

CAGR	CAGR
2019B-2024D	2014B-2024D
+4.8%	-1.3%

4.4.2 DUC consistency

✗ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan +4.8%	Union-wide +1.0%	Difference +3.8p.p.
✓ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-1.3%	-1.3%	+0.0p.p.
✓ DUC level consistency	2019 baseline	Performance Plan 23.20	Average comparator group 28.59	Difference -18.9%

- The DUC is planned to increase on average by +4.8% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -1.3% between 2014 and 2024, which is in line with the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -18.9% lower than the average of the comparator group. It is also noted that the DUC for Greece is expected to remain below the average DUC of the comparator group for the remainder of RP3.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs

n/a

4.4.5 PRB Key Points

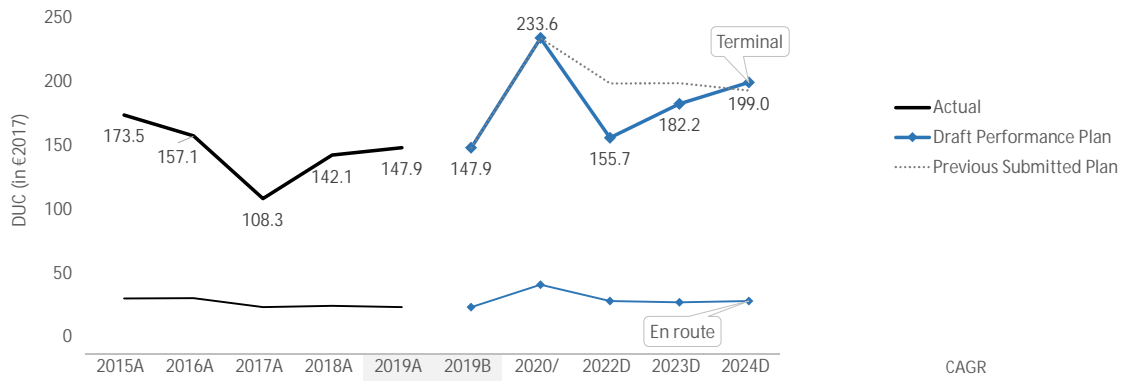
✓

- Greece is not consistent with the RP3 DUC trend in terms of average reduction.
- Greece is consistent with the DUC long-term Union-wide trend.
- Greece is consistent with the average DUC baseline of the comparator group.

4.5 Terminal

Greece

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	173.5	173.5	157.1	108.3	142.1	147.9	147.9	233.6	155.7	182.2	199.0	+7.7%
Annual Change	%		-9.5%	-31.1%	+31.2%	+4.1%	+4.1%	+58%	-33.4%	+17.0%	+9.2%	
DUC - En route	30.0	30.0	30.4	23.1	24.1	23.2	23.2	40.7	27.9	27.0	28.0	+4.8%
Annual Change	%		+1.2%	-23.9%	+4.2%	-3.7%	-3.6%	+75%	-31.6%	-3.2%	+3.8%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Athens (LGAV)	GROUP II	145.8	145.8	+0.0%	187.6	187.6	+0.0%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The average DUC for Athens airport (LGAV) represents the median DUC of its respective comparator group of airports over RP3.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

No adjustments applied to 2019 costs and traffic baselines.

2019 baseline analysis

The 2019 costs and traffic baselines are equal to 2019 actual figures.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

As for en route, the terminal traffic forecast presented in the performance plan of Greece is in line with the STATFOR June 2022 base scenario.

Determined costs (terminal)

✓ Is inflation in PP in line with IMF (April 2022 forecast)? Yes

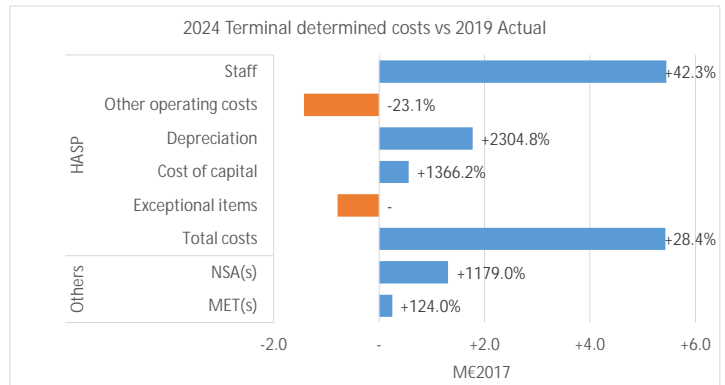
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+4.5	+31.3%

Cost elements - HASP (terminal)

- 🔔 Investments (see details in 3.5)
- ✓ Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ✓ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	1.50%
Additional incentives?	No



- The share of terminal investment costs (10%) is slightly lower than the share of total terminal costs (13%).
- The terminal WACC is equal to the en route WACC as in en route cost base.
- The share of terminal pension costs in total pension costs (18%) is higher than the share of terminal costs in total costs (13%).
- Total determined terminal costs for RP3 are expected to increase by +7.0M€2017 compared to 2019. Comparing to the November performance plan, the costs are expected to be higher by +1.5M€2017.
- The total HASP determined costs in 2024 is forecasted to be +28% (+5.4M€2017) higher than 2019 actuals. The main costs drivers are the same as for en route, depreciation, cost of capital and, staff costs. Staff costs in 2024 are forecasted to be +54% higher than 2019 actuals, no detailed explanation was provided by Greece. Comparing to the November performance plan, HASP's terminal staff costs are expected to be higher by +1.3M€2017, Greece explained that it is the effect of higher inflation and traffic forecast.
- Depreciation costs and costs of capital in 2024 are expected to be +2,305% (+1.8M€2017) and 1,366% (+0.6M€2017) respectively compared to 2019 actuals. The main reason for this is the planned realisation of the investment plan, including the replacement of 10 DVOR, 13 DME, and six ILS, which costs are 70% allocated to the terminal cost base, and the costs of relocation of the ATHINAI APP from Hellinikon to Athens International Airports that are 100% allocated to terminal costs base. No other explanation was provided in the performance plan.
- NSA costs allocated to terminal costs are +1,180% (+1.3M€2017) in 2024 compared to 2019 actuals, which may also be explained by the ongoing process or reorganisation of the institutional arrangements. Comparing to the November performance plan, NSA determined costs for RP3 increased significantly (+2.6M€2017).

4.5.4 PRB Key Points



- The terminal RP3 DUC trend is +7.7%, which is worse than the en route RP3 DUC trend of +4.8%.
- The terminal RP3 DUC trend is +7.7%, which is worse than the terminal RP2 DUC trend of -3.9%.
- The average DUC for Athens airport (LGAV) represents the median DUC of its respective comparator group of airports over RP3.
- Greece used the STATFOR June 2022 base forecast for terminal traffic.
- Terminal costs significantly increase over the period, mainly due to a significant increase in staff costs.
- SAR costs are 100% allocated to en route, and thus have no impact on the terminal cost base.

PRB Assessment

LATVIA

Draft Performance Plan

Context and scope

Latvia

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6447, F6448, F6449, F6450, F6451, F6452, F6453, F6454, F6455, F6456, F6457, F6458

Relative weight compared to the SES area (2019):

- % Flight-hours vs SES 2.1%
- % Serv. Units vs SES 0.8%
- % Costs vs SES 0.4%

Scope

FAB: NEFAB

ANSPs: LGS
LVGMC

Other entities (as per Article 1(2) last para. of Regulation 2019/317): Latvian Civil Aviation Agency

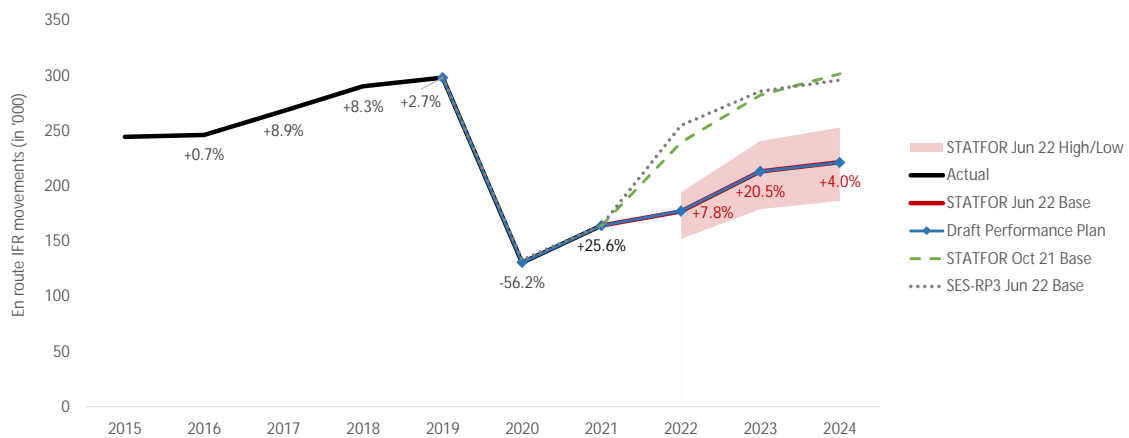
ATS, CNS, MET, AIS
 MET forecasting
 Competent Authority

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Latvia	n/a	No	No	No	
Terminal (TRM)	Latvia - TCZ	3	No	No	No	
Changes in the CZs from RP2		No				
There is no change in CZs scope stricto sensu, however the (en route) services that LGS provides in Lithuania FIR (re.NINTA-ADAXA) and related TSUs are accounted for by Lithuania with effect from January 2020 (previously by Latvia).						

Comparator group: Group D Other States in the comparator group: Cyprus, Estonia, Greece, Lithuania, Malta

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
LGS	Safety policy and objectives	C	C	C	D	D
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	D	D
	Safety promotion	C	C	C	D	D
	Safety culture	C	C	C	D	D

Previous submitted PP

LGS	Safety policy and objectives	C	C	C	D	D
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	D	D
	Safety promotion	C	C	C	D	D
	Safety culture	C	C	C	D	D

PRB assessment

The PRB concludes that the safety targets proposed by Latvia should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	1.30%	1.25%	1.25%	1.25%	1.25%
Previous submitted PP	1.30%	1.25%	1.25%	1.25%	1.25%

PRB assessment

The PRB concludes that the environment targets proposed by Latvia should be approved.

- Latvia's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Latvia did not achieve the 2021 target of 1.25% in its performance plan. For this reason, Latvia has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.06	0.01	0.03	0.03	0.03
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.02	0.02	0.02	0.02	0.02
Previous submitted PP (en route)	0.06	0.01	0.03	0.03	0.03
Previous submitted PP (terminal)	0.02	0.02	0.02	0.02	0.02

PRB assessment

The PRB concludes that the capacity targets proposed by Latvia should be approved.

- Capacity profiles indicate a major capacity surplus over RP3, thus plans to further increase capacity in RP3 may be unnecessary.
- There is a lack of clarity as regards to the maximum applicable bonus in the en route capacity incentive scheme.

4. Cost-efficiency ✓

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	40.07	38.04	35.62	33.59	+9.2%	+2.1%
Target for determined unit cost (DUC) (€2017) - Terminal	301.22	145.91	131.92	130.10	-2.4%	n/a
<i>Previous submitted PP (en route)</i>	<i>40.07</i>	<i>31.28</i>	<i>29.14</i>	<i>26.83</i>	<i>+3.3%</i>	<i>-0.4%</i>
<i>Previous submitted PP (terminal)</i>	<i>301.22</i>	<i>148.32</i>	<i>154.25</i>	<i>140.79</i>	<i>-0.5%</i>	<i>n/a</i>

PRB assessment

The PRB concludes that the cost-efficiency targets as proposed by Latvia should be approved.

Latvia has been heavily impacted by Russia's war of aggression against Ukraine. The decrease in traffic forecasted for the remaining years of RP3 would not allow Latvia to meet the trends without a drastic decrease in costs. Therefore, the PRB recommends the Commission to consider these external factors when assessing the performance plan of Latvia by applying the STATFOR October 2021 base forecast in the calculation of the short and long trend:

- Latvia is consistent with the RP3 DUC trend in terms of average reduction.
- Latvia is consistent with the DUC long-term Union-wide trend.
- Latvia is consistent with the average DUC baseline of the comparator group.

5. PRB recommendations

SAFETY

- Latvia should include additional NSA derived measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

ENVIRONMENT

- Latvia should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Latvia should clarify the maximum applicable bonus parameter in the en route capacity incentive scheme.

6. PRB recommendations from the performance plans submitted in November 2021

SAFETY

- Latvia should include additional NSA derived measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

ENVIRONMENT

- Latvia should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Latvia should clarify the maximum applicable bonus parameter in the en route capacity incentive scheme.

COST-EFFICIENCY

- Latvia should update its traffic forecast to the most recent version.
- Latvia should adjust the baseline to take into account the "NINTA – ADAXA" (Vilnius FIR) segment.
- Latvia should consider in the RP3 cost base the 10.9M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Latvia should justify the cost of capital assumptions and should revise downwards the cost of capital.
- Latvia should justify or revise the terminal RP3 cost-efficiency targets in regards to the determined unit cost trend against RP2.

LATVIA

Safety KPA

1.1 Summary of safety key data and assessment results

Latvia

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3 and are set in accordance with the RP3 Union-wide safety targets. The LGS plans to exceed the RP3 targets in 2023.

1.1.2 Measures planned to reach the target (if applicable)

The ANSP intends to exceed the RP3 targets and general measures are described. No specific measures for safety risk management are listed, however the ANSP will implement all the measures required by the Commission Implementing Regulation (EU) 2017/373.

1.1.3 Interdependencies and Trade-offs

No new implementation is required to achieve the RP3 safety targets. The safety level is expected to be maintained with standard procedures of safety management system. The safety level would not be deteriorated.

1.1.4 Change Management

The change management practices are defined and supported by the NSA. The plan does not provide more details about change management procedure.

1.1.5 PRB conclusions



The PRB concludes that the safety targets proposed by Latvia should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will improve maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.
- Latvia should include additional NSA derived measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

1.2 Targets for EoSM for ANSPs and Measures

Latvia

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
		Actual	Target	Target	Target	Target	Target		
LGS	Safety policy and objectives	C	C	C	C	D	D	✓	
	Safety risk management	C	C	C	C	D	D	✓	
	Safety assurance	C	C	C	C	D	D	✓	
	Safety promotion	C	C	C	C	D	D	✓	
	Safety culture	C	C	C	C	D	D	✓	

The EoSM targets have been defined for each year of RP3 and are set in accordance with the RP3 Union-wide safety targets. LGS has already reached the RP3 safety targets in four out of five management objectives. During RP3, LGS intends to exceed the RP3 safety targets and achieve level D in all management objectives.

The performance plan declares that the ANSP will implement all the required measures to be compliant with the Commission Implementing Regulation (EU) 2017/373. The measures described are in the area of safety culture, promotion of safety management systems, and enhanced implementation of safety management into global business planning.

None of the measures directly relate to safety risk management area that requires improvements as per the Regulation.

Additionally, specific NSA derived measures should be included.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

No new implementation is required to achieve the RP3 safety targets. The safety level is expected to be maintained with standard procedures of safety management system. The resources for safety activities are planned. The NSA reviews the resources available for safety as a part of oversight activity.

1.3.2 Change Management Practices

The performance plan declares that the change management is regulated by ANSP's specific management procedure that was recently updated and approved by NSA.

LATVIA

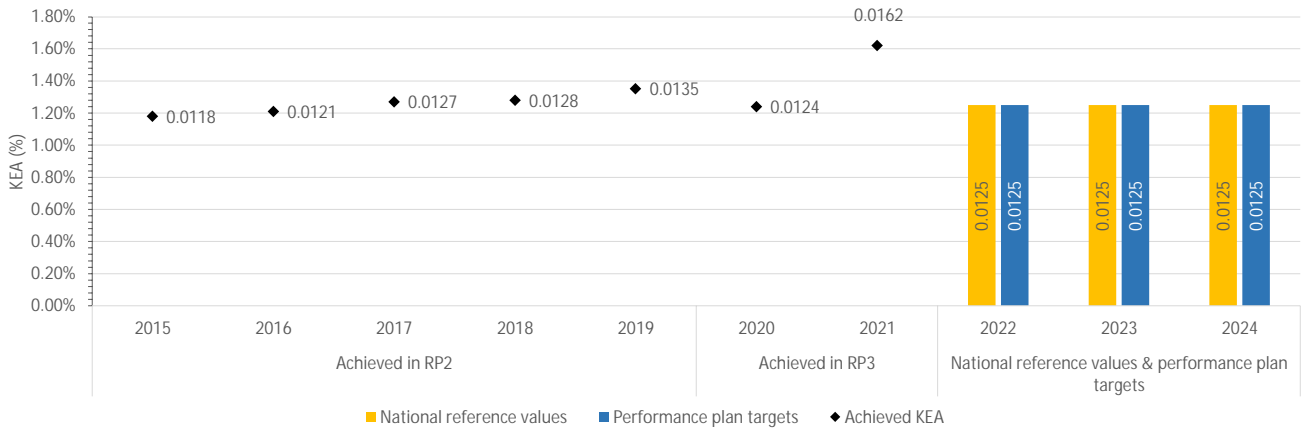
Environment KPA

2.1 Summary of Key Data and Assessment Results

Latvia

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	1.30%	1.25%	1.25%	1.25%	1.25%
Performance plan targets	1.30%	1.25%	1.25%	1.25%	1.25%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Latvia should be approved.

- Latvia's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Latvia did not achieve the 2021 target of 1.25% in its performance plan. For this reason, Latvia has been added to the PRB's watchlist for further scrutiny during the annual monitoring process.
- Latvia should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Latvia

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
Latvia implemented free route airspace (FRA) above FL095 and offered cross-border FRA within the Baltic FAB from 12 November 2015.		3.2.1(c)	Page 47
Major 2021 ERNIP Recommended Measures:	4	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1(c)	Page 165
PBN transition plan	✓	n/a	Page 177
JAMP 2020+ step 1	✗	3.2.1(c)	Page 139
Point merge implementation – Riga airport	✓	n/a	Page 198
FIR boundary points Riga – Minsk FIRs	✗		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Latvia achieved a KEA of 1.24% in 2020. In 2021, Latvia achieved a KEA of 1.62%, which means it did not achieve the 2021 target of 1.25% in its performance plan.

In 2015, Latvia has implemented free route airspace (FRA) above FL095 and cross-border FRA within the Baltic FAB.

Latvia did not provide further reasoning about the deterioration of their horizontal flight efficiency.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Latvia plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

LATVIA

Capacity KPA

3.1 Summary of capacity key data and assessment results

Latvia

3.1.1 En route ATFM delay

The proposed national capacity targets are equal to the national reference values and are higher than the range of the delay forecast for 2022-2024. Latvia is expected to have a significant capacity surplus throughout 2022-2024.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

There are three airports included in the performance plan. The national targets are set lower than in RP2 and are in line with average past performance. Riga represents 99.6% of the traffic, thus it is the main driver of the performance as well. All airports perform in line with the performance of the group of similar airports, with Riga that expected to perform marginally worse than zero delays as indicated by the targets.

3.1.3 Incentives

En route:

Latvia has chosen not to modulate the pivot values, which are set equal to the national reference values.

The maximum bonus and penalty is set at 2%, however, based on the information provided in the performance plan, the maximum bonus is capped at 1%, as it is not possible to achieve negative delays.

Terminal:

Latvia has chosen not to modulate the pivot values which are set equal to the national targets.

The maximum bonus and penalty is set at 2%.

3.1.4 Investments

The actual CAPEX for RP2 was 92% of the planned values for the same period and the amount underspent was 2.7M€. The airspace users financed 10.9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

Latvia expects a significant capacity surplus in the beginning of RP3 (48%), reducing to 15% by the end of RP3.

Two major investment (linked to unidentified PCP/CP1 ATM Functionalities) will contribute to en route capacity, one directly and the other indirectly. These investments also contribute to resilience, scalability, and flexibility.

Other investments contribute to scalability and flexibility.

3.1.5 PRB conclusions

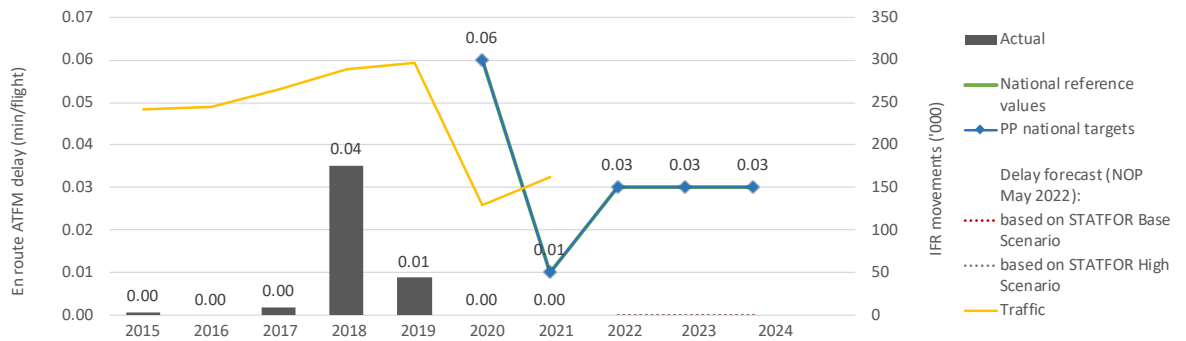
The PRB concludes that the capacity targets proposed by Latvia should be approved.

- Capacity profiles indicate a major capacity surplus over RP3, thus plans to further increase capacity in RP3 may be unnecessary.
- There is a lack of clarity as regards to the maximum applicable bonus in the en route capacity incentive scheme.
- Latvia should clarify the maximum applicable bonus parameter in the en route capacity incentive scheme.

3.2 En route ATFM delay per flight

Latvia

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+1%	+0.7%	+8.8%	+8.6%	+2.7%	-56.4%	+25.9%			
Actual delay/flight	0.00	0.00	0.00	0.04	0.01	0.00	0.00			
National reference values						0.06	0.01	0.03	0.03	0.03
PP national targets						0.06	0.01	0.03	0.03	0.03
Delay forecast*:										
Based on STATFOR High Scenario						-	0.00	0.00	0.00	
Based on STATFOR Base Scenario						-	0.00	0.00	0.00	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✔	✔	✔

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✔

Assessment of capacity enhancement measures and review against NOP

During RP2, Latvia experienced no capacity gap with the exception of 2018 when staffing issues created en route delays, although still below the national targets. Over the rest of the years, Latvia has registered close to zero delays.

The performance plan contains only generic description of the capacity enhancement measures, which are in line with the measures introduced in the NOP. :

- Ensuring appropriate ATCO staffing and different sectorization scenarios based on traffic flows,
- Changes in airspace structure.

The plan does not identify explicitly the investment project for modernisation of the ATM system as a capacity enhancement measure.

The planned number of ATCO FTEs shows a drop in 2021 to 2019 levels followed by 9% increase planned for 2022. During 2023 and 2024 the FTE numbers are planned to stay relatively stable until the end of the period affected by planned departures.

This sharp increase in 2021 is partly due to the re-employment of the staff that has been layed off/on furlough due to the COVID-19 pandemic. The decrease in 2021 is partially a respond to the traffic recovery volatility.

The introduced measures are estimated to support achieving the performance targets.

ATCO Planning (FTEs)

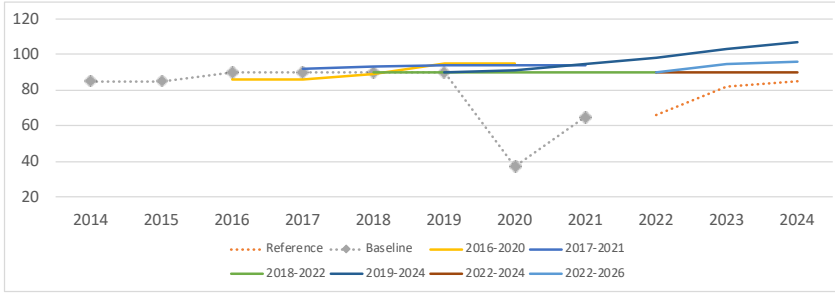
		2018A	2019A	2020A	2021A	2022P	2023P	2024P
Riga ACC (EVRR)	Additional ATCOs in OPS to start working in the OPS room	56	1	5	0	7	0	0
	ATCOs in OPS to stop working in the OPS room	0	1	1	2	2	1	1
	ATCOs in OPS to be operational at year-end	56	56	60	58	63	62	61
Total - LGS (en route)	Additional ATCOs in OPS to start working in the OPS room	56	1	5	0	7	0	0
	ATCOs in OPS to stop working in the OPS room	0	1	1	2	2	1	1
	ATCOs in OPS to be operational at year-end	56	56	60	58	63	62	61

2024 (end) - 2020 (beg.)
+5
+5

3.2.3 Review of previous and existing capacity profile plans per ACC



Riga ACC (EVRR)



- Historical data shows the increase of the baseline value by around 6% in 2016, while the baseline values remained stable during the rest of the period. The planned values were mostly in line with the baseline.

- The latest planned capacity profiles show an average annual growth of 3.3% over 2022-2024. The planned values are well above the reference profiles: Riga ACC is expected to have a major capacity surplus of 36% in 2022, 16% in 2023 and 13% in 2024.

- Given the size of the capacity surplus, plans to further increase capacity in RP3 may be unnecessary.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									66	82	85
Baseline	85	85	90	90	90	90	37	65			
2016-2020			86	86	89	95	95				
2017-2021				92	93	94	94	94			
2018-2022					90	90	90	90	90		
2019-2024						90	91	95	98	103	107
2022-2024									90	90	90
2022-2026									90	95	96
Latest vs Reference									36%	16%	13%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps

n/a

3.2.6 PRB Key Points

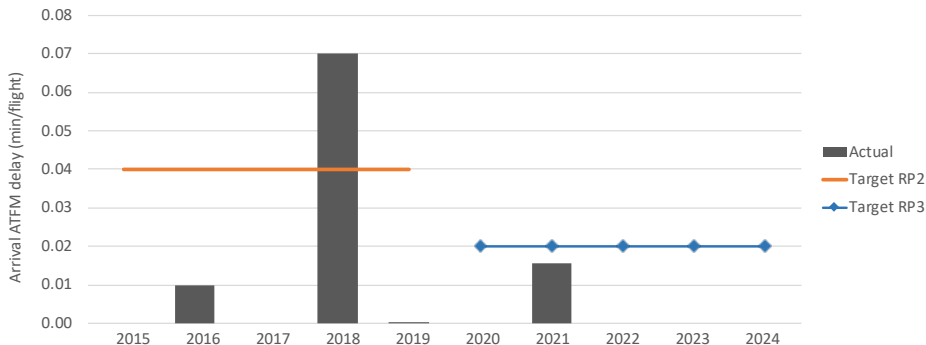


- The proposed national capacity targets are equal to the national reference values and are higher than the range of the delay forecast for 2022-2024.
- Latvia is expected to have a significant capacity surplus throughout 2022-2024.

3.3. Arrival ATFM delay per flight

Latvia

3.3.1 Overview of arrival ATFM delay per flight



	Target (RP2/RP3)											
	RP2	RP3	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level	0.04	0.02	0.00	0.01	0.00	0.07	0.00	0.00	0.02	-	-	-
Liepaja (EVLA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riga (EVRA)	0.00	0.01	0.00	0.07	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.02
Ventspils (EVVA)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

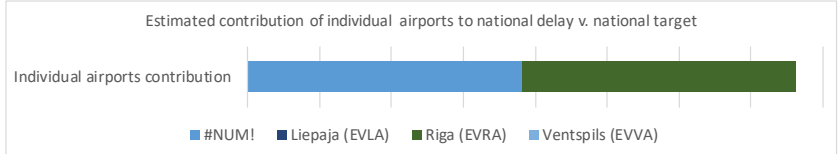
3.3.2 Review of targets and comparison with level and trend of past performance during RP2

Although Latvia includes three airports in the CZ affected by the performance plan, the traffic at Riga represents more than 99.6% of the terminal traffic, therefore driving the national performance. During RP2, there were almost no arrival ATFM delays registered at Riga, only in July 2018 there were some more regulations affecting the airport that made the national performance miss the target. In 2019 no delays at all were observed.

A-CDM implementation at Riga airport and implementation of PBN procedures at Riga and Liepaja are foreseen during RP3. The proposed targets for RP3 are in line with this absence of delays and represent a decrease with respect to RP2 targets by 50%. Ventspils does not even have ATC services.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Liepaja (EVLA)	0.00
Riga (EVRA)	0.02
Ventspils (EVVA)	0.00
National Target	0.02



According to the targets, Liepaja and Ventspils are not expected to generate any delays during RP3. Therefore, Riga is the only contributor in terms of delays (and almost the only contributor in terms of IFR movements), so the potential delay associated with Riga corresponds to the delay associated to the national target.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Liepaja (EVLA)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00
Riga (EVRA)	GROUP IV	0.00	0.02	+0.02	0.02	+0.00
Ventspils (EVVA)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

Riga, due to the delays observed in July 2018, shows slightly worse performance than similar airports during RP2. The other two airports did not generate any delays at all. The new targets are very close to the performance of similar airports that normally have no delays at all.

3.3.5 PRB Key Points

- There are three airports included in the performance plan. The national targets are set lower than in RP2 and are in line with average past performance.
- Riga represents 99.6% of the traffic, it is thus the main driver of the performance. All airports perform in line with the performance of the group of similar airports with Riga that is expected to perform marginally worse than zero delays as indicated by the targets.

3.4 Capacity Incentive schemes

Latvia

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.01 min	2.000%	2.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
NOP reference values			0.03	0.03	0.03
Alert threshold (Δ Ref. value in fraction of min)			±5.000	±5.000	±5.000
Performance Plan targets			0.03	0.03	0.03
Pivot values for RP3			0.03	0.03	0.03

Threshold and pivot value review

The pivot value is the reference value from the NOP. There is a dead band of +/-0.01 minutes around the pivot value before penalties / bonuses are applicable. The maximum penalty is applicable when the performance is > +0.05 minutes from the pivot value. A maximum bonus of 1% of determined costs is possible with zero delay, according to the graphic.

Modulation review

No modulation is applicable.

Review of financial advantages/disadvantages

The maximum bonus and maximum penalty are fixed at 2% of determined costs, however it is impossible for the bonus to exceed 1% according to the information provided in the performance plan, further clarification is required.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.01 min	2.000%	2.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±1.000	±1.000	±1.000
Performance Plan targets			0.02	0.02	0.02
Pivot values for RP3			0.02	0.02	0.02

Threshold and pivot value review

The terminal incentive scheme includes a dead band of +/-0.01 minutes per arrival (+/-0%) that might be just enough to allow small variations in the arrival ATFM delay with no resulting bonuses or penalties. The pivot value is not modulated and is equal to the national target, which represents very low delays with a reasonable margin.

Modulation review

Latvia has opted for pivot values based on the performance targets (not modulated).

Review of financial advantages/disadvantages

The scheme is symmetric with high maximum bonuses and penalties (2%) that, together with the narrow dead band and the reasonable target, make this a strong incentive scheme.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✓

En route:

- Latvia has chosen not to modulate the pivot values, which are set equal to the national reference values.
- The maximum bonus and penalty is set at 2%, however, based on the information provided in the performance plan, the maximum bonus is capped at 1%, as it is not possible to achieve negative delays.

Terminal:

- Latvia has chosen not to modulate the pivot values which are set equal to the national targets.
- The maximum bonus and penalty is set at 2%.

3.5 Investments

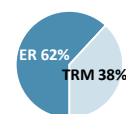
Latvia - LGS

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	5.3	6.0	5.9	6.9	6.1	30.4
	En route	3.3	3.7	3.8	4.4	3.6	18.8
	Terminal	2.0	2.3	2.2	2.5	2.5	11.6

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	New technical, ACC and tower building	Current ATC tower and ACC centre was built in 1974. During that time Riga Airport underwent major improvements, such as extension of runway, new terminal building which impair the visibility of the ATCOs and subsequently impair the safety at Riga Airport. In order to mitigate the risks, several new systems have been deployed. In addition, the current configuration of the ATC Tower at Riga airport prevents the introduction of remote TWR technologies. Further expansion of Riga Airport may be affected due to limited ATC Tower capacity in longer term. The construction works will be started at the end of the 2023. The technical and ACC buildings are outdated as they were built according to soviet standarts. The construction of new buildings will allow to receive cost saving in future.	34.1	No	No	0.5	0.8
2	Integration of new systems in Tech & TWR buildings	The investment assumes deployment of new TWR working positions integrating air traffic data and other advanced tower systems. The new systems will be developed and implemented in line with new ATC Tower configuration. Tower Integrated Working position consists of the set of different special TWR systems, which are integrated either technically or procedurally. The major aim of those systems is provide the safe and efficient control of take-offs, landings and movements of aircrafts on Riga aerodrome. Systems modernization will introduce the new technologies, which will help to improve the capacity and reduce the waiting and taxi time. Those measures will impact on fuel consumption and reduce CO2 emission. The new technical building will allow to introduce the enlarged data-center that is important in the light of future digitalisation.	8.0	No	No	0.0	0.0
3	ATC System modernization	Currently LGS operates air traffic control system named "ATRACC". According to ICAO practices ANSP should operate so called "fall-back" system in order to minimize the possible risks of system's outage. Several scenarios have been developed and Cost benefit analysis show that the most preferred option is to buy a new "dual" ATC system. Furthermore systems that are bought from biggest suppliers are easier and cheaper to maintain.	9.5	No	Yes	1.6	0.3
4	Radar modernization and WAM	Routine replacement of the SUR systems with systems capability improvements based on the evolution of surveillance technology	10.7	No	No	0.7	0.0
Total:						2.9	1.2

Airspace user feedback regarding major investments

In 2021, the airspace users raised questions about the increase of the asset base. Latvia clarified that all existing active agreements were honoured and thus some investments have started to depreciate in 2020. The airspace users also raised questions about the ATC System. The ANSP clarified that CBAs have been carried out, that showed capacity and financial benefits.

In 2022, airspace users requested further details regarding investments and the allocation of them between en route and terminal, which have been provided after the consultation.

Review of investments

New major investments represent 14% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 92% of the planned values for the same period and the amount underspent was 2.7M€. In terms of depreciation and cost of capital, the airspace users financed 10.9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	New technical, ACC and tower building	Network, local, non-performance	Safety, Environment, Capacity, Cost-efficiency	Safety: indirect. Environment: investment must be completed in order to implement rTWR technology. Capacity: increased capacity of both en route and terminal services. Cost-efficiency: will increase the UR for the life span of the investment.
2	Integration of new systems in Tech & TWR buildings	Local	Safety, Environment, Capacity, Cost-efficiency	Safety: indirect. Environment: investment must be completed in order to implement rTWR technology. Capacity: increased efficiency and thus capacity in terminal area. Cost-efficiency: will decrease the UR later due to increased efficiency.
3	ATC System modernization	Local	Safety, Capacity	Safety: indirect. Capacity: indirect.
4	Radar modernization and WAM	Local	Safety	Safety: capacity.

Additional information

Integration of new systems in Tech & TWR buildings: this investment directly relates to the number of ATM Master Plan objectives.

ATC System modernisation: such investment is partly related to CP-1 too, mostly because of necessity to foreseen the future TBO operations and SWIM.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	9.5	9.4	0.3	1.7	2.1	3.1	2.4	9.5
Existing investments			5.0	4.1	3.3	2.5	1.9	16.8

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls?

Riga ACC is expected to have a major capacity surplus in 2022 (36%) and this is expected to be gradually reduced to 13% in 2024.

The one major investment planned in Latvia during RP3 contributing to en route capacity is the ATC system modernisation investment. The investment is linked with PCP/CP1 ATM Functionalities related to trajectory based operations and SWIM, although the performance plan does not specify the actual ATM Functionalities. Additionally, the New technical, ACC and TWR building investment can be seen as an enabler for capacity growth. In the performance plan, Latvia recognises the New technical, ACC and TWR building investment as a direct capacity contributor and the ATC system modernisation investment as an indirect capacity contributor, but it can be argued that this should be the other way around.

The Integration of new systems in TECH & TWR buildings investment may yield capacity benefits in the airport/TMA domain and contributes to flexibility.

The ATC system modernisation investment contributes to resilience, scalability, and flexibility. The New technical, ACC and TWR building investment contributes to scalability and the remaining major investment Radar modernisation and WAM contributes to resilience.

Other (non-major) investments concern CNS/ATM support, AIS/AIM systems, airport MET systems, SWIM, NAV, and COM systems and infrastructure. An IT investment for data centre is planned, which can be expected to contribute to scalability and flexibility.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?

The ATC system modernisation investment details are not elaborated in the performance plan but it is referenced as a new system being bought from the 'biggest suppliers' and therefore can be expected to include state-of-the-art features and capabilities contributing to capacity enhancement. The New technical, ACC and TWR building investment can be seen as an enabler for capacity growth as it facilitates an increase in the number of ACC CWPs to take full advantage of the airspace structures that have been redesigned. The Integration of new systems in TECH & TWR buildings investment introduces new TWR CWPs with integrated data and advanced controller tools.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?

The capacity surplus in Latvia is decreasing during RP3 but should still be sufficient at the end of the period. However, the three (including airport/TMA) capacity contributing major investments are not planned to enter into operations until 2027 and ATM-system implementation related projects and investments are sensitive to delays. Therefore, monitoring of the situation is required to ensure en route capacity availability beyond RP3.

3.5.4 PRB Key Points

- The actual CAPEX for RP2 was 92% of the planned values for the same period and the amount underspent was 2.7M€. The airspace users financed 10.9M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.
- Latvia expects a significant capacity surplus in the beginning of RP3 (48%), reducing to 15% by the end of RP3.
- Two major investments (linked to unidentified PCP/CP1 ATM Functionalities) will contribute to en route capacity, one directly and the other indirectly. These investments also contribute to resilience, scalability, and flexibility.
- Other investments contribute to scalability and flexibility.

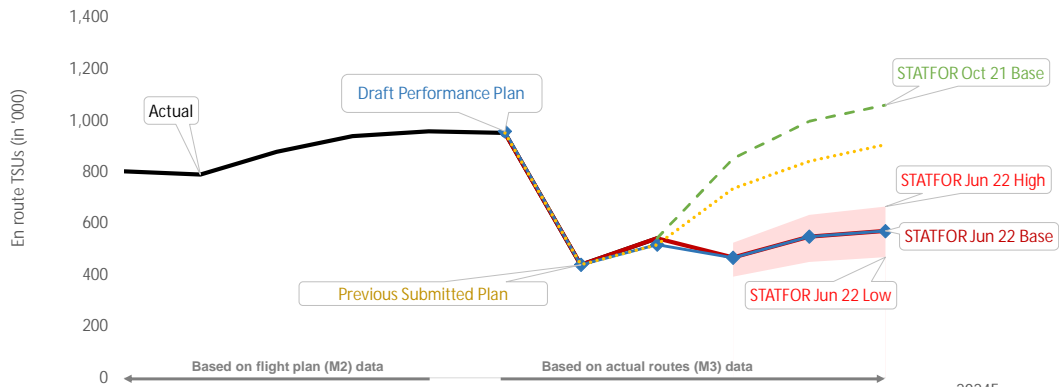
LATVIA

Cost-efficiency KPA

4.2 Review traffic forecasts and baseline

Latvia - En route CZ

4.2.1 Overview of service units forecasts for RP3



	2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	802	789	877	938	958	439	542				
Annual change	%		-1.6%	+11.2%	+7.0%	+2.0%	-53.8%	+23.4%				
STATFOR Jun 22 Base	'000 TSUs								466	548	570	-40.1%
Annual change	%								-14.0%	+17.5%	+4.1%	
STATFOR Oct 21 Base	'000 TSUs								852	997	1,060	+11.4%
Annual change	%								+57.2%	+17.0%	+6.3%	
Performance Plan	'000 TSUs					958	439	517	466	548	570	-40.5%
Annual change	%					+2.0%	-54.1%	+17.7%	-9.9%	+17.6%	+4.0%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019	958	-0.64%
2019B (PP baseline, M3)	958	
2019A (as in the Reporting tables, M2)	958	
2019B/ 2019A	0.00%	-0.64%
2014	767	-0.64%
2014B (PP baseline)	767	
2014A (as in the Reporting tables, M2)	767	
2014B/ 2014A	0.00%	-0.64%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

For both the 2014 traffic baseline and the 2019 traffic baseline, there is no adjustment corresponding to the M2/M3 CRCO correction factor (over 12 months) which is -0.64%. In addition, there is no adjustment of the 2014 and 2019 traffic baselines to account for the change in recording of TSUs for "NINTA-ADAXA" (around +20,000 TSUs for Lithuania and -20,000 TSUs for Latvia).

Review of 2014 and 2019 traffic baseline

There is no adjustment to both the 2014 and 2019 traffic baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

Latvia uses STATFOR June 2022 forecast. The current situation in Latvia is heavily impacted by Russia's war of aggression against Ukraine and the sanctions imposed. As a result, the traffic forecast since October 2021 is heavily downgraded. STATFOR forecast does not anticipate substantial improvements till the end of RP3. Latvia tends to agree with this outlook, however the magnitude of the drop may still vary in both directions. Furthermore, the outbreak of Russia's war of aggression against Ukraine changed the flight patterns, average MTOW, and distance flown reduced sharply. As a consequence, the total number of service units in 2022–2024 is -46% compared to October's STATFOR forecast (although Latvia deemed it to be overstated due to wrong calculation of service unit per flight).

Russia's war of aggression against Ukraine comes on top of the COVID-19 pandemic. The number of service units in 2024 is expected to be -40.5% lower than those recorded in 2019 and -25.7% lower than in 2014.

The number of flights is also been affected, although not so severely (25% decrease in 2024 compared to 2019).

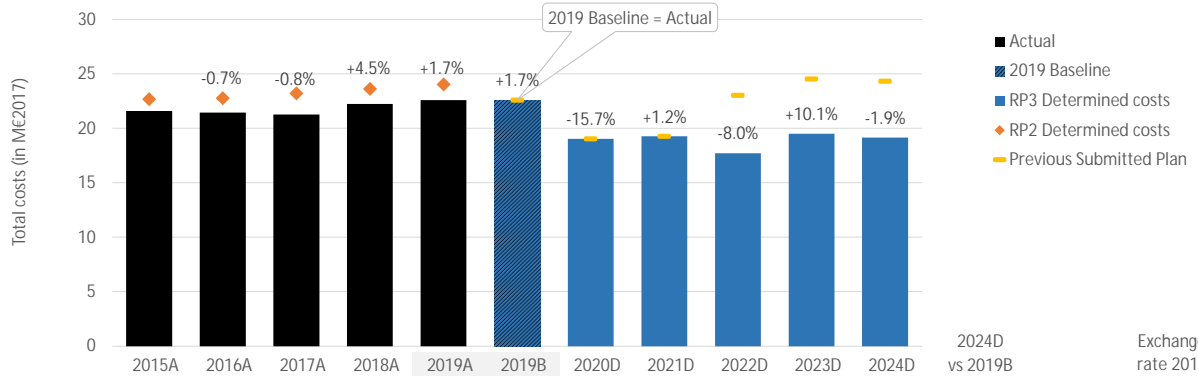
4.2.4 PRB Key Points

- The 2014 and 2019 traffic baseline are not adjusted for the change in distance factor (-0.64%, or around -5,000 and -6,000 service units), nor adjusted for the change due to "NINTA-ADAXA" (circa -20,000 service units).
- Latvia en route traffic forecast is in line with STATFOR June 2022.
- The current situation in Latvia is heavily impacted by Russia's war of aggression against Ukraine and the sanctions imposed. As a consequence, the total number of service units in 2022–2024 is lower by -46% compared to October's STATFOR forecast.

4.3 Review of determined costs and baseline

Latvia - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



	M€ (nom)	2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B
Total costs	M€ (nom)	21	21	21	23	23	23	20	20	20	23	23	-2.8%
Annual change	%		-0.6%	+1.0%	+6.5%	+3.7%	+3.7%	-15.8%	+2.6%	-1.2%	+13.2%	+0.5%	+21.6%
Inflation index	2017 = 100	97.1	97.2	100.0	102.6	105.4	105.4	105.5	107.7	119.7	124.3	128.1	
Total costs	M€ (2017)	22	21	21	22	23	23	19	19	18	20	19	-15.3%
Annual change	%		-0.7%	-0.8%	+4.5%	+1.7%	+1.7%	-15.7%	+1.2%	-8.0%	+10.1%	-1.9%	-15.3%
Total costs	M€ (2017)	22	21	21	22	23	23	19	19	18	20	19	-15.3%

Exchange rate 2017	€:€
	1.00000

Is inflation in PP in line with IMF (April 2022 forecast)? Deviation from index < 1p.p. in 2024

Difference from 2020 (0.1% EUROSTAT vs 0.08% in the reporting tables).

4.3.2 Baseline review ✘

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 No adjustments applied to 2014 and 2019 cost baselines.

2014/2019 baseline analysis

The 2014 cost baseline and the 2019 cost baseline are equal to the 2014 actual costs and 2019 actual costs respectively. Following a question at the consultation of the performance plan on the treatment of the costs related to "NINTA – ADAXA" (Vilnius FIR), it was explained that these are "part of the Lithuanian cost base, and proportionally (2%) deducted from the ANSP en route costs on those services that are rendered there. No double accounting of costs exists." This is understood to be the case from 2020 onwards, however there may be a need to adjust the 2014 baseline costs and 2019 baseline costs to ensure comparability/consistency with the 2024 planned costs.

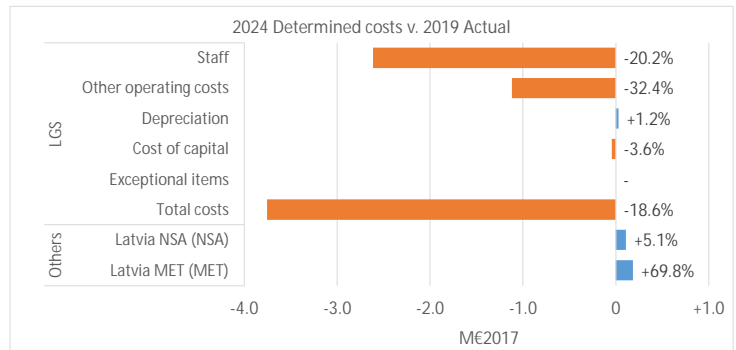
4.3.3 Review of the RP3 determined costs and incentives



Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+1.7	+9.7%

Review of cost elements	
✓ Investments (see details in 3.5)	
ⓘ Cost of capital (see details in 4.3.1)	
ⓘ Pension costs (see details in 4.3.2)	
✓ Allocation ER-TCZ methodology (see details in 4.3.3)	

Incentives (see details in 3.4)	
Traffic risk sharing parameters modulated?	Yes
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	2.00%
Maximum penalty (% of determined costs)	2.00%
Additional incentives?	No



The total costs of Latvia is planned to decrease by -15.3% (-3.5M€2017), between 2019 actuals and planned 2024. The main contributor to this planned decrease in costs is LGS (-18.6%, or -3.8M€2017 overall).

For LGS, the main ANSP, except for the depreciation costs, all cost items are planned to be lower in 2024 than in 2019 (overall: -18.6%, or 3.8M€2017). The decrease is mainly driven by lower staff costs (-20.2%, or -2.6M€2017) and other operating costs (-32.4%, or -1.1M€2017).

- The staff costs decrease is reported to be due to the reduction of staff, reduction of variable pay, and the reduction of workloads as a response to COVID-19. At the same time, LGS kept most of ATCOs and ATSEPs in order to cope with the possible and anticipated end of pandemic. In 2022, in wake of Russia's war of aggression against Ukraine, LGS continues cost-saving efforts as the decrease of FTEs while allowing to maintain future capacity for the possible end of the crisis.

- Other operating costs are currently scaled back to levels that do not impede safety. Many cost items, especially related to personnel costs, are expected to remain lower than actual 2019 levels due to staff layoffs made during the COVID-19 pandemic.

The other MET service provider (as LGS is also providing MET services) and the NSA, both plan higher costs in 2024 than in 2019 (+69.8%, or +0.2M€2017 and +5.1%, or +0.1M€2017, respectively).

Overall, the revised determined costs have been revised downwards by -23% for 2022, by -20% for 2023, and by -21% for 2024, compared to the performance plan submitted in November 2021 (-15.5M€2017, or -21.5% in total for the 3-year period 2022-2024). The current situation in Latvia is heavily impacted by Russia's war of aggression against Ukraine and the sanctions imposed. As a result, the total number of service units in 2022-2024 is -45.5% compared to October's STATFOR forecast. For more details see section 4.2 of this document.

4.3.4 PRB Key Points



- There are no adjustments to the cost baselines. However, the baselines should be adjusted by the costs related to the NINTA-ADAXA to ensure comparability/consistency with the 2024 planned costs.
- Between 2019 and 2024, the total costs for LGS are planned to decrease by -18.6% (or -3.8M€2017).
- All costs categories of LGS, with the exception of depreciation costs, are planned to decrease.
- In RP2, in terms of depreciation and cost of capital, airspace users have financed 11M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

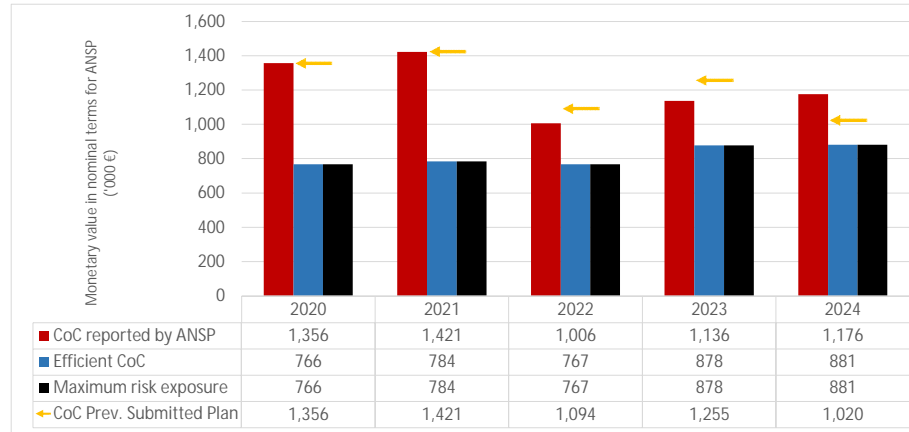
4.3.A Cost of capital

LGS - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	17,419	17,821	17,439	19,954	20,014
Monetary value of Return on Equity	1,356	1,421	1,006	1,136	1,176
Ratio RoE/DC (%)	7.8%	8.0%	5.8%	5.7%	5.9%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Total 2020-2024	2,019
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Difference CoC reported by ANSP vs Efficient ('000 €)	2020	2021	2022	2023	2024
	590	637	239	258	295

4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	6.6%	n/a	6.6%	n/a	5.0%	n/a	5.0%	n/a	5.0%	n/a
Interest on debts	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a
Capital structure (% debt)	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a	0.0%	n/a
WACC	6.6%	3.7%	6.6%	3.6%	5.0%	3.8%	5.0%	3.9%	5.0%	3.7%

Is the interest on debts in line with the market?	n/a
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- LGS is currently fully financed through equity. However, loan facilities are planned to be at their disposal as of 2022. In case these loan facilities will be put in place, keeping constant the WACC will lead to a higher embedded return on equity.
- The WACC reported in the performance plan has been calculated based on the CAPM. The efficient cost of capital has been computed in line with the maximum risk exposure (based on option 4).
- Over RP3, the reported cost of capital is 2.0M€ above the efficient cost of capital. Moreover, the monetary value of the return on equity is not commensurate to the total determined costs over RP3 (ranging between 5.7% to 8.0%).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	19,716	20,441	19,170	20,200	22,250
Net current assets	833	1,087	970	2,540	1,250
Adjustments total assets	0	0	0	0	0
Total asset base	20,549	21,528	20,140	22,740	23,500

- The fixed asset base is planned to increase over RP3, in line with the increase in investments described in section 3.5 of this document.
- The net current assets do not seem to present major issues.
- The RAB does not include adjustments to the total asset base.
- The total asset base is planned to increase over RP3, mainly due to the increase in the fixed asset base.

4.3.A.5 PRB Key Points

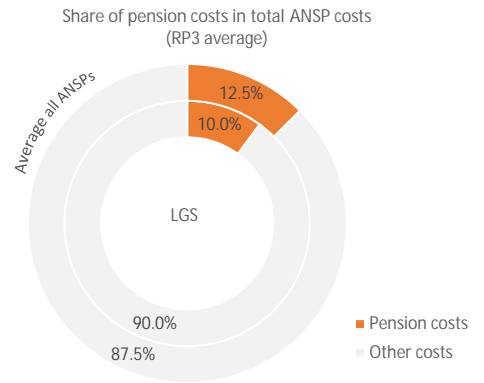
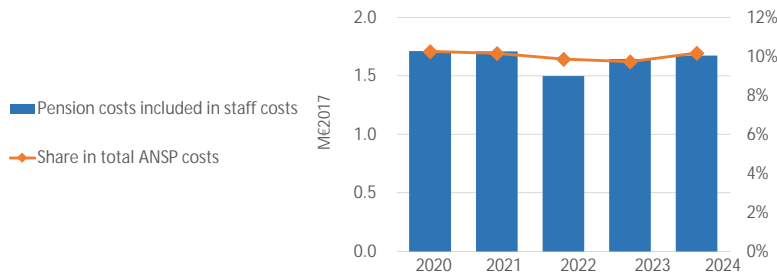


- Over RP3, the reported cost of capital is slightly (2.0M€) above the efficient cost of capital.
- The monetary value of the return on equity is not commensurate to the total determined costs over RP3 (ranging between 5.7% to 8.0%).

4.3.B Pensions

LGS - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	M€2017	2020	2021	2022	2023	2024
Pension costs included in staff costs		1.7	1.7	1.5	1.6	1.7
Year on year variation	% change		-0.3%	-12.4%	+9.8%	+1.9%
Share in total ANSP costs	%	10.3%	10.1%	9.9%	9.7%	10.2%
Year on year variation	p.p.		-0.1p.p.	-0.3p.p.	-0.1p.p.	0.4p.p.

What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Slight decrease**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables?	No
For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024?	No
For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024?	n/a
For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024?	n/a

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

"Political decision, can not be controlled." Currently the State pension scheme applies to all employees, irrespective of their salary. 20% of gross salary is paid towards the pension scheme.

4.3.B.4 PRB Key Points

- The proportion of pension costs is below the Union-wide average.
- Only the State pension is reported, no specific risk management actions reported.

4.3.C Methodology for cost allocation between ER and TRM

Latvia

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Latvia did not mention changing the cost allocation methodology with respect to RP2.
- Costs are directly allocated to the charging zone depending on the zone in which they incurred.
- Costs incurred in both charging zones are allocated based on statistical criteria, such as kilometres flown in the area, number of flights, expert ratios, and proportion of directly incurred expenses.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

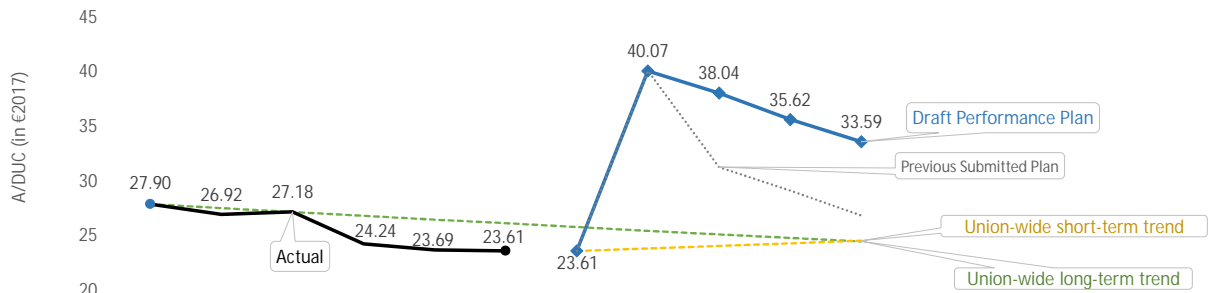


- Latvia did not mention changing the cost allocation methodology with respect to RP2.
- No major issues identified.

4.4 Determined unit costs (DUC)

Latvia - En route CZ

4.4.1 Overview and trends of the DUC



	2014B	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D	CAGR 2014B-2024D
DUC	€2017	27.90	26.92	27.18	24.24	23.69	23.61	23.61	40.07	38.04	35.62	33.59	
Annual Change	%		-3.5%	+0.9%	-10.8%	-2.3%	-0.4%	-0.4%	+70%	-5.1%	-6.4%	-5.7%	+9.2%
Union-wide target	%								+120%	-38.5%	-13.2%	-11.5%	+2.1%

4.4.2 DUC consistency ✓

✗ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan +9.2%	Union-wide +1.0%	Difference +8.2p.p.
✗ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	+2.1%	-1.3%	+3.4p.p.
✓ DUC level consistency	2019 baseline	Performance Plan 23.61	Average comparator group 28.51	Difference -17.2%

- The DUC is planned to increase on average by +9.2% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to increase on average by +2.1% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -17.2% lower than the average of the comparator group.

When considering the STATFOR October 2021 base forecast:

- The DUC would decrease on average by -6.5% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC would decrease on average by -4.7% between 2014 and 2024, which is better than the long-term Union-wide trend (-1.3%).

4.4.3 Analysis of the DUC deviation for achieving the capacity targets n/a

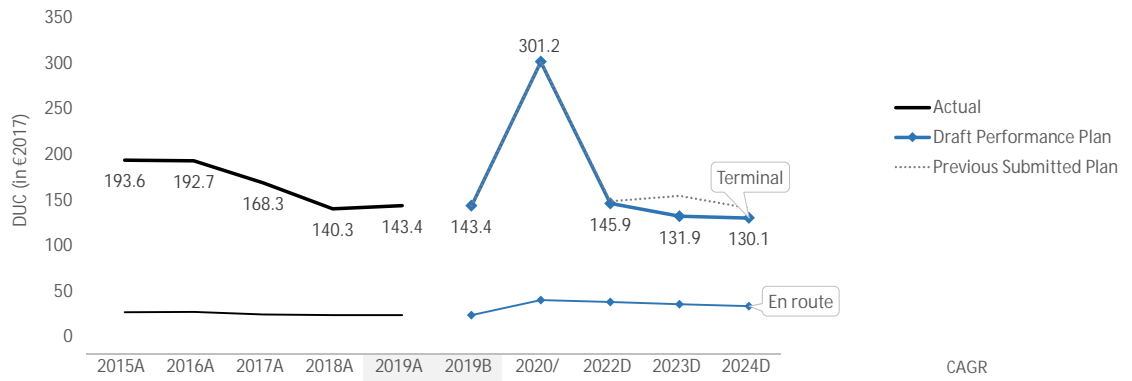
4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

4.4.5 PRB Key Points ✓

- Latvia has been heavily impacted by Russia's war of aggression against Ukraine.
- The decrease in traffic forecasted for the remaining years of RP3 would not allow Latvia to meet the short and long trends without a drastic and unrealistic decrease in costs.
- The PRB recommends the Commission to consider these external factors when assessing Latvia by applying the STATFOR October 2021 base forecast for the calculation of the trends.
- When considering the STATFOR October 2021 base forecast for the calculation of the trends:
 - Latvia is consistent with the RP3 DUC trend in terms of average reduction.
 - Latvia is consistent with the DUC long-term Union-wide trend.
 - Latvia is consistent with the average DUC baseline of the comparator group.

4.5 Terminal

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/ 2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	193.6	193.6	192.7	168.3	140.3	143.4	143.4	301.2	145.9	131.9	130.1	-2.4%
Annual Change	%		-0.4%	-12.7%	-16.6%	+2.2%	+2.2%	+110%	-51.6%	-9.6%	-1.4%	
DUC - En route	26.9	26.9	27.2	24.2	23.7	23.6	23.6	40.1	38.0	35.6	33.6	+9.2%
Annual Change	%		+0.9%	-10.8%	-2.3%	-0.4%	-0.4%	+70%	-5.1%	-6.4%	-5.7%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Riga (EVRA)	GROUP IV	659.2	155.5	-76.4%	807.8	161.9	-80.0%
Liepaja (EVLA)	GROUP IV	659.2	374917.8	+56712.7%	807.8	4341.3	+431.4%
Ventspils (EVVA)	GROUP IV	659.2	9846.4	+1393.6%	807.8	6054.6	+649.6%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

All three airports composing the terminal charging zone are in the Group IV (below the 80,000 IFR movements threshold). Only Riga airport (EVRA) average DUC is planned to be below (-80.0%) the median DUC of the comparator over RP3, while for EVLA (4341.3€) and EVVA (6054.6€), the average DUC will be significantly above the median of the comparator group of airports.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

Both the 2019 baseline traffic and costs are in line with the actual values as presented in the terminal reporting tables.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

The selected forecast underpinning the proposed terminal ANS cost-efficiency targets for RP3 is in line with STATFOR June 2022 base forecast.

Determined costs (terminal)

1 Is inflation in PP in line with IMF (April 2022 forecast)?

Deviation from index < 1p.p. in 2024

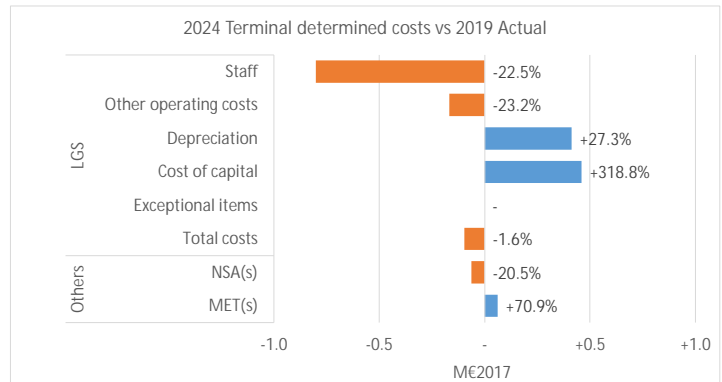
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+0.3	+5.3%

Cost elements - LGS (terminal)

- ✓ Investments (see details in 3.5)
- ① Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ① Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	Yes
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	2.00%
Maximum penalty (% of determined costs)	2.00%
Additional incentives?	No



- The share of terminal investment costs (38%) is higher than the share of terminal total costs (25%).
- Terminal WACC and its parameters are equal to the ones for en route.
- The share of terminal pension costs in total pension costs (20%) is lower than the share of terminal costs in total determined costs (25%).
- Total costs in 2024 are planned to be (-1.5%, or -0.1M€2017) below the 2019 level. For LGS, the decrease of costs between 2019 and 2024 is related to lower staff costs (-22.5%, or -0.8M€2017), as for en route, and lower other operating costs (-23.2%, or -0.2M€2017). On the other hand, depreciation costs (+27.3%, or +0.4M€2017) and cost of capital (+318.8%, or +0.5M€2017, as a result of the return on equity increase from 1.4% to 5.0% between 2019 and 2020) are planned to be higher in 2024 than in 2019. A detailed analysis of investments is provided in section 3.5 of this document.
- The selected forecast for terminal RP3 is in line with STATFOR June 2022 base forecast.
- Overall, the revised determined terminal costs have been revised downwards by -14.6% for 2022, -12.8% for 2023 and by -8.3 for 2024, compared to the performance plan submitted in November 2021 (-2.4M€2017, or -11.8% in total for the 3-year period 2022-2024) while the forecast TSUs have been revised downwards by -3.7%.

4.5.4 PRB Key Points



- The terminal RP3 DUC trend is -2.3%, which is better than the en route RP3 DUC trend of +9.4%.
- The terminal RP3 DUC trend is -2.3%, which is worse than the terminal RP2 DUC trend of -7.2%.
- Riga, the main airport, had a DUC -76.4% lower than the median of its comparator group over RP2. The difference is expected to be -80.0% over RP3.
- Latvia used the STATFOR June 2022 base forecast for terminal traffic, as for en route.
- Terminal costs of LGS are planned to decrease over the period, due to a decrease in staff and other operating costs.

PRB Assessment

MALTA

Draft Performance Plan

Context and scope

Malta

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6001, F6008, F6010, F6502, F6503, F6504, F6505, F6506, F6507

Relative weight compared to the SES area (2019):

- % Flight-hours vs SES 0.6%
- % Serv. Units vs SES 0.8%
- % Costs vs SES 0.4%

Scope

FAB: BLUE MED FAB

ANSPs: Malta Air Traffic Services Ltd.
 Malta International Airport Plc.

Other entities (as per Article 1(2) last para. of Regulation 2019/317): -

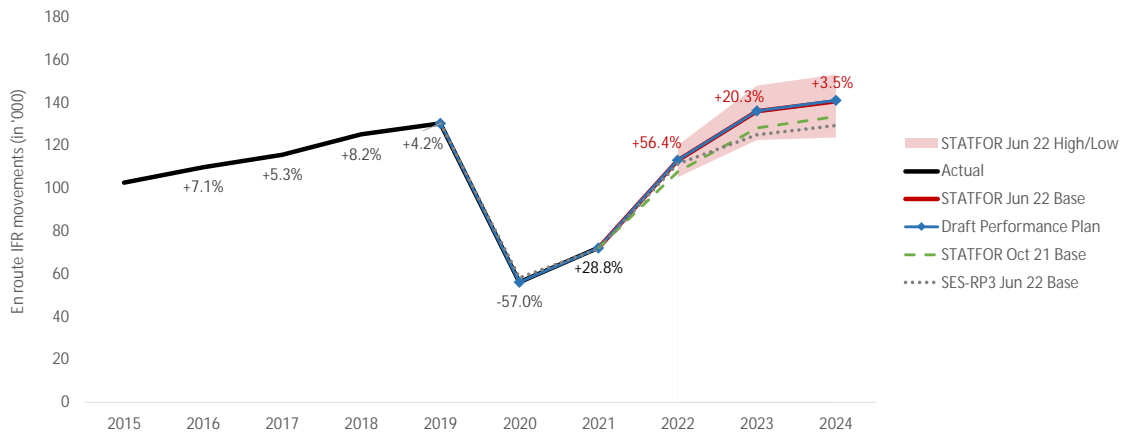
Air Navigation
 Malta Airport

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Malta	n/a	No	No	No	
Terminal (TRM)	Malta - TCZ	1	No	No	No	
Changes in the CZs from RP2	No					

Comparator group: Group D Other States in the comparator group: Cyprus, Estonia, Greece, Latvia, Lithuania

Currency: € Exchange rate: 1.00000

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
MATS	Safety policy and objectives	C	C	C	C	D
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	D
	Safety promotion	C	C	C	C	D
	Safety culture	C	C	C	C	C

Previous submitted PP

MATS	Safety policy and objectives	C	C	C	C	D
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	D
	Safety promotion	C	C	C	C	D
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Malta should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	1.46%	1.82%	1.80%	1.80%	1.80%
Previous submitted PP	-	1.82%	1.80%	1.80%	1.80%

PRB assessment

The PRB concludes that the environment targets proposed by Malta should be approved.

- Malta's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Malta did not achieve the 2021 target of 1.82% in its performance plan. Due to insufficient environmental performance in past years and lack of measures introduced to achieve RP3 targets, Malta remains on the PRB's watchlist for further scrutiny during the annual monitoring process.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.02	0.01	0.01	0.01	0.01
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.00	0.01	0.01	0.01	0.01
Previous submitted PP (en route)	0.02	0.01	0.01	0.01	0.01
Previous submitted PP (terminal)	0.00	0.01	0.01	0.01	0.01

PRB assessment

The PRB concludes that the national capacity targets proposed by Malta should be approved.

- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk.

4. Cost-efficiency



Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	44.08	27.44	21.61	22.09	-1.0%	+0.3%
Target for determined unit cost (DUC) (€2017) - Terminal	300.69	173.37	159.00	166.65	+5.0%	n/a
Previous submitted PP (en route)	44.08	31.85	24.83	24.85	+2.0%	+1.6%
Previous submitted PP (terminal)	300.69	166.67	168.46	162.10	+4.3%	n/a

PRB assessment

The PRB concludes that the cost-efficiency targets proposed by Malta should be approved.

- Malta is consistent with the RP3 DUC trend in terms of average reduction.
- Malta is not consistent with the long-term Union-wide DUC trend.
- Malta is consistent with the average DUC baseline of the comparator group.

5. PRB recommendations**ENVIRONMENT**

- Malta should ensure it implements all relevant project outlined in the June 2021 ERNIP.

CAPACITY

- Malta should revise the incentive schemes so that they have a material impact on the revenues.

COST-EFFICIENCY:

- Malta should consider in the RP3 cost base the 5M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Malta should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends, or should revise terminal RP3 cost-efficiency targets downwards.

6. PRB recommendations from the performance plans submitted in November 2021**ENVIRONMENT**

- Malta should ensure it implements all relevant project outlined in the June 2021 ERNIP.

CAPACITY

- Malta should revise the incentive schemes so that they have a material impact on the revenues.
- Malta should ensure that the incentive scheme does not penalise the ANSP for a performance which is in line with the national targets.

COST-EFFICIENCY

- Malta should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Malta should consider in the RP3 cost base the 5M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Malta should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends, or should revise terminal RP3 cost-efficiency targets downwards.

MALTA

Safety KPA

1.1 Summary of safety key data and assessment results

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were met in 2021.

1.1.2 Measures planned to reach the target (if applicable)

MATS has already achieved required level of EoSM in all five management objectives.

The performance plan lists measures in the context of "2020 Safety Performance Report". The measures are considered relevant and sufficient to maintain safety levels over RP3.

1.1.3 Interdependencies and Trade-offs

The performance plan underlines that MATS monitors safety impact of any changes to ATM functional system via integrated Safety, Quality and Security Management System. The safety level will be assured by currently implemented safeguards.

1.1.4 Change Management

Malta applies specific change management, compliant with Commission Implementing Regulation (EU) 2017/373 for the major implementations.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Malta should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

1.2 Targets for EoSM for ANSPs and Measures

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
		Actual	Actual	Target	Target	Target	Target	Target		
MATS	Safety policy and objectives	D	D	C	C	C	C	D	✓	
	Safety risk management	D	D	C	C	C	C	D	✓	
	Safety assurance	C	D	C	C	C	C	D	✓	
	Safety promotion	D	D	C	C	C	C	D	✓	
	Safety culture	C	D	C	C	C	C	C	✓	

The EoSM targets have been defined for each year. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are met in 2021.

The performance plan lists various measures in the context of "2020 Safety Performance Report", the measures include:

- Updates to improve the risk management derived from barrier model (Bow-Tie methodology);
- Human resource support in the area of cyber security which has direct impact on the safety risk landscape;
- Training for the risk assessors in this area and enrolling them on NEASOG /SAFOPS; and
- Specific training on risk assessing in the context of change management according to Commission Implementing Regulation (EU) 2017/373.

The measures are considered relevant and sufficient to maintain safety levels over RP3.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

No new implementation is required to achieve the RP3 safety targets. The safety level will be maintained with standard procedures of safety management system. The interdependencies between safety and other KPAs are monitored via integrated Safety, Quality, and Security Management System. The trade-off with respect to safety is not allowed by MATS. The NSA reviews the levels of resources required for safety activities via the audit and inspections.

1.3.2 Change Management Practices

The major changes in Malta: Contingency Operational room, deployment of ADS-B coverage in the entire Malta FIR, and modernisation of ground-ground communication infrastructure are accompanied with specific change management procedures compliant with Commission Implementing Regulation (EU) 2017/373. MATS 's change management procedure was approved by the CA and reviewed and accepted by EASA in the latest inspection (December 2020 and October 2021).

MALTA

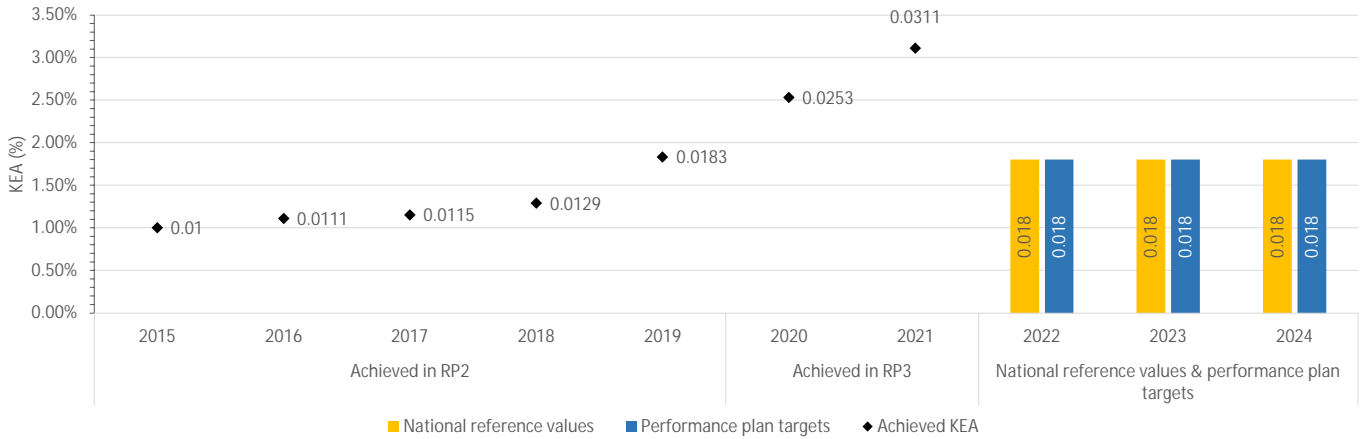
Environment KPA

2.1 Summary of Key Data and Assessment Results

Malta

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	1.46%	1.82%	1.80%	1.80%	1.80%
Performance plan targets	1.46%	1.82%	1.80%	1.80%	1.80%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Malta should be approved.

- Malta's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Malta did not achieve the 2021 target of 1.82% in its performance plan. Due to insufficient environmental performance in past years and lack of measures introduced to achieve RP3 targets, Malta remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- Malta should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Malta

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
Free route airspace (FRA) from FL305 to FL660 was introduced in the Malta flight information region (FIR) in December 2016, however the ATS route network was retained below this. MATS plans to implement the final stage of free route airspace by lowering the FRA level to FL195 in 2022.		3.2.1(c)	Page 48
Major ERNIP 2021 Recommended Measures:	3	Reference in PP	Reference in ERNIP
Measure included within performance plan?		3.2.1(c)	Page 152
Free route airspace Malta – phase 3c	✓	3.2.1(c)	Page 200
INTRAC phase 2	✓	n/a	Page 220
CB FRA operations	✗		
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

The chart in section 2.1.1 shows that Malta achieved a KEA of 2.53% in 2020. In 2021, Malta reached a KEA of 3.11% which means it did not achieve the 2021 target of 1.82% in its performance plan.

Malta's horizontal en route flight efficiency (KEA) has been significantly deteriorating since 2015, which indicates that the introduction of free route airspace (FRA) and significantly lower traffic due to the pandemic did not affect this trend. Considering the historical KEA data, it seems that Malta may not achieve the targets for the rest of RP3.

Malta committed to two main initiatives to improve KEA performance: lowering the FRA limits to FL195 and designing new terminal manoeuvring area (TMA), arrival and departure procedures. However, Malta did not commit to cross-border FRA (CB FRA) with Italy which has the potential to further improve the environmental performance. It is important that this project is implemented as recommended in the ERNIP.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Malta plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

MALTA

Capacity KPA

3.1 Summary of capacity key data and assessment results

Malta

3.1.1 En route ATFM delay

The capacity targets proposed by Malta are set equal to the national reference values and are marginally above the range of the delay forecast, which is zero minute. The capacity plans indicate that Malta will have sufficient capacity to accommodate to the forecasted traffic demand.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Malta airport is the only airport included in the performance plan. The national targets are set considerably lower than in RP2. Historical performance on average has been in line with RP3 targets.

The performance at Malta airport is expected to be in line with that of the group of similar airports.

3.1.3 Incentives

En route:

Malta has chosen not to modulate the pivot values and set them equal to the national reference values.

No bonus is possible and the maximum penalty is set at 0.5%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

Malta has chosen to modulate the pivot values and set them at 0.00 minutes per flight for all years, higher than the national target (0.01 minutes per flight).

No bonus is possible and the maximum penalty is set at 0.25%.

The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.1.4 Investments

Malta did not plan any new major investments for RP3.

The actual CAPEX for RP2 was 40% of the planned values for the same period and the amount underspent was 16.7M€.

There is no capacity surplus/shortage in Malta during RP3.

There are no capacity enhancing investments planned for RP3.

3.1.5 PRB conclusions

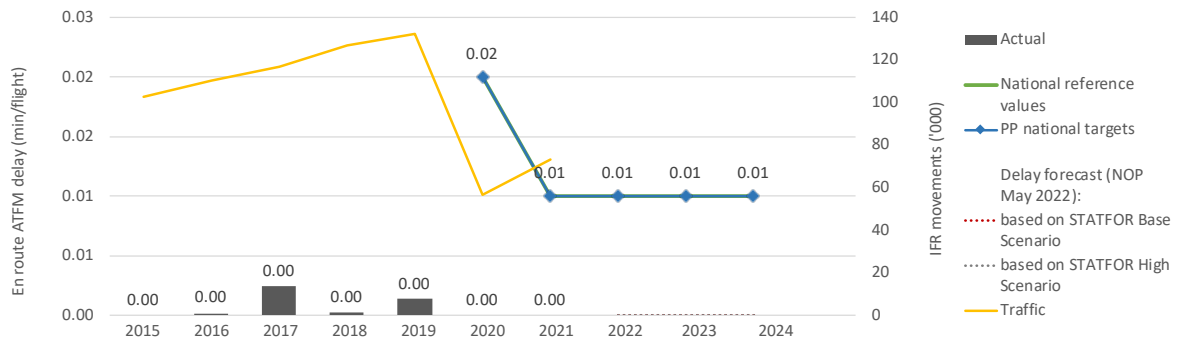
The PRB concludes that the national capacity targets proposed by Malta should be approved.

- The incentive schemes defined in the draft performance plan do not have a material impact on the revenue at risk.
- Malta should revise the incentive schemes so that they have a material impact on the revenues.

3.2 En route ATFM delay per flight

Malta

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+1%	+7.4%	+5.8%	+8.4%	+4.5%	-57.2%	+29.3%			
Actual delay/flight	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
National reference values						0.02	0.01	0.01	0.01	0.01
PP national targets						0.02	0.01	0.01	0.01	0.01
Delay forecast*:										
Based on STATFOR High Scenario						-	0.00	0.00	0.00	
Based on STATFOR Base Scenario						-	0.00	0.00	0.00	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✔	✔	✔

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✔

Assessment of capacity enhancement measures and review against NOP

During RP2, Malta experienced no capacity gap or constraints, registering zero or near-to-zero (2017 and 2019) minutes of average en route ATFM delays and meeting the capacity targets well below the planned values.

The performance plan identifies the full FRA implementation project (above FL305) and sector capacity enhancement. The measures are in line with the current NOP 2022-2026. The performance plan includes CPDLC in other main investment section, which could be considered a capacity enabler as well.

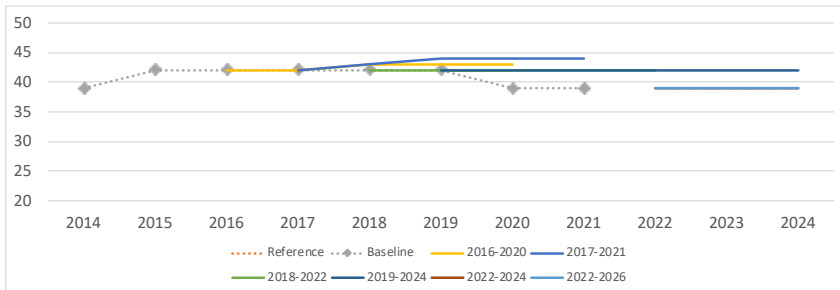
The planned number of ATCOs in OPS FTEs shows an increase of 6 (16%) compared to 2019, which is planned to be realised in 2022. The performance plan refers to an additional 5-5 ATCO recruits in 2022 and 2024, who will be assigned to TWR positions.

ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Malta ACC (LMMM)	Additional ATCOs in OPS to start working in the OPS room	0	2	0	1	10	0	0	+6
	ATCOs in OPS to stop working in the OPS room	2	1	2	1	1	1	0	
	ATCOs in OPS to be operational at year-end	31	32	30	30	39	38	38	
Total - Malta Air Traffic Services Ltd. (en route)	Additional ATCOs in OPS to start working in the OPS room	0	2	0	1	10	0	0	+6
	ATCOs in OPS to stop working in the OPS room	2	1	2	1	1	1	0	
	ATCOs in OPS to be operational at year-end	31	32	30	30	39	38	38	

3.2.3 Review of previous and existing capacity profile plans per ACC ✔

Malta ACC (LMMM)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference											
Baseline	39	42	42	42	42	42	39	39	39	39	39
2016-2020			42	42	43	43	43				
2017-2021				42	43	44	44	44			
2018-2022					42	42	42	42	42		
2019-2024						42	42	42	42	42	42
2022-2024									39	39	39
2022-2026									39	39	39
Latest vs Reference									0%	0%	0%

- Historical data shows flat baseline values following a one-off increase in 2015. The baseline and planned values are consistent in most of the years.

- The latest planned capacity profiles show no increase over the period, in line with the reference profile, and resulting in slightly lower values than those of 2019.

- Malta ACC has sufficient capacity and is not expected to experience a capacity gap in RP3.

- There may be an inconsistency between the planned capacity profiles and the increase in the number of ATCOs in OPS FTEs included in the performance plan.

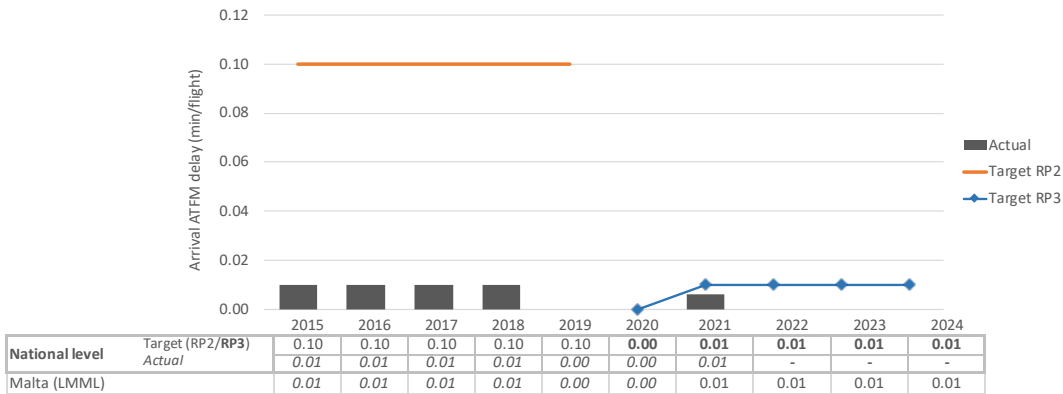
3.2.4	Review of capacity enhancement measures related to mitigating higher delays due to significant / special events	n/a
3.2.5	Review of the measures to increase capacity and address capacity gaps	n/a
3.2.6	PRB Key Points	✓

- The capacity targets proposed by Malta are set equal to the national reference values and are marginally above the range of the delay forecast, which is zero minute.
- The capacity plans indicate that Malta will have sufficient capacity to accommodate to the forecasted traffic demand.

3.3. Arrival ATFM delay per flight

Malta

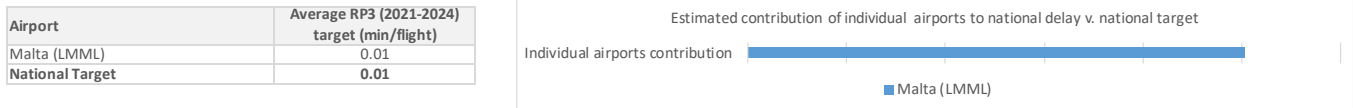
3.3.1 Overview of arrival ATFM delay per flight



3.3.2 Review of targets and comparison with level and trend of past performance during RP2

The national airport arrival ATFM delay targets are set at zero for 2020 and a constant 0.01 minutes per flight for the remaining years, considerably lower than in RP2, and in line with the average past performance observed in RP2. Malta airport is the only airport included in the performance plan and the traffic forecast indicates a -0.1% CAGR over the 2019-2024 period. Malta is expected to achieve the national targets for average airport arrival ATFM delay.

3.3.3 Contribution of individual airports to the national target



Malta airport is the only airport included in the performance plan and no delays are expected by the airport breakdown, which is considered to be consistent with the national target.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Malta (LMML)	GROUP IV	0.00	0.01	+0.01	0.01	+0.01

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The performance observed in the past at Malta airport was in line with the median performance of the group of similar airports. The proposed targets for RP3 are in line with the past performance, and are expected to be in line with the performance of similar airports.

3.3.5 PRB Key Points

- Malta airport is the only airport included in the performance plan. The national targets are set considerably lower than in RP2. Historical performance on average has been in line with RP3 targets.
- The performance at Malta airport is expected to be in line with that of the group of similar airports.

3.4 Capacity Incentive schemes

Malta

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.05 min	0.000%	0.500%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
NOP reference values			0.01	0.01	0.01
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.01	0.01	0.01
Pivot values for RP3			0.01	0.01	0.01

Threshold and pivot value review

Malta has chosen not to modulate pivot values, which are set equal to the national reference values. There is a dead band of 0.05 minutes before any penalty is applied.

Modulation review

n/a

Review of financial advantages/disadvantages

The incentive scheme is asymmetric: no bonuses are possible, and a maximum penalty of 0.5% of determined costs is defined.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.01 min	0.000%	0.250%
	✔	⚠

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	No

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.010	±0.010	±0.010
Performance Plan targets			0.01	0.01	0.01
Pivot values for RP3			0.02	0.02	0.02

Threshold and pivot value review

Pivot values are set at 0.02 minutes per flight for all years, with a dead band of +/- 0.01 minutes per flight. The pivot values are set higher than the national targets.

Modulation review

The pivot value is modulated and set at 0.02 minutes per flight for all years, 0.01 minutes higher than the national reference value, without justification.

Review of financial advantages/disadvantages

No bonuses are possible and the maximum penalty is set at 0.25% of determined costs.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

En route:

- Malta has chosen not to modulate the pivot values and set them equal to the national reference values.
- No bonus is possible and the maximum penalty is set at 0.5%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

Terminal:

- Malta has chosen to modulate the pivot values and set them at 0.02 minute per flight for all years, higher than the national target (0.01 minutes per flight).
- No bonus is possible and the maximum penalty is set at 0.25%.
- The maximum penalty defined by the incentive scheme is less than 1% of the determined costs of the ANSP, thus the incentive scheme does not have a material impact on the revenue at risk.

3.5 Investments

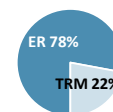
Malta - Malta Air Traffic Services Ltd.

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	3.6	3.9	4.3	3.4	3.6	18.8
	En route	2.8	3.2	3.5	2.5	2.7	14.7
	Terminal	0.8	0.8	0.8	0.9	0.9	4.2

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
Total:						0.0	0.0

Airspace user feedback regarding major investments

MATS noted that planned capital projects were suspended due to the lack of revenue generated by the decrease in traffic due to the suspension of air travel (COVID-19). In 2021, airspace users commented on the suspension of the investments. Malta noted the comments of the airspace users and committed to trying to find a cheaper solution to expand the outdated infrastructure, extension of the technical, equipment rooms and of the VCR. In the 2022, airspace users noted that there is limited complementary information regarding the investment plan of Malta and that it is unknown how the revision of the performance plan is affecting the investment plan.

Review of investments

No new major investments were included in the performance plan. The actual CAPEX for RP2 was 40% of the planned values for the same period and the amount underspent was 16.7M€. In terms of depreciation and cost of capital, the airspace users have financed 5M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	8.3	8.3	0.1	0.5	0.4	0.1	0.3	1.3
Existing investments			3.5	3.5	3.9	4.3	4.4	19.6

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	AGDL Datalink	1.9	1.9	0.0	0.2	0.1	0.0	0.0	0.3	Cost of Capital at 4.8% + depreciation at applicable rates.
2	Others (miscellaneous)	4.5	4.5	0.1	0.3	0.2	0.1	0.3	1.0	same as above

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls? n/a

Malta ACC is expected to be able to deliver capacity in accordance with the reference values with 0% over/under capacity during RP3.

There are no new major investment defined for RP3 in Malta contributing to capacity. MATS notes that due to the COVID-19 pandemic, MATS has suspended all capital projects. LSSIP Malta 2016 notes that a system upgrade was performed in 2017 and LSSIP Malta 2020 does not identify any FDPS/SDPS related projects as being planned.

The AGDL Datalink investment defined in the other (non-major) investments can be considered a capacity enabler in the longer term and also contributes to scalability and flexibility.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP? n/a

Not applicable.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? n/a

As Malta ACC is able to deliver the required capacity during RP3 there is no urgent need for capacity enhancing investments. However, to ensure that sufficient capacity is available beyond RP3, monitoring the situation is required.

3.5.4 PRB Key Points

- Malta did not plan any new major investments for RP3.
- The actual CAPEX for RP2 was 40% of the planned values for the same period and the amount underspent was 16.7M€.
- There is no capacity surplus/shortage in Malta during RP3.
- There are no capacity enhancing investments planned for RP3.

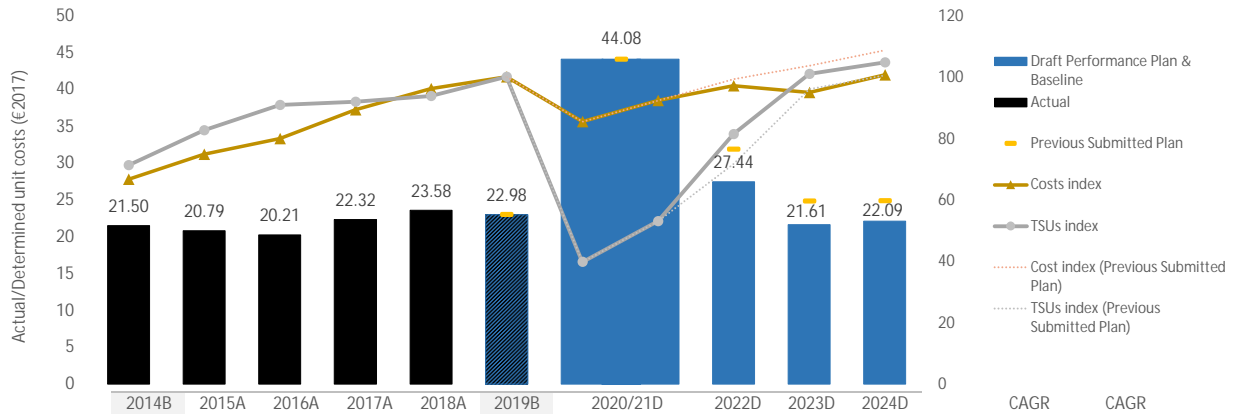
MALTA

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Malta - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



	M€ (nom)	2014B	2015A	2016A	2017A	2018A	2019B	2020/21D	2022D	2023D	2024D
Total costs	M€ (nom)	15	17	18	20	22	23	42	24	24	26
Total costs	M€ (2017)	15	17	18	20	22	23	41	22	22	23
TSU	'000	711	823	905	916	935	996	924	811	1,006	1,044
DUC	€ (2017)	21.50	20.79	20.21	22.32	23.58	22.98	44.08	27.44	21.61	22.09
Exchange rate	€:€				1.000						
DUC	€ (2017)	21.50	20.79	20.21	22.32	23.58	22.98	44.08	27.44	21.61	22.09
Annual change	%		-3.3%	-2.8%	+10.4%	+5.6%	-2.5%	+92%	-37.8%	-21.2%	+2.2%

	CAGR 2019B-2024	CAGR 2014B-2024
Cost index (Previous Submitted Plan)	+2.3%	+1.0%
TSUs index (Previous Submitted Plan)	+0.2%	+0.1%
	+1.2%	+0.5%
	-1.0%	+0.3%

4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified?	22.98 €2017	✓
No major issues identified.		

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	-1.0%	✓
The DUC is planned to decrease on average by -1.0% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	+0.3%	✗
The DUC is planned to increase on average by +0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (D) average (28.64 €2017)?	-19.7%	✓
The 2019 DUC level is -19.7% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

The PRB concludes that the cost-efficiency targets proposed by Malta should be approved.

- Malta is consistent with the RP3 DUC trend in terms of average reduction.
- Malta is not consistent with the long-term Union-wide DUC trend.
- Malta is consistent with the average DUC baseline of the comparator group.

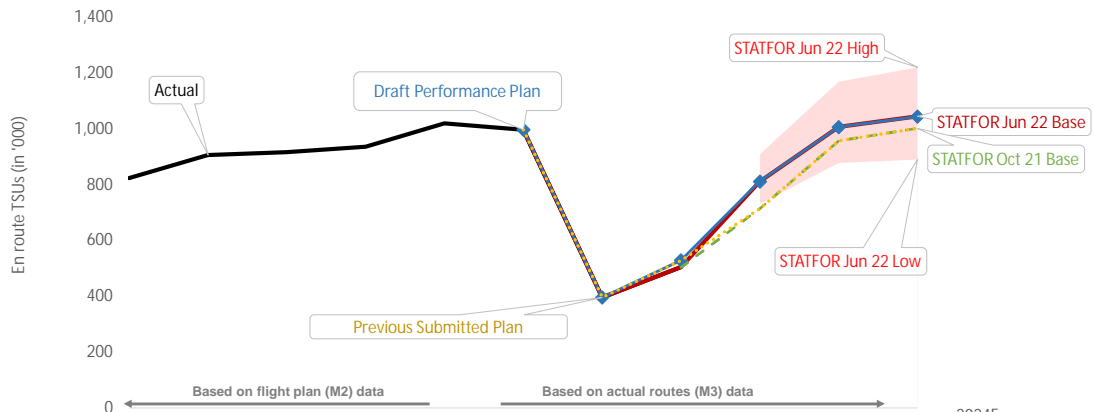
- Malta should consider in the RP3 cost base the 5M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.

- Malta should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends, or should revise terminal RP3 cost-efficiency targets downwards.

4.2 Review traffic forecasts and baseline

Malta - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	823	905	916	935	1,020	996	396	504				
Annual change	%		+10.0%	+1.2%	+2.0%	+9.1%	+6.6%	-60.3%	+27.2%				
STATFOR Jun 22 Base	'000 TSUs									811	1,006	1,044	+4.8%
Annual change	%									+61.0%	+24.1%	+3.8%	
STATFOR Oct 21 Base	'000 TSUs									714	957	1,002	+0.5%
Annual change	%									+41.7%	+34.1%	+4.7%	
Performance Plan	'000 TSUs						996	396	528	811	1,006	1,044	+4.8%
Annual change	%						+6.6%	-60.3%	+33.3%	+53.6%	+24.0%	+3.8%	

4.2.2 Traffic baseline review

✓	2019	'000 TSUs	CRCO 12-month coefficient	✓	2014	'000 TSUs	CRCO 12-month coefficient
	2019B (PP baseline, M3)	996			2014B (PP baseline)	711	
	2019A (as in the Reporting tables, M2)	1,020			2014A (as in the Reporting tables, M2)	727	
	2019B/ 2019A	-2.31%	-2.31%		2014B/ 2014A	-2.31%	-2.31%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2019 and 2014 traffic baseline values were adjusted by the M2/M3 CRCO 12-months coefficient (-2.31%).

Review of 2014 and 2019 traffic baseline
 The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-2.31%). The coefficient decreases the number of 2014 and 2019 service units, while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast
 n/a

Review of the PP traffic forecast
 The en route traffic forecast presented in the performance plan of Malta is in line with the STATFOR June 2022 base forecast.

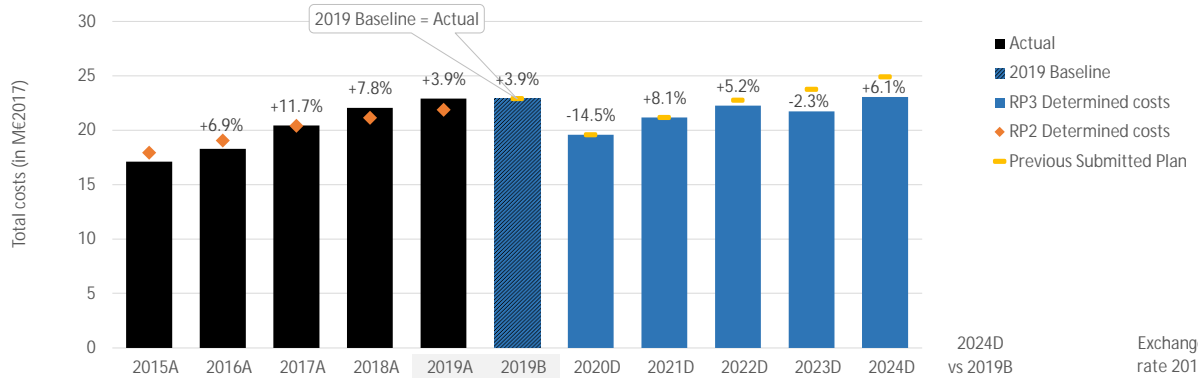
4.2.4 PRB Key Points

- The en route traffic forecast is in line with STATFOR June 2022.
- No major issues identified.

4.3 Review of determined costs and baseline

Malta - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



	M€ (nom)	2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B
Total costs	M€ (nom)	17	18	20	22	23	23	20	22	24	24	26	+9.3%
Annual change	%		+7.6%	+12.8%	+9.2%	+5.0%	+5.0%	-14.1%	+8.6%	+8.7%	+0.1%	+7.8%	+11.5%
Inflation index	2017 = 100	97.8	98.7	100.0	101.7	103.2	103.2	104.1	104.8	109.7	112.8	115.1	
Total costs	M€ (2017)	17	18	20	22	23	23	20	21	22	22	23	+0.7%
Annual change	%		+6.9%	+11.7%	+7.8%	+3.9%	+3.9%	-14.5%	+8.1%	+5.2%	-2.3%	+6.1%	+0.7%
Total costs	M€ (2017)	17	18	20	22	23	23	20	21	22	22	23	+0.7%

Exchange rate 2017	€:€
	1.00000

Is inflation in PP in line with IMF (April 2022 forecast)? Yes

4.3.2 Baseline review

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 No adjustments applied to the 2014 and 2019 cost baselines.

2014/2019 baseline analysis

The 2014 and 2019 cost baselines are in line with 2014 and 2019 actual costs as presented in the en route reporting tables.

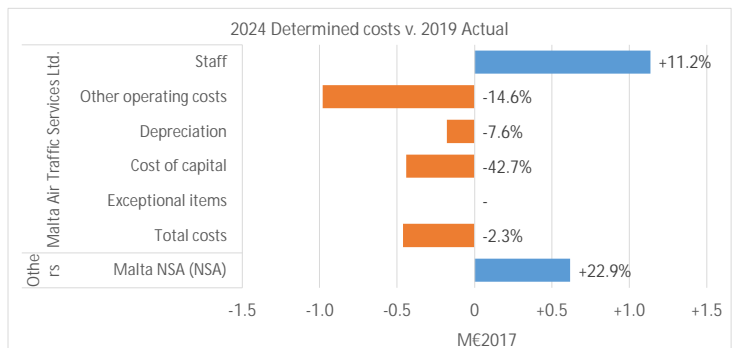
4.3.3 Review of the RP3 determined costs and incentives

	M€2017	%
Review of 2020/2021 determined costs		
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+1.5	+7.5%

- Review of cost elements
- Investments (see details in 3.5)
 - Cost of capital (see details in 4.3.1)
 - Pension costs (see details in 4.3.2)
 - Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.00%
Maximum penalty (% of determined costs)	0.50%
Additional incentives?	No



Total en route costs for Malta are expected to increase by +0.7% (+0.2M€2017), between 2019 actuals and 2024 planned. This increase is due to the increase in NSA costs (+22.9%, or +0.6M€2017), which more than compensates the reduction in costs implemented by the ANSP (-2.3%, or -0.5M€2017).

For MATS, the following trends are observed:

- Higher staff costs (+11.2%, or +1.1M€2017 in 2024 as compared to 2019), required to fulfil the recruitment plan (i.e. recruitment of ATCOs, technical specialists, and managers and administrative staff). Furthermore, after two years without any salary increase, an increase in wages is expected as of 2023 (see appendix 1 on MATS HR requirements for RP3).
- Lower other operating costs (-14.6%, or -1.0M€2017) in 2024 as compared to 2019.
- Depreciation costs are planned to remain relatively stable over RP3, although they are expected to end up in 2024 below the 2019 level (-7.6% or -0.2M€2017).
- Significantly lower cost of capital (-42.7%, or -0.4M€2017) in 2024 as compared to 2019. This significant reduction results from the application of a substantially lower RoE (from about 8.0% in RP2 to 4.0% in RP3).

Differently, NSA costs are planned to increase substantially between 2019 and 2024 (+22.9%, or +0.6M€2017). This increase is mostly explained by +0.5M€ of additional other operating costs related to supervision functions.

4.3.4 PRB Key Points



- There are no adjustments to the cost baselines.
- Between 2019 and 2024, the total costs for MATS are planned to decrease by -2.3% (or -0.5M€2017).
- All cost categories of the ANSP are planned to decrease, with the only exception of the staff costs.
- In RP2, in terms of depreciation and cost of capital, airspace users have financed 5M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

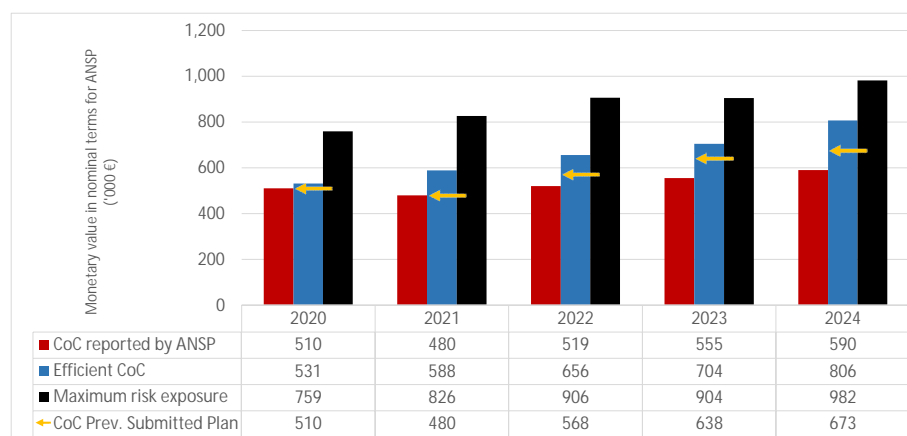
4.3.A Cost of capital

Malta Air Traffic Services Ltd. - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	17,253	18,775	20,598	20,539	22,313
Monetary value of Return on Equity	495	470	505	555	590
Ratio RoE/DC (%)	2.9%	2.5%	2.5%	2.7%	2.6%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	5.0%	6.1%	4.0%	6.0%	4.0%	6.4%	4.0%	6.3%	4.0%	6.8%
Interest on debts	1.6%	1.2%	1.6%	1.5%	1.6%	1.9%	0.0%	2.0%	0.0%	2.1%
Capital structure (% debt)	8.8%	25.6%	5.0%	28.8%	2.0%	29.3%	0.0%	29.1%	0.0%	29.1%
WACC	4.7%	4.9%	3.9%	4.7%	4.0%	5.1%	4.0%	5.1%	4.0%	5.5%

Is the interest on debts in line with the market? Yes

- MATS received a loan from Eurocontrol, which will be reimbursed by 2023. MATS does not expect to have other loans during RP3 and will be 100% financed through equity from 2023 onwards. Considering this, the interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified and in line with competitive market practices.

- The shareholders accepted the reduced return on equity reported in the performance plan to be fixed at 4.0% over RP3. The efficient WACC has been calculated based on option 1.

- The embedded return on equity over RP3 varies from a minimum of 2.5% to a maximum of 2.9%. The monetary value of the embedded return on equity is commensurate to the determined costs over RP3.

- Adjustments to the proposed cost of capital do not seem to be necessary over RP3.

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	8,657	10,466	12,288	12,894	13,433
Net current assets	2,260	1,971	688	991	1,325
Adjustments total assets	0	0	0	0	0
Total asset base	10,917	12,436	12,976	13,885	14,757

- The fixed asset base is planned to significantly increase over RP3. This is partially in line with the more moderate increase in investments as detailed in section 3.5 of this document.

- The net current assets do not seem to present major issues.

- The RAB does not include adjustments to the total asset base.

- The total asset base will increase over RP3, due to the increase in the fixed asset base.

4.3.A.5 PRB Key Points

- The reported cost of capital does not present major issues. ✓

4.3.B Pensions

Malta Air Traffic Services Ltd. - En route

4.3.B.1	Review of en route pension costs for the main ANSP (data from en route reporting tables)	n/a
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4.3.B.2	Reporting exceptions and planned changes in assumptions	n/a
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4.3.B.3	Actions taken by the ANSP to manage the cost-risk associated with pensions	
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According to the information provided in the performance plan, pensions are paid by the State and no provisions have been made in the performance plan.

4.3.B.4	PRB Key Points	
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- Malta states that pension costs are financed by the national government and, therefore, no pension related cost is included in the performance plan.

4.3.C Methodology for cost allocation between ER and TRM

Malta

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Malta did not mention changes to the cost allocation methodology with respect to RP2.
- Costs are allocated between the en route and terminal charging zones based on the nature of the cost.
- On average, the net book value of the assets is allocated 83% to en route and 17% to terminal. Salaries are allocated according to the ratings of the ATCOs and according to the equipment maintained in the case of technical grades. When the split is not straight forward, the percentage of movements according to flight hours for overflights and terminal is used. The rent is allocated depending on the equipment used on site.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

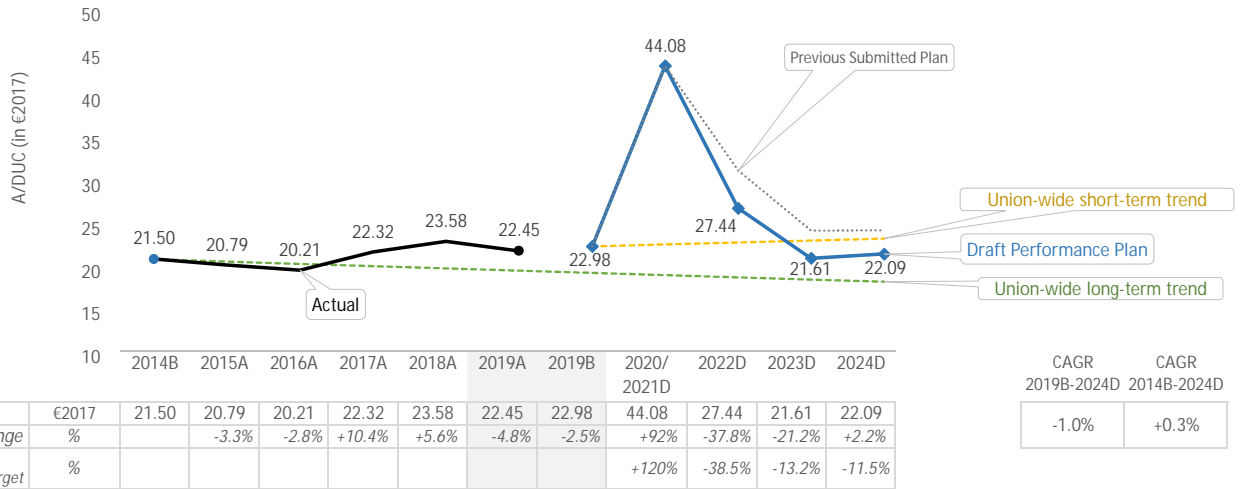


- Malta did not mention changes to the cost allocation methodology with respect to RP2.
- No major issues identified.

4.4 Determined unit costs (DUC)

Malta - En route CZ

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency ✓

✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan -1.0%	Union-wide +1.0%	Difference -2.0p.p.
✗ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	+0.3%	-1.3%	+1.6p.p.
✓ DUC level consistency	2019 baseline	Performance Plan 22.98	Average comparator group 28.64	Difference -19.7%

- The DUC is planned to decrease on average by -1.0% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to increase on average by +0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -19.7% lower than the average of the comparator group. The DUC for Malta is expected to remain well below the average DUC of the comparator group during RP3.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

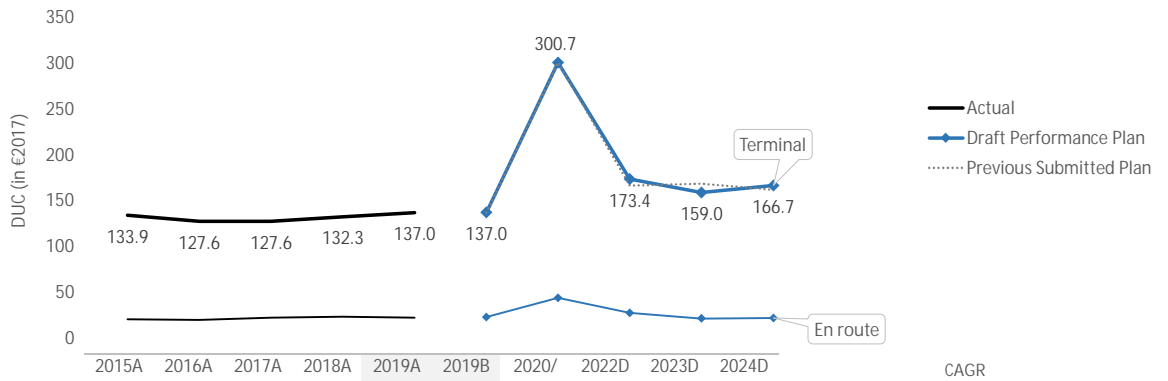
4.4.5 PRB Key Points ✓

- Malta is consistent with the RP3 DUC trend in terms of average reduction.
- Malta is not consistent with the DUC long-term Union-wide trend.
- Malta is consistent with the average DUC baseline of the comparator group.

4.5 Terminal

Malta

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	133.9	127.6	127.6	132.3	137.0	137.0	300.7	173.4	159.0	166.7	+5.0%
Annual Change	%		-4.7%	-0.0%	+3.7%	+3.6%	+3.6%	+119%	-42.3%	-8.3%	+4.8%	
DUC - En route	€2017	20.8	20.2	22.3	23.6	22.5	23.0	44.1	27.4	21.6	22.1	-1.0%
Annual Change	%		-2.8%	+10.4%	+5.6%	-4.8%	-2.5%	+92%	-37.8%	-21.2%	+2.2%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Malta (LMML)	GROUP IV	659.2	131.7	-80.0%	807.8	191.7	-76.3%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

Malta TCZ includes only Malta airport. The average DUC over RP3 for this airport is well below the median DUC of the airports included in the same group over both RP2 (-80%) and RP3 (-76%). The DUC evolution for Malta TCZ follows a +5.0% increasing trend between 2019 and 2024, which is worse than the -1.0% CAGR trend shown at en route level.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

Both the 2019 traffic and cost baselines are in line with the actual values as presented in the terminal reporting tables.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024?	Yes
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Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

As for en route, the terminal traffic forecast presented in the performance plan of Malta is in line with the STATFOR June 2022 base forecast.

Determined costs (terminal)

✓ Is inflation in PP in line with IMF (April 2022 forecast)? Yes

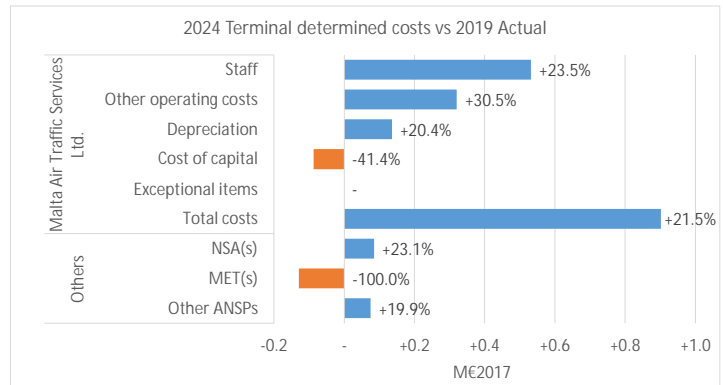
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+0.8	+17.6%

Cost elements - Malta Air Traffic Services Ltd. (terminal)

- 🔴 Investments (see details in 3.5)
- ✓ Cost of capital
 - Interest on loans
 - RoE
 - WACC
- 🔴 Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.00%
Maximum penalty (% of determined costs)	0.25%
Additional incentives?	No



- The share of terminal investment costs is broadly in line with the share of terminal total costs (about 20%).
- The terminal WACC and its parameters are equivalent to the ones for en route for the whole period.
- The terminal DUC trend over RP3 planned for Malta TCZ (+5.0% p.a.) is higher than the one planned for en route (-1.0% p.a.).
- The 2024 determined costs for Malta TCZ are expected to increase by +18.4% above the 2019 level. As far as MATS is concerned (+21.5% or +0.9M€2017 in 2024 vs 2019), the increase in costs over RP3 is mainly explained by higher staff and other operating costs (respectively +23.5% and +30.5% in 2024). As for en route, it is understood that these increases result from the implementation of the recruitment plan. The cost of capital is the only cost item which is planned to decrease over RP3 (-41.4%), as a result of the application of a lower RoE.

4.5.4 PRB Key Points



- The terminal RP3 DUC trend is +5.0%, which is worse than the en route RP3 DUC trend of -1.0%.
- The terminal RP3 DUC trend is +5.0%, which is worse than the terminal RP2 DUC trend of +0.6%.
- Malta airport, the only airport included in the performance plan, had a DUC -80% lower than the average of its comparator group over RP2. The difference is expected to be -76% over RP3.
- Malta applies the STATFOR June 2022 base forecast for terminal traffic.
- Terminal costs for MATS are planned to increase by +21.5% over the period, +0.9M€2017.

PRB Assessment

ROMANIA

Draft Performance Plan

Context and scope

Romania

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F5928, F5832, F5833, F5834, F5835, F5836, F5837, F5929, F5838, F5839, F5840, F5841, F5842, F5843, F5930

Relative weight compared to the SES area (2019):

- % Flight-hours vs SES 2.9%
- % Serv. Units vs SES 3.9%
- % Costs vs SES 2.6%

Scope

FAB: DANUBE FAB

ROMATSA

ANSPs:

- ATS
- AIS
- CNS
- MET
- ATFM
- ASM

Other entities (as per Article 1(2) last para. of Regulation 2019/317):

Eurocontrol
 Romanian Civil Aeronautical Authority (RCAA)

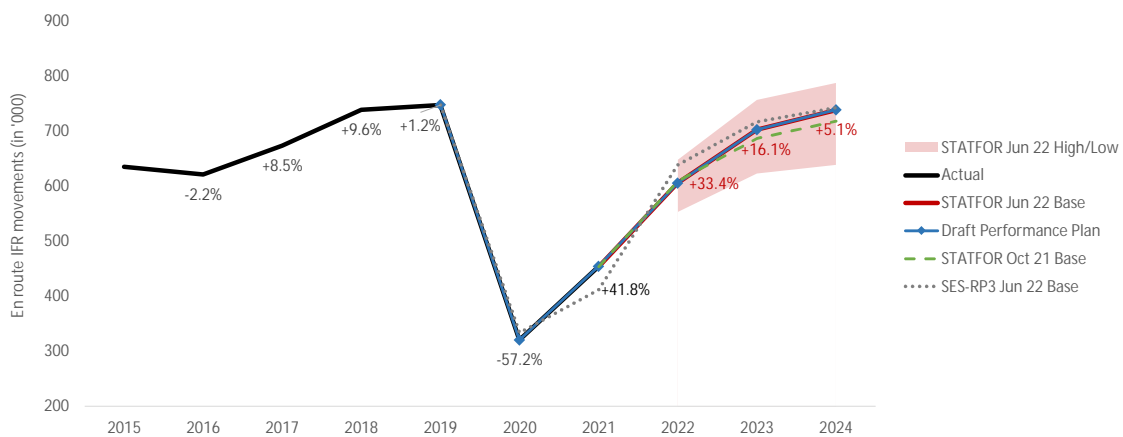
Competent authority
 Competent authority

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Romania	n/a	No	No	No	
Terminal (TRM)	Romania - TCZ	2	No	No	No	
Changes in the CZs from RP2		No				

Comparator group: Group C Other States in the comparator group: Bulgaria, Croatia, Czech Republic, Hungary, Poland, Portugal, Slovakia, Slovenia

Currency: RON Exchange rate: 4.56629

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
ROMATSA	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

ROMATSA	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Romania should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
- The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	1.55%	2.10%	2.05%	2.05%	2.05%
Previous submitted PP	1.55%	2.10%	2.05%	2.05%	2.05%

PRB assessment

The PRB concludes that the environment targets proposed by Romania should be approved.

- Romania's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Romania did not achieve the 2021 target of 2.10% in its performance plan. For this reason, Romania remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- Romania's performance may be affected by the geo-political situation in Eastern Europe and Middle East.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for <u>en route</u> ATFM delay per flight (min)	0.14	0.02	0.04	0.04	0.04
National target for <u>terminal</u> and airport ANS ATFM arrival delay per flight (min)	0.50	0.50	0.39	0.39	0.39
Previous submitted PP (en route)	0.14	0.02	0.04	0.04	0.04
Previous submitted PP (terminal)	0.50	0.50	0.39	0.39	0.39

PRB assessment

The PRB concludes that capacity targets proposed by Romania should be approved.

- Based on the evidence presented in the performance plan, more ambitious national targets for average airport arrival ATFM delay would be realistic.

4. Cost-efficiency 

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	65.45	39.32	35.80	35.13	+0.8%	-0.3%
Target for determined unit cost (DUC) (€2017) - Terminal	414.64	257.81	265.95	256.40	+4.2%	n/a
<i>Previous submitted PP (en route)</i>	65.45	41.94	38.16	38.18	+2.9%	+0.6%
<i>Previous submitted PP (terminal)</i>	414.64	255.91	259.40	257.30	+4.3%	n/a

PRB assessment

The PRB concludes that the cost-efficiency targets proposed by Romania should be approved.

- Romania is consistent with the RP3 DUC trend in terms of average reduction.
- Romania is not consistent with the long-term Union-wide DUC trend.
- Romania is consistent with the average DUC baseline of the comparator group.
- Romania presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

5. PRB recommendations

SAFETY

- In 2020, Romania exceeded the safety targets for RP3 and exceeded the targets planned for 2020. Romania should retain the high level of safety achieved in 2020 throughout RP3.

ENVIRONMENT

- Romania should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Romania should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.

COST-EFFICIENCY:

- Romania should justify the cost of capital assumptions and should revise downwards the cost of capital.
- Romania should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends, or should revise terminal RP3 cost-efficiency targets downwards.

6. PRB recommendations from the performance plans submitted in November 2021

SAFETY

- Romania should retain the high level of safety achieved in 2020 throughout RP3.

ENVIRONMENT

- Romania should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

CAPACITY

- Romania should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.
- Romania should revise the terminal capacity incentive scheme so that it has a material impact on the revenues.

COST-EFFICIENCY

- Romania should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Romania should consider in the RP3 cost base the 32.5M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Romania should justify the cost of capital assumptions and should revise downwards the cost of capital.
- Romania should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends and with respect to similar airports, or should revise terminal RP3 cost-efficiency targets downwards.

ROMANIA

Safety KPA

1.1 Summary of safety key data and assessment results

Romania

1.1.1 Target for EoSM for ANSPs

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were either met or exceeded already in 2020.

1.1.2 Measures planned to reach the target (if applicable)

The Romanian ANSP has already met RP3 safety target levels. Therefore, the measures put in place ensuring maintaining the safety levels to the end of RP3 are considered relevant and adequate.

1.1.3 Interdependencies and Trade-offs

The performance plan underlines that ROMATSA, together with the NSA, have established the formalised approach ensuring that safety performance will not be deteriorated during the implementations of the changes into the ATM functional system.

1.1.4 Change Management

Change management practices constitute an integral part of ROMATSA's Safety Management system and are supported by the Romanian NSA. Given the level of details provided in the performance plan, these practices should, if applied, be sufficient to control the impact on the network performance.

1.1.5 PRB conclusions



The PRB concludes that the safety targets proposed by Romania should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
 - The measures are sufficiently described to demonstrate how the ANSP will maintain maturity levels over RP3.
 - The formalised approach applied by the ANSP and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
 - The change management practices ensure that any negative impact on network performance is reduced.
- In 2020, Romania exceeded the safety targets for RP3 and exceeded the targets planned for 2020. Romania should retain the high level of safety achieved in 2020 throughout RP3.

1.2 Targets for EoSM for ANSPs and Measures

Romania

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
ROMATSA	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	D	D	C	C	C	C	D	✓	
	Safety assurance	C	D	C	C	C	C	C	✓	
	Safety promotion	D	D	C	C	C	C	C	✓	
	Safety culture	D	D	C	C	C	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, were either met or exceeded already in 2020. The targets should have been revised and adopted to the current level of the ANSP.

The performance plan indicates that ROMATSA achieved or exceeded the RP3 safety targets. To maintain the safety level to the end of RP3, specific measures will be decided based on yearly review of application of the CANSO Standard of Excellence in Safety Management Systems (i.e. SoE in SMS). Some measures in safety monitoring at ANSP level are listed. Moreover, the Romanian NSA performs continuous oversight activities and safety performance monitoring under the relevant EU legislation, national, and internal procedures. Considering that the ANSP is already at safety target levels, the measures put in place ensuring maintaining the safety levels to the end of RP3 are relevant and adequate.

1.3 Interdependencies and Change management practices

1.3.1 Interdependencies and Trade-offs

During RP3, the ATM 2015+ system is implemented with the aim of increasing capacity. The performance plan underlines that the NSA and ROMATSA have established a formalised approach assuring that safety has priority over other KPAs and that the changes to the ATM functional system will not deteriorate safety performance. Additionally, specific metrics are used to monitor the safety levels during implementation.

Moreover, the performance plan indicates that the resources have been assured to maintain the safety activities during RP3.

1.3.2 Change Management Practices

Change management practices are an integral part of ROMATSA's Safety Management Manual and are supported by the NSA. Change management processes cover the lifecycle of change, including implementation and operations. Implementation of the change is monitored and compared to the expected outcome derived from the safety assessment. This approach ensures proactive management of emerging risks.

Change management processes involve all affected stakeholders to guarantee a suitable application of the change and minimising negative impact on network performance.

ROMANIA

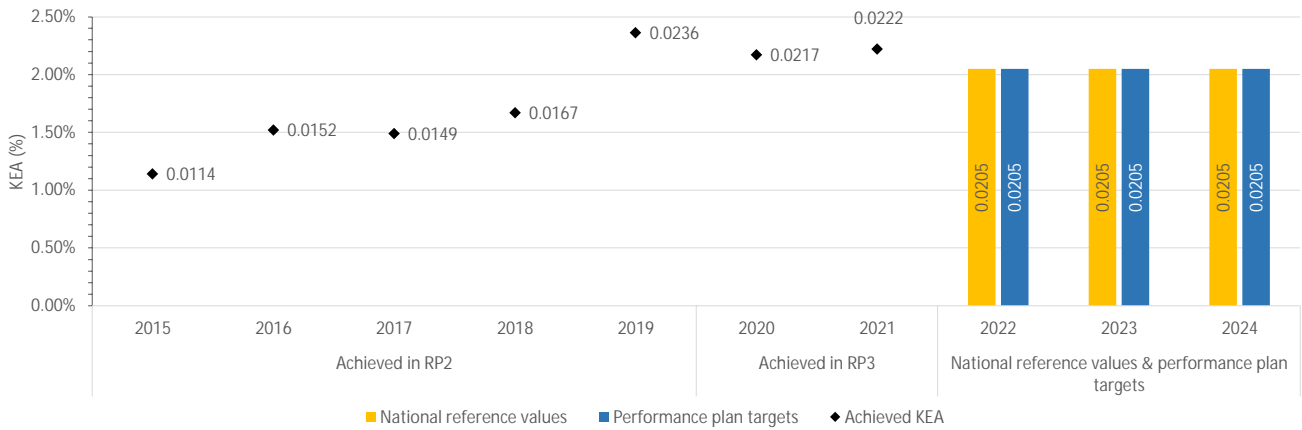
Environment KPA

2.1 Summary of Key Data and Assessment Results

Romania

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	1.55%	2.10%	2.05%	2.05%	2.05%
Performance plan targets	1.55%	2.10%	2.05%	2.05%	2.05%
Comparison of draft performance targets with reference values	n/a	n/a	▲0.00%	▲0.00%	▲0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Romania should be approved.

- Romania's horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- The 2021 performance shows that Romania did not achieve the 2021 target of 2.10% in its performance plan. For this reason, Romania remains on the PRB's watchlist for further scrutiny during the annual monitoring process.
- Romania's performance may be affected by the geo-political situation in Eastern Europe and Middle East.
- Romania should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

2.2.1 Annex IV 2.1 (a): Measures of Achievement

Commitment to FRA by 2022?	✓	Reference in PP	Reference in LSSIP
Romania operates within south-east free route airspace (SEE FRA) from FL105 up to FL660 - the 24-hour cross-border FRA that includes Bulgaria and Hungary. SEE FRA was expanded in 2021 to include Slovakia, and the integration of Moldova is planned for implementation in 2022.		3.2.1(c)	Page 79
Major 2021 ERNIP Recommended Measures:	6	Reference in PP	Reference in ERNIP
Measure implemented or included within performance plan?		3.2.1(c)	Page 166
PBN Transition Plan	✓	3.2.1(c)	Page 121
SEE FRA Airspace Planning Reduction	✓	3.2.1(c)	Page 159
Single CDR Category (SCC)	✗	3.2.1(c)	Page 174
SEE FRA Phase 3	✓	3.2.1(c)	Page 178
Bucuresti ACC re-organisation	✓	3.2.1(c)	Page 218
CB FRA operations (Poland, Slovakia, Bulgaria, Hungary, Ukraine, and Moldova)	✓	3.2.1(c)	
FUA Implementation according to latest LSSIP	Implementation		
1	✓		
2	✓		
3	✓		

Since November 2019, Romania operates south-east Europe free route airspace (SEE FRA) - the 24 hour FRA including Bulgaria and Hungary.

The chart in section 2.1.1 shows that Romania achieved a KEA of 2.17% in 2020. In 2021, Romania reached a KEA of 2.22% which means it did not achieve the 2021 target of 2.10% in its performance plan.

Romania's RP2 performance showed a deterioration of KEA (2.36% in 2019 vs 1.14% in 2015). Romania provided a comprehensive explanation of the challenges it is facing. Romania stated that:

- KEA is heavily influenced by the geopolitical situation in Ukraine and Syria;
- Traffic bans between Ukraine and Russia further increased pressure;
- Meteorological conditions; and
- Airspace users' policies and planning procedures result in flying longer trajectories and thus negatively influence the KEA indicator.

Romania is uniquely affected by external influences that have reflected in its KEA performance. Additional performance indicators, such as the shortest constrained route and Romania's analysis in annex P of the performance plan shows that the local performance has remained as good as it can be despite the longer routes flown due to network issues.

Romania plans several initiatives such as the performance based navigation (PBN) transition plan, implementation of the new airspace architecture and cross-border FRA (CB FRA) operations with Poland, Ukraine, and Moldova. Of particular interest, given the issues Romania raised concerning network inefficiencies impacting its local performance, is the CB FRA plans – the PRB looks forward to seeing the impact of this on Romania's performance. The area control centre (ACC) re-organisation that will follow the operational experience with SEE FRA is also an aspect that will help Romania to improve performance. The en route projects sit alongside a host of terminal airspace measures, such as arrival manager (AMAN) and new ATS routes to shorten routes near terminal airspace.

ROMATSA has a dedicated team responsible for civil-military coordination and expects increased airspace requirements from military users that plan to procure new fighter aircraft with advanced capabilities. To counteract this, Romania pledged to improve its flexible use of airspace (FUA) processes including advanced FUA. This is crucial since airspace users must currently avoid temporary reserved areas (TRAs) and temporary segregated areas (TSAs) that are subject to airspace reservation.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Romania plan for an environmental incentive scheme?	✗
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

ROMANIA

Capacity KPA

3.1 Summary of capacity key data and assessment results

Romania

3.1.1 En route ATFM delay

The national targets are set equal to the national reference values for all years of RP3 and there are no delays forecasted. The capacity plans show a significant surplus throughout 2022-2024.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

The proposed national targets for 2022-2024 are set at 0.39 minutes per arrival, more than double of the observed average performance during RP2 and considerably worse than the past observed performance of similar airports. The proposed targets are based on a CAGR of 0.4% of IFR movements (STATFOR October 2021 base forecast). Two airports at Bucharest (Otopeni and Băneasa) are included in the performance plan. The performance is massively driven by Otopeni that represents 96% of the terminal traffic.

The performance plan refers to various capacity improvement measures and declares that ATC capacity will be set at the optimum level. Historical performance shows an improving trend of average delays in RP2 and zero delay so far in 2020 and 2021.

Based on the evidence presented in the performance plan, more ambitious national targets for average airport arrival ATFM delay would be realistic.

3.1.3 Incentives

En route:

The pivot value is not based on the reference values published in the NOP but is updated yearly based on the average share of CRSTMP-only delays (attributed by ANSP) in the previous three years.

The maximum bonus is fixed at 2% of the determined costs, whereas the maximum penalty is fixed at 4% of the determined costs.

Terminal Incentives:

The pivot values are modulated for CRSTMP related delays only, and are further adjusted yearly based on the actual share of CRSTMP related delays in the given year. The maximum penalty is set at 0.1%, the maximum bonus is set at 0.5% of determined costs.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.1.4 Investments

Romania's CAPEX execution level over RP2 was only 48% of the planned values. The airspace users have financed 32.5M€ for investments that have not been materialised. The NSA noted that it is being closely monitored in order to avoid any double charging of these costs to airspace users.

There is a capacity surplus in Romania during RP3.

New major investment during RP3 contributes to en route capacity and is linked to PCP/CP1 ATM functionalities AF1, AF3, and AF5. Additional non-major investments contribute also to airport/TMA capacity.

Investments are in line with the overall European ATM evolution and contribute to resilience, scalability, and flexibility.

3.1.5 PRB conclusions

The PRB concludes that capacity targets proposed by Romania should be approved.

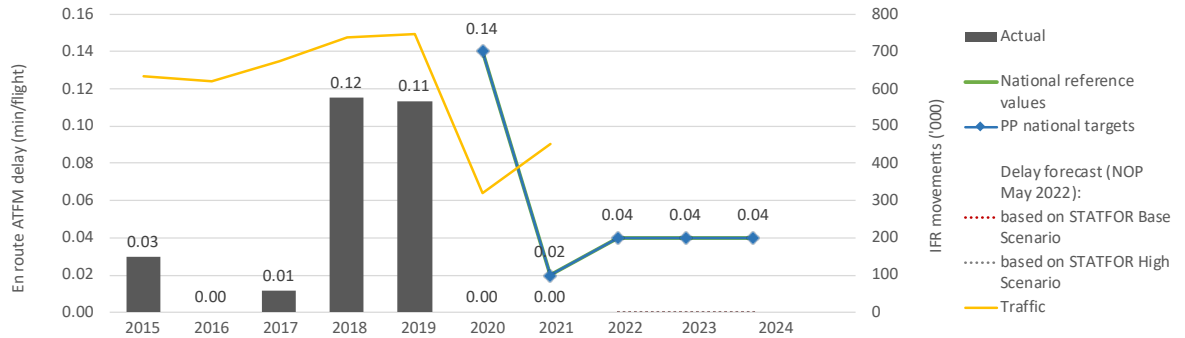
- Based on the evidence presented in the performance plan, more ambitious national targets for average airport arrival ATFM delay would be realistic.

- Romania should justify the terminal RP3 capacity targets with respect to RP2 actual performance and with respect to similar airports, or should revise terminal RP3 capacity targets downwards.

3.2 En route ATFM delay per flight

Romania

3.2.1 Overview of en route ATFM delay per flight ✔



Traffic variation	+6%	-2.2%	+8.5%	+9.6%	+1.2%	-57.2%	+41.7%			
Actual delay/flight	0.03	0.00	0.01	0.12	0.11	0.00	0.00			
National reference values						0.14	0.02	0.04	0.04	0.04
PP national targets						0.14	0.02	0.04	0.04	0.04
Delay forecast*:										
Based on STATFOR High Scenario						-	0.00	0.00	0.00	
Based on STATFOR Base Scenario						-	0.00	0.00	0.00	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✔	✔	✔
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✔	✔	✔

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✔

Assessment of capacity enhancement measures and review against NOP

There are three main capacity enhancement measures listed in the performance plan:

- Implementation of a new ATM system expected to enter into operations by the end of 2021,
- Airspace configuration, focusing on FRA implementation, the operational excellence programme of the NM, and
- The new HR policy and the recruitment of new ACC ATCOs.

The measures presented in the performance plan are in line with those of the NOP 2022-2026.

The descriptions of the measures are properly detailed, their positive impact on capacity performance is established and substantiated by figures and statements.

The planned number of ATCO FTEs shows an overall increase of 11% over RP3, and is justified in detail by presenting the issue of the ageing ACC ATCO population of ROMATSA. The planned number of ATCOs to start working in the OPS room is reasonable.

ATCO Planning (FTEs)

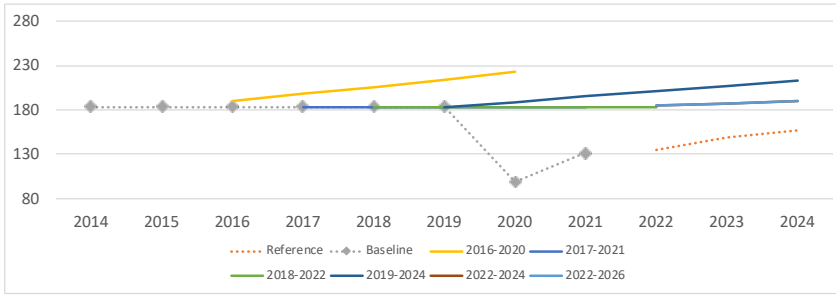
		2018A	2019A	2020A	2021A	2022P	2023P	2024P
Bucharest ACC (LRBB)	Additional ATCOs in OPS to start working in the OPS room	25	0	0	0	24	11	24
	ATCOs in OPS to stop working in the OPS room	1	4	8	6	4	6	6
	ATCOs in OPS to be operational at year-end	237	233	225	219	239	244	262
Total - ROMATSA (en route)	Additional ATCOs in OPS to start working in the OPS room	25	0	0	0	24	11	24
	ATCOs in OPS to stop working in the OPS room	1	4	8	6	4	6	6
	ATCOs in OPS to be operational at year-end	237	233	225	219	239	244	262

2024 (end) - 2020 (beg.)	
	+29
	+29

3.2.3 Review of previous and existing capacity profile plans per ACC



Bucharest ACC (LRBB)



- Historical data shows that the baseline values remained flat during 2014-2019. The planned profiles followed this for most of the years, except in 2015 and 2016, when higher capacity profiles were planned. However, these were never realised and planning reverted back to maintaining the actual baseline value. This led to a slight increase in delays when traffic grew by almost 10% in 2018 and 2019.

- The latest planned capacity profiles show an average annual growth of 1.3% over 2022-2024. This results in a significant surplus of 37%, 26%, and 21% in 2022, 2023, and 2024 respectively.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									135	149	157
Baseline	183	183	183	183	183	183	99	132			
2016-2020			190	198	206	214	223				
2017-2021				183	183	183	183	183			
2018-2022					183	183	183	183	183		
2019-2024						183	189	195	201	207	213
2022-2024									185	187	190
2022-2026									185	187	190
Latest vs Reference									37%	26%	21%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps

n/a

3.2.6 PRB Key Points

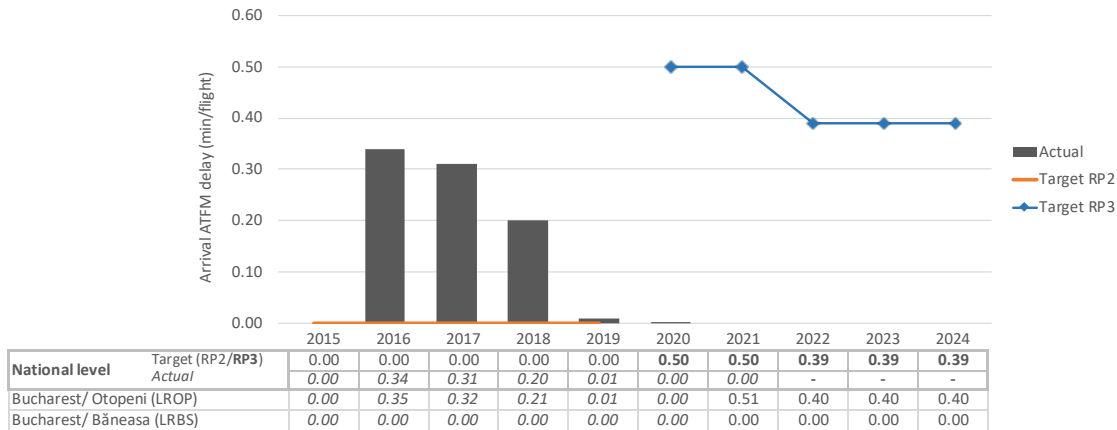


- The national targets are set equal to the national reference values for all years of RP3 and there are no delays forecasted.
- The capacity plans show a significant surplus throughout 2022-2024.

3.3. Arrival ATFM delay per flight

Romania

3.3.1 Overview of arrival ATFM delay per flight



3.3.2 Review of targets and comparison with level and trend of past performance during RP2

During RP2, Romania largely surpassed the ambitious arrival ATFM delay target of zero delay in 2016, 2017, and 2018.

For the last three years of RP3, the proposed national targets are set at 0.39 minutes per arrival, more than double of the observed average performance during RP2.

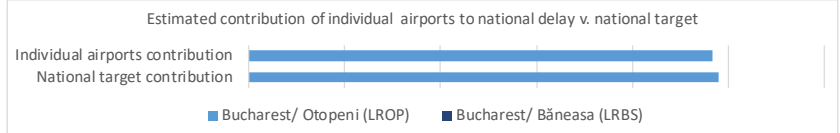
The actual performance in 2020 and 2021 (so far) showed zero delay.

According to the Romanian performance plan, the arrival delay targets are set focusing on foreseen aerodrome related delays, as the ATC capacity will be set to an optimum level. Rehabilitation works for several taxiways and extension of the aircraft platform no.2 are planned from 2022.

Romania has used the STATFOR October 2021 base forecast that estimates a CAGR (in IFR movements) for 2019-2024 of 0.4%.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Bucharest/ Otopeni (LROP)	0.43
Bucharest/ Băneasa (LRBS)	0.00
National Target	0.42



Bucharest Băneasa, following past performance, is not expected to generate any delays during RP3. The national performance is driven by Bucharest Otopeni as it represents 96% of the traffic at these airports.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Bucharest/ Otopeni (LROP)	GROUP III	0.12	0.18	+0.06	0.43	+0.25
Bucharest/ Băneasa (LRBS)	GROUP IV	0.00	0.00	-0.00	0.00	-0.00

* GROUP I - Avg. mvts. in 2016-2018 $\geq 225,000$; GROUP II - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and seasonal; GROUP III - Avg. mvts. in 2016-2018 $\geq 80,000$ and $< 225,000$ and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 $< 80,000$

During RP2, Bucharest Otopeni showed a slightly worse performance than similar airports. The proposed targets for RP3 for Bucharest Otopeni represent notably higher delays than the past observed performance for similar airports.

3.3.5 PRB Key Points

- The proposed national targets for 2022-2024 are set at 0.39 minutes per arrival, more than double of the observed average performance during RP2 and considerably worse than the past observed performance of similar airports. The proposed targets are based on a CAGR of 0.4% of IFR movements (STATFOR October 2021 base forecast).
- Two airports at Bucharest (Otopeni and Băneasa) are included in the performance plan. The performance is massively driven by Otopeni that represents 96% of the terminal traffic.
- The performance plan refers to various capacity improvement measures and declares that ATC capacity will be set at the optimum level. Historical performance shows an improving trend of average delays in RP2 and zero delays so far in 2020 and 2021.
- Based on the evidence presented in the performance plan, more ambitious national targets for average airport arrival ATFM delay would be realistic.

3.4 Capacity Incentive schemes

Romania

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.01 min	2.000%	4.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
NOP reference values			0.04	0.04	0.04
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.04	0.04	0.04
Pivot values for RP3			0.04	0.02	0.02

Threshold and pivot value review

The pivot value is updated annually from the reference value in the Network Operations Plan (NOP). The pivot value will be modulated for CRSTMP delay causes only, based on the percentage of CRSTMP attributed delays in the previous three years (% of CRSTMP in 2018: 31%; 2019: 80%; 2020 & 2021: 0 delay). Huge deviations possible for calculation of modulation over three year period 2019-2021.

Modulation review

Romania is applying a modulation of scope of incentives by only considering the ATFM delays attributed, by the ANSP, to CRSTMP delay codes.

Review of financial advantages/disadvantages

The maximum bonus is fixed at 2% of the determined costs, whereas the maximum penalty is fixed at 4% of the determined costs. As with all the incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±10.0%	0.500%	1.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	Yes
If yes, is the modulation CRSTMP?	Yes

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.035	±0.020	±0.010
Performance Plan targets			0.39	0.39	0.39
Pivot values for RP3			0.07	0.04	0.02

Threshold and pivot value review

The terminal incentive scheme includes a dead band of 10% of the CRSTMP pivot value (dead band: 0.063 - 0.077 minutes per arrival). The 10% dead band might be too small to be able to allow for small variations in the performance with no associated bonuses / penalties. The pivot values are modulated to consider only CRSTMP delay causes and adjusted every year.

Modulation review

Romania has chosen to modulate the pivot values in a two-fold way: according to CRSTMP causes and also for each year according to a formula that will readjust the share of CRSTMP (with respect to the all causes targets) to be the same as the actual share observed in the previous three years. However, the initial pivot values applied in the performance plan do not correspond to any observed share.

The basis for the modulation (national target all causes) is higher than the past performance for Romania and also worse than the past performance of similar airports.

Review of financial advantages/disadvantages

The terminal incentive scheme is asymmetric. The maximum penalty is set at 1% and the maximum bonus is set at 0.5% of the determined costs.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✘

En route:

- The pivot value is not based on the reference values published in the NOP but is updated yearly based on the average share of CRSTMP-only delays (attributed by ANSP) in the previous three years.
- The maximum bonus is fixed at 2% of the determined costs, whereas the maximum penalty is fixed at 4% of the determined costs.

Terminal Incentives:

- The pivot values are modulated for CRSTMP related delays only and are further adjusted yearly based on the actual share of CRSTMP related delays in the given year.
- The maximum penalty is set at 0.1%, the maximum bonus is set at 0.5% of determined costs.

As with all incentive schemes based on CRSTMP-only delays, inconsistencies or errors, by the ANSP, in the attribution of cause of delay could impact the financial incentive.

3.5 Investments

Romania - ROMATSA

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	19.7	18.7	18.2	19.8	19.2	95.6
	En route	17.8	16.9	16.8	18.1	17.5	87.1
	Terminal	1.9	1.8	1.4	1.7	1.7	8.5

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	ATM System 2015+ Phase 2	The "ATM2015+ System" project addresses the flight data processing systems, surveillance data processing systems, human-machine interface systems and the introduction of CPDLC capability. The roadmap of the project includes the following stages of STEP 1 development: the baseline system - phase 1, operational as of the 8th April of 2019 and phase 2 transferred into operations in November 2021 with enhanced functionalities. More details can be found in section 2.1 of the performance plan.	7.4	Yes	Yes	3.3	0.0
Total:						3.3	0.0

Airspace user feedback regarding major investments

In 2021, the airspace users had several questions regarding the investments:

- Requested more details regarding the other new investments. These details have been provided in Annex E of the performance plan.
- Expressed their concerns with regards to the 100% en route costs allocation of the new major investment. Romania clarified that the second phase of the investment (which is continuing from RP2) covers only en route functionalities.
- Enquired about the other new investments covering airports, which were not included in the performance plan. Romania clarified that the part of costs included in the performance plan only covers the two Bucharest airports included in the performance plan.

In 2022 airspace users requested further details for all investments, which have been added in Annex E of the performance plan. Airspace users also noted that the deductions of depreciation costs in order to avoid double charging of RP2 costs related to investments should be traceable.

Review of investments

New major investments represent 3.5% of the total determined costs of investments over RP3. The new major investment ("ATM System 2015+ Phase 2") was also included in the RP2 performance plan, however it was delayed to RP3 following the re-submission of the RP2 performance plan in 2018. The RP2 actual CAPEX was 48% of the planned value for the same period and the amount underspent was 56M€. In terms of depreciation and cost of capital, the airspace users have financed 32.5M€ for investments that have not been materialised. The NSA noted that it is being closely monitored in order to avoid any double charging of these costs to airspace users. An internal procedure has been developed by the ANSP to monitor the delayed/postponed investments of RP2, noting that the amounts that have been already charged will be deducted from the depreciation costs in RP3.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	53.8	47.1	0.2	0.8	1.5	3.6	5.3	11.4
Existing investments			19.6	17.6	15.7	15.1	12.9	80.9

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls?



There is a significant capacity surplus in Romania during RP3, reducing from 37% in 2022 to 21% in 2024.

There is one new major investment in Romania during RP3 which contributes to the en route capacity, the ATM2015+ System Phase 2 investment. The investment is linked to PCP/CP1 ATM Functionalities AF1, AF3, and AF5. The investment contributes to scalability and flexibility and is in line with the overall European ATM evolution.

Other (non-major) investments contribute further to the en route capacity (Management of air traffic capacity and flows investment), to airport/TMA capacity (TWR modernisation program and Arrival Manager (AMAN) investments), and the digitalisation of the ATM system (Modernisation of aeronautical information systems and Modernisation of systems for the use of aeronautical meteorological information investments). Further communications, navigation, and surveillance investments contribute to resilience, scalability and, flexibility.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?



According to annex E of the performance plan, Phase 1 of the ATM2015+ System investment was implemented in 2019 introducing the new ATM-system and its core functionalities (FDPS, RDPS, CWP/HMI improvements), which contributed to capacity improvements and continue doing so during the ongoing reference period and beyond.

The Phase 2 improvements planned for deployment for 2021 target safety nets associated with ASM, extended AMAN (supporting adjacent ANSP), support functions and AIM/MET improvements and additional capacity contributions may be expected from the further improvements to the Tactical Tool (TCT). Improvements in MET data availability may improve capacity in non-nominal situations when weather phenomena may already have decreased the capacity from the baseline values.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented? 

While the ATM2015+ system implementation has been delayed by several years from the original deployment target date, the current capacity surplus combined with the ATM2015+ System investment Phases 1 and 2 ensure a proactive approach to the capacity management.

3.5.4 PRB Key Points

- Romania's CAPEX execution level over RP2 was only 48% of the planned values. The airspace users have financed 32.5M€ for investments that have not been materialised. The NSA noted that it is being closely monitored in order to avoid any double charging of these costs to airspace users.
- There is a capacity surplus in Romania during RP3.
- New major investment during RP3 contributes to en route capacity and is linked to PCP/CP1 ATM functionalities AF1, AF3, and AF5. Additional non-major investments contribute also to airport/TMA capacity.
- Investments are in line with the overall European ATM evolution and contribute to resilience, scalability, and flexibility.

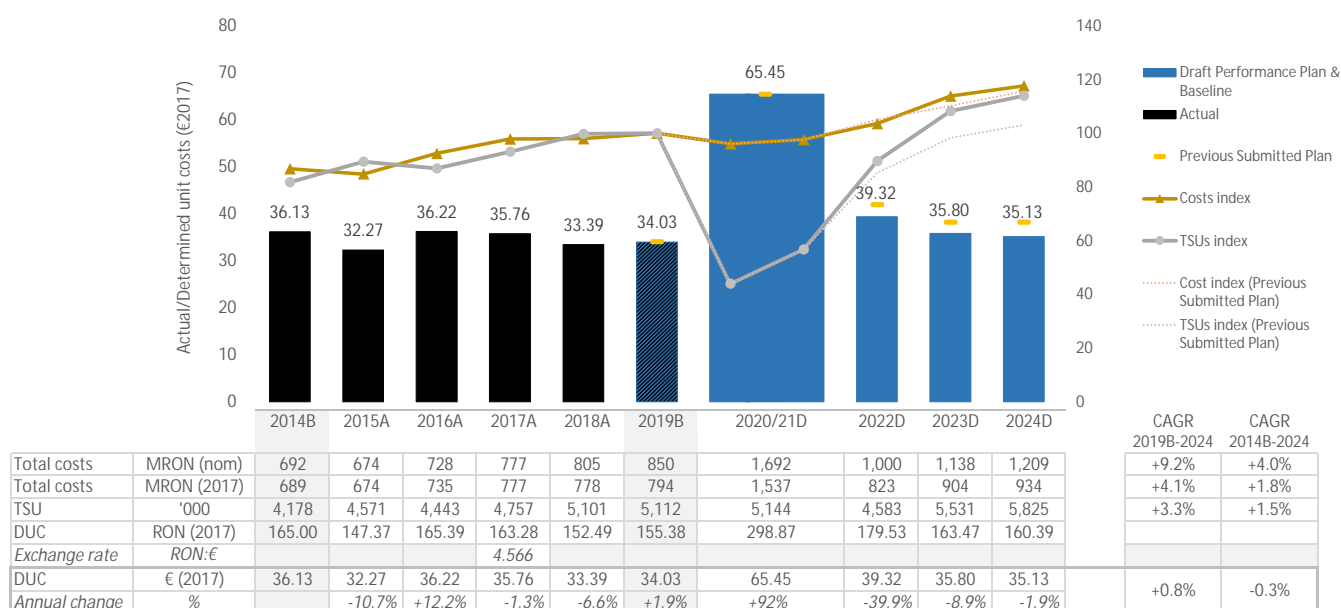
ROMANIA

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Romania - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



4.1.2 Summary of baseline review

DUC 2019 baseline consistent with <u>actual unit costs</u> or deviation adequately justified?	34.03 €2017	✓
No major issues identified.		

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target?	+0.8%	✓
The DUC is planned to increase on average by +0.8% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).		
b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target?	-0.3%	✗
The DUC is planned to decrease on average by -0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).		
c) DUC level (2019 baseline) lower than the average of comparator group (C) average (39.84 €2017)?	-14.6%	✓
The 2019 DUC level is -14.6% lower than the average of the comparator group.		
d) Deviation exclusively due to measures necessary to achieve the capacity targets?		n/a
e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users?		n/a

4.1.4 PRB Conclusions

The PRB concludes that the cost-efficiency targets proposed by Romania should be approved.

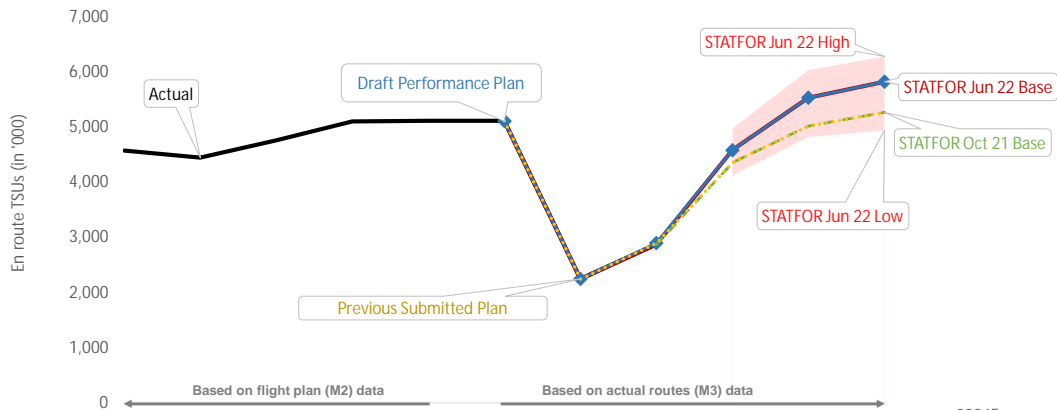
- Romania is consistent with the RP3 DUC trend in terms of average reduction.
- Romania is not consistent with the long-term Union-wide DUC trend.
- Romania is consistent with the average DUC baseline of the comparator group.
- Romania presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

- Romania should justify the cost of capital assumptions and should revise downwards the cost of capital.
- Romania should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends, or should revise terminal RP3 cost-efficiency targets downwards.

4.2 Review traffic forecasts and baseline

Romania - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	4,571	4,443	4,757	5,101	5,117	5,112	2,246	2,870				
	Annual change %		-2.8%	+7.1%	+7.2%	+0.3%	+0.2%	-56.1%	+27.8%				
STATFOR Jun 22 Base	'000 TSUs									4,583	5,531	5,825	+13.9%
	Annual change %									+59.7%	+20.7%	+5.3%	
STATFOR Oct 21 Base	'000 TSUs									4,360	5,022	5,269	+3.1%
	Annual change %									+51.9%	+15.2%	+4.9%	
Performance Plan	'000 TSUs						5,112	2,246	2,898	4,583	5,531	5,825	+13.9%
	Annual change %						+0.2%	-56.1%	+29.1%	+58.1%	+20.7%	+5.3%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019 (PP baseline, M3)	5,112	
2019A (as in the Reporting tables, M2)	5,117	
2019B/ 2019A	-0.10%	-0.10%
2014 (PP baseline)	4,178	
2014A (as in the Reporting tables, M2)	4,182	
2014B/ 2014A	-0.10%	-0.10%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2019 and 2014 traffic baselines were adjusted by the M2/M3 CRCO 12-months coefficient (-0.10%).

Review of 2014 and 2019 traffic baseline
 The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-0.10%). The coefficient slightly decreases the number of the 2014 and 2019 traffic baselines while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024?

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast
 n/a

Review of the PP traffic forecast
 The en route traffic forecast presented in the performance plan of Romania is in line with the STATFOR June 2022 base scenario.

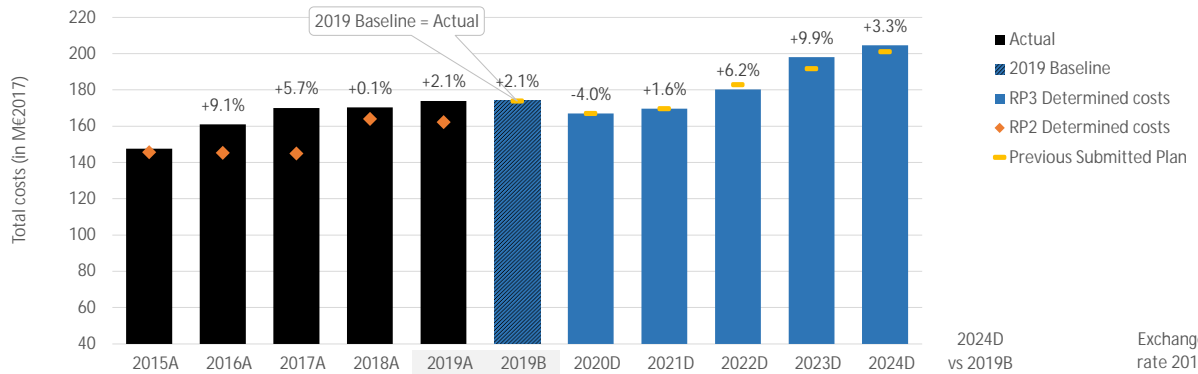
4.2.4 PRB Key Points

- Romania en route traffic forecast is in line with STATFOR June 2022 forecast.
- No major issues identified.

4.3 Review of determined costs and baseline

Romania - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



	2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D	2024D vs 2019B	
Total costs	MRON (nom)	674	728	777	805	850	850	829	863	1,000	1,138	1,209	+42.3%
Annual change	%		+8.1%	+6.7%	+3.7%	+5.5%	+5.5%	-2.4%	+4.0%	+15.9%	+13.8%	+6.2%	+24.7%
Inflation index	2017 = 100	100.0	98.9	100.0	104.1	108.2	108.2	110.6	113.7	125.9	130.9	134.8	+17.6%
Total costs	MRON (2017)	674	735	777	778	794	794	762	775	823	904	934	+17.6%
Annual change	%		+9.1%	+5.7%	+0.1%	+2.1%	+2.1%	-4.0%	+1.6%	+6.2%	+9.9%	+3.3%	+17.6%
Total costs	M€ (2017)	148	161	170	170	174	174	167	170	180	198	205	+17.6%

Exchange rate 2017	RON:€
	4.56629

Is inflation in PP in line with IMF (April 2022 forecast)? Yes

4.3.2 Baseline review

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 No adjustments applied to the 2014 and 2019 cost baselines.

2014/2019 baseline analysis

The 2014 and 2019 cost baselines are in line with the 2014 and 2019 actual costs as presented in the en route reporting tables.

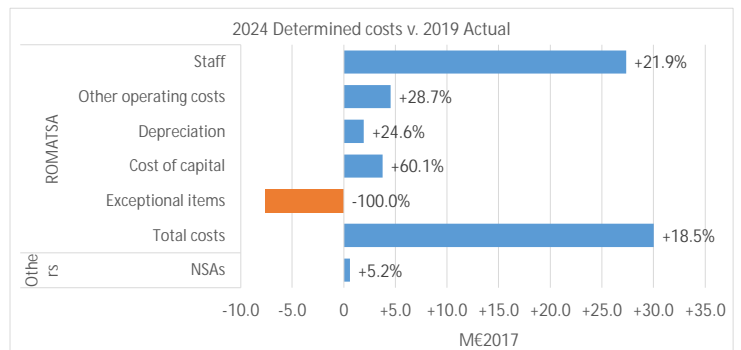
4.3.3 Review of the RP3 determined costs and incentives

	M€2017	%
Review of 2020/2021 determined costs		
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	-0.2	-0.1%

- Review of cost elements
- Investments (see details in 3.5)
 - Cost of capital (see details in 4.3.1)
 - Pension costs (see details in 4.3.2)
 - Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	2.00%
Maximum penalty (% of determined costs)	4.00%
Additional incentives?	No



The costs of Romania are planned to increase by +17.6% (+30.6M€2017) between actuals 2019 and planned 2024. The main contributor to this planned increase in costs is ROMATSA (+18.5%, or +30.0M€2017 overall).

For ROMATSA, the planned increase in costs is largely driven by additional staff costs (+21.9%, or +27.4M€2017 between 2019 and 2024).

- According to the information in annexes A and R of the performance plan, the increase in staff costs is explained mainly by a significant intake of ATCOs (already started during RP2 and planned to continue over RP3) to cover the retirement of ATCOs, and an increase of social security contributions primarily due to the removal of the ceiling for the contribution, which led to an overall increase in gross staff costs. Staff costs were revised upwards by +12.3M€2017 (+3.0%) for the period 2022-2024 compared to the performance plan submitted in November 2021.

- Other operating costs are planned to increase by +4.6M€2017 (+28.7%) between 2019 and 2024, covering the ATCOs and ATSEPs training, as well as the costs for services needed to comply with EU Regulations regarding Datalink and PBN. These also reflect increases in energy prices and raw materials. Other operating costs have been reduced for 2022 and kept unchanged for 2023-2024 compared to the performance plan submitted in November 2021.

- The increase in depreciation costs (+24.6%, or +1.9M€2017 between 2019 and 2024) is mainly accountable to the entry into operation of phase 1 of the new ATM system in 2019, followed by phase 2 in 2022, and to the costs related to the upgrade of the fall-back system due to be authorised in 2021 for the period 2022-2024. Depreciation costs have been revised upwards by +0.9M€2017 (+3.3%) for the period 2022-2024 compared to the performance plan submitted in November.

- The cost of capital increase (+60.1%, or +3.8M€2017 between 2019 and 2024) is due for the most part to an increase in the net current assets (that take also into consideration the under-recoveries from 2020-2021) and to an increase in the RoE from 6.48% in 2019 to 7.41% in 2024 (but significantly reduced from the performance plan submitted in November 2021 presenting 12.21% for 2024), which is partially offset by the introduction of debt financing in RP3 for the loan taken to cover loss of revenues in 2020 and 2021 (however, the interest rate which was set at 2.72% in the performance plan submitted in November 2021 has been revised upwards to 5.2% in 2022, 6.83% in 2023 and 6.2% in 2024 to reflect the changes in the ROBOR6M to which it is linked, as well as the amount still to be drawn until 31.12.2022). The cost of capital has been revised downwards compared to the performance plan submitted in November 2021, as requested in the Commission Decision (EU) 2022/728 of 13 April 2022 (by a total of -13.6M€2017 or -9.4% for the 3-year period 2022-2024).

- Exceptional items relating to the provisions for employee benefits were recorded in actual RP2 costs. As no amounts are recorded in this category in RP3, this represents a decrease by -7.6M€2017 between 2019 and 2024. It is not clear whether these provisions materialised and/or whether these are now included in the determined staff costs for RP3.

The NSA costs are planned to increase between 2019 and 2024 (+5.2%). These have been significantly revised downwards compared to the performance plan submitted in November 2021.

Overall, the revised determined costs for 2022 have been revised downwards by -1.5%, while they have been revised upwards by +3.3% and +1.7% for 2023 and 2024 respectively, compared to the performance plan submitted in November 2021 (+7.1M€2017, or +1.2% in total for the 3-year period 2022-2024) while the forecast TSUs has been revised upwards by +8.8%.

4.3.4 PRB Key Points



- There are no adjustments to the cost baselines.

- Between 2019 and 2024, the total costs for Romania is planned to increase by +17.6%. The main contributor is the increase in staff cost for ROMATSA (+18.5%, or +30.0M€2017).

- The increase in the costs of ROMATSA is mainly due to the increase in staff costs.

- In RP2, in terms of depreciation and cost of capital, airspace users have financed 32.5M€ for investments that have not been materialised. The NSA noted that it is being closely monitored in order to avoid any double charging of these costs to airspace users. An internal procedure has been developed by the ANSP to monitor the delayed/postponed investments of RP2, noting that the amounts that have been already charged will be deducted from the depreciation costs in RP3.

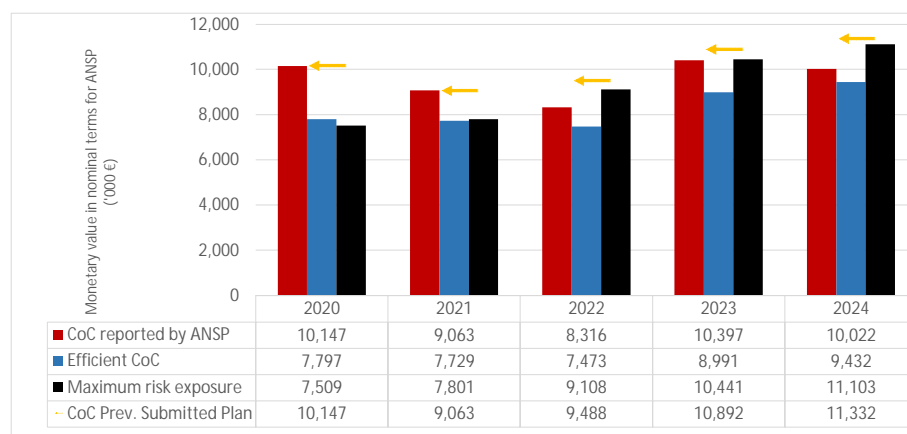
4.3.A Cost of capital

ROMATSA - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	170,655	177,289	207,007	237,302	252,334
Monetary value of Return on Equity	9,923	7,723	4,977	5,318	5,732
Ratio RoE/DC (%)	5.8%	4.4%	2.4%	2.2%	2.3%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Difference CoC reported by ANSP vs Efficient ('000 €)	2,350	1,335	843	1,406	590
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Total 2020-2024	6,523
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4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	9.1%	7.6%	11.7%	7.6%	7.8%	6.7%	7.8%	7.1%	7.4%	7.3%
Interest on debts	2.7%	4.0%	2.7%	4.5%	5.2%	3.8%	6.8%	4.3%	6.2%	4.3%
Capital structure (% debt)	7.1%	25.6%	42.8%	28.8%	50.0%	29.3%	52.1%	29.1%	47.3%	29.1%
WACC	8.7%	6.7%	7.9%	6.7%	6.5%	5.8%	7.3%	6.3%	6.8%	6.4%

Is the interest on debts in line with the market?	No
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- The interest rate assumptions and the explanation for the weighted average interest on debt used to calculate the cost of capital pre-tax rate are duly justified. The average interest on debts is not in line with competitive market practices for 2022-2024, however, competitive market practices are not taking into account the recent significant increase of inflation rates.
- The reported return on equity is exceeding the efficient throughout RP3 and the average interest on debts is exceeding the efficient interest on debts in 2022-2024, resulting in a WACC reported in the performance plan that is higher compared to the efficient WACC. The efficient WACC has been calculated based on option 1.
- Over RP3, the reported cost of capital is 6.5M€ above the efficient cost of capital. Despite this, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 2.2% and 5.8%).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	103,129	101,858	103,604	106,825	110,940
Net current assets	13,864	13,372	24,485	35,875	35,815
Adjustments total assets	0	0	0	0	0
Total asset base	116,993	115,230	128,089	142,700	146,754

- The fixed asset base is planned to increase over RP3, which is not in line with the slight decrease in costs of investments described in section 3.5 of this document.
- The net current assets will significantly increase over RP3, however they do not seem to present major issues. Romania noted that net current assets include the amounts stemming from the under recoveries of 2020 and 2021.
- The RAB does not include adjustments to the total asset base.
- The total asset base is planned to increase over RP3, mainly driven by the increase in net current assets.

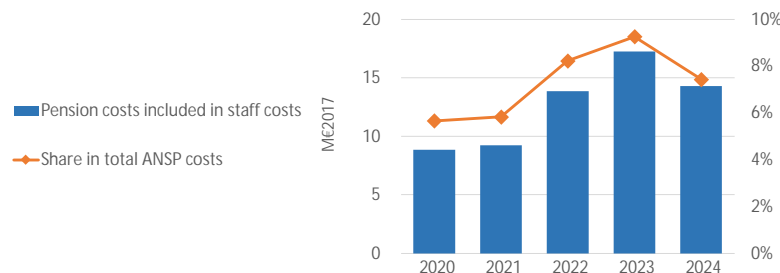
4.3.A.5 PRB Key Points

- Over RP3, the reported cost of capital is 6.5M€ above the efficient cost of capital. Despite this, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 2.2% and 5.8%).
- The net current assets will significantly increase over RP3, however they do not seem to present major issues. Romania noted that net current assets include the amounts stemming from the under recoveries of 2020 and 2021.

4.3.B Pensions

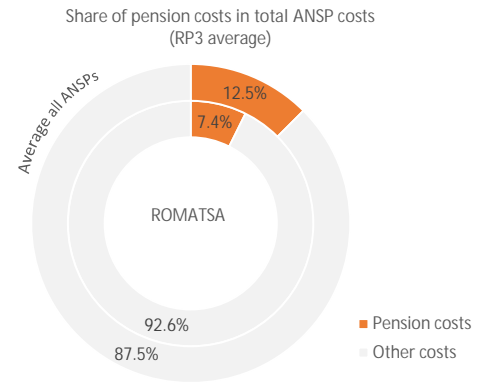
ROMATSA - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



Pension costs included in staff costs	M€2017	8.8	9.2	13.9	17.3	14.3
Year on year variation	% change		+4.3%	+50.2%	+24.6%	-17.1%
Share in total ANSP costs	%	5.7%	5.8%	8.2%	9.3%	7.4%
Year on year variation	p.p.		0.2p.p.	2.4p.p.	1.0p.p.	-1.8p.p.

What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Increase**



Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Lower**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

n/a

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **Yes**

The State pension contributions are set by law, and although for now these have been transferred entirely to the employee, there might be future changes through which the contribution will again be split between the employer and the employee.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **No**

The employer pays 5.45% of the employee's gross wages. For 2020 and 2021, the contribution has been limited to the minimum deductible amount.

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **Yes**

The actuarial calculation takes into account the entries for the ATCO recruitment process, retirements for age limit and, where applicable, special working conditions. An increase in salaries was foreseen starting from 2022, taking into consideration inflation rate and compensation for the net loss of income in 2020-2021 due to higher than projected inflation rates and no salaries increase.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

This has been reported as n/a in Romania's performance plan.

4.3.B.4 PRB Key Points ✓

- No major issues identified.

4.3.C Methodology for cost allocation between ER and TRM

Romania

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Romania mentioned that ROMATSA updated the cost allocation methodology in RP3 "in order to reflect the current regulatory framework".
- While the allocation criteria remains the same, ROMATSA increased the shares of costs allocated to en route due to an update of the underlying statistical data.
- In general, ROMATSA allocates the costs of each territorial unit that serves both en route and terminal based on the following criteria: 1) the organisational structure, 2) the average distance flown or time spent, and 3) the personnel employed.
- ROMATSA uses the following percentages for en route allocation in RP3: APP, 100%; combined APP/TWR, 50% considering the average distance flown and time spent, provision of information services and search and rescue; MET, 80%; headquarters costs, 90%; CNS staff wages, according to the percentage of the equipment served; and administrative staff wages, according to the average allocation of the other categories of staff.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

Yes

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

Romania proposes to increase the following allocation percentages to en route with respect to RP2:

- In RP3, the combined APP/TWR is allocated 50/50 taking into account the average distance flown and time spent, provision of information services, and search and rescue. In RP2, the combined APP/TWR used to be allocated 32% to en route, 68% to terminal.
- In RP3, MET costs are allocated 80% to en route and 20% to terminal. In RP2, MET costs used to be allocated 75% to en route and 25% to terminal.

2.2. Are these changes in cost allocation duly described and justified?

Partially

If, not what are the identified issues?

Romania only stated that the allocation system will allow for a more accurate allocation of costs between en route and terminal.

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

Romania does not provide the impact that the changes in the cost allocation keys have in the determined costs or in the baseline.

4.3.C.3 PRB Key Points

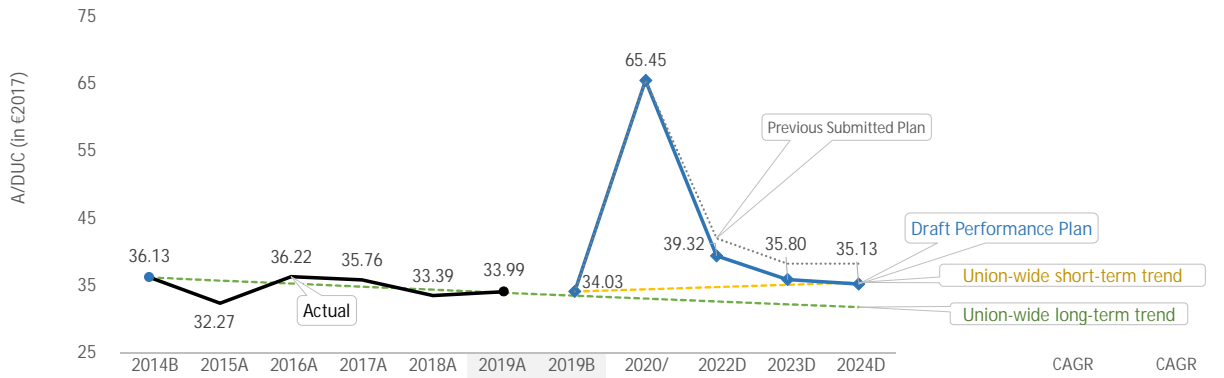


- Romania mentioned that ROMATSA updated the cost allocation methodology "in order to reflect the current regulatory framework".
- While the allocation criteria remain the same, ROMATSA increased the shares of costs allocated to en route due to an update of the underlying statistical data.
- Statistical data can be considered a valid method to calculate cost allocation shares (see PRB en route and terminal cost allocation methodology review).
- There is no record of stakeholders opposing the proposed change in cost allocation shares.
- It is unclear whether or not the changes in the allocation percentages of combined approach/tower and MET services have an impact on the cost base.

4.4 Determined unit costs (DUC)

Romania - En route CZ

4.4.1 Overview and trends of the DUC



	€2017	2014B	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D	CAGR 2014B-2024D
DUC		36.13	32.27	36.22	35.76	33.39	33.99	34.03	65.45	39.32	35.80	35.13	+0.8%	-0.3%
Annual Change	%		-10.7%	+12.2%	-1.3%	-6.6%	+1.8%	+1.9%	+92%	-39.9%	-8.9%	-1.9%		
Union-wide target	%								+120%	-38.5%	-13.2%	-11.5%		

4.4.2 DUC consistency

✓ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	Performance Plan +0.8%	Union-wide +1.0%	Difference -0.2p.p.
✗ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-0.3%	-1.3%	+1.0p.p.
✓ DUC level consistency	2019 baseline	Performance Plan 34.03	Average comparator group 39.84	Difference -14.6%

- The DUC is planned to increase on average by +0.8% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is -14.6% lower than the average of the comparator group. It is also noted that the DUC for Romania is expected to remain below the average DUC of the comparator group for the remainder of RP3.
- Romania presents justifications for a deviation to achieve capacity targets. However, no deviation from cost-efficiency trends is identified.

4.4.3 Analysis of the DUC deviation for achieving the capacity targets n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs n/a

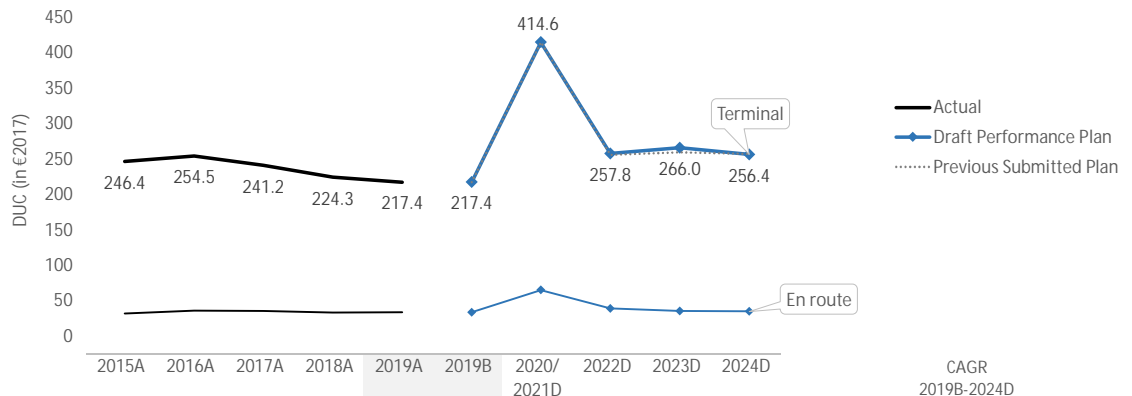
4.4.5 PRB Key Points

- Romania is consistent with the RP3 DUC trend in terms of average reduction.
- Romania is not consistent with the DUC long-term Union-wide trend.
- Romania is consistent with the average DUC baseline of the comparator group.
- Romania presents justifications for a deviation due to restructuring costs. However, no deviation from cost-efficiency trends is identified.

4.5 Terminal

Romania

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	246.4	254.5	241.2	224.3	217.4	217.4	414.6	257.8	266.0	256.4	+4.2%
Annual Change	%		+3.3%	-5.2%	-7.0%	-3.1%	-3.1%	+91%	-37.8%	+3.2%	-3.6%	
DUC - En route	€2017	32.3	36.2	35.8	33.4	34.0	34.0	65.5	39.3	35.8	35.1	+0.8%
Annual Change	%		+12.2%	-1.3%	-6.6%	+1.8%	+1.9%	+92%	-39.9%	-8.9%	-1.9%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Bucharest/ Băneasa (LRBS)	GROUP IV	659.2	4082.0	+519.2%	807.8	2705.7	+233.0%
Bucharest/ Otopeni (LROP)	GROUP III	169.1	196.6	+16.3%	233.8	241.0	+3.1%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The differences between the average DUC for Bucharest airports and the median DUCs of the comparator groups are planned to reduce significantly in RP3 compared to RP2.

4.5.3 Elements subject to review

Baseline review (terminal)

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

Romania has not applied any adjustments to the 2019 traffic or cost baselines.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

As for en route, the terminal traffic forecast presented in the performance plan of Romania is in line with the STATFOR June 2022 base scenario.

Determined costs (terminal)

✓ Is inflation in PP in line with IMF (April 2022 forecast)? Yes

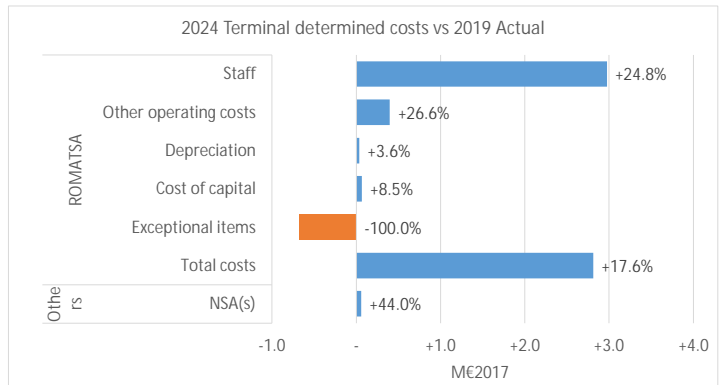
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+0.9	+5.2%

Cost elements - ROMATSA (terminal)

- 🔴 Investments (see details in 3.5)
- 🔴 Cost of capital
 - Interest on loans
 - RoE
 - WACC
- ✓ Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	0.50%
Maximum penalty (% of determined costs)	1.00%
Additional incentives?	No



- The share of terminal investment costs (9%) is in line with the share of terminal total costs (9%).
- The terminal WACC and its parameters are equal to the ones for en route.
- The terminal DUC trend over RP3 planned for Romanian TCZ (+4.2% p.a.) is higher than for en route (+0.8% p.a.).
- Over RP3, the terminal costs are planned to increase by +17.8% (+2.8M€2017). The drivers behind this planned increase, especially linked to the evolution of ROMATSA staff costs (+24.8%, or +3.0M€2017), are similar to those described in detail for en route in section 4.3.3 of this document and mostly reflect the planned intake of ATCOs in OPS for terminal service provision.
- Terminal service units are forecasted to reach 2019 levels after 2024, while terminal costs are planned to reach the 2019 actual level already in 2021.
- Overall, the revised determined terminal costs have been revised downwards by -0.7% for 2022 and by -3.0 for 2024, while they have been revised upwards by +1.1% for 2023, compared to the performance plan submitted in November 2021 (-2.3M€2017, or -0.9% in total for the 3-year period 2022-2024) while the forecast TSUs have been revised downwards by -1.9%.
- The penalty percentage has been raised to 1.0% from 0.5% in the performance plan submitted in November 2021.

4.5.4 PRB Key Points 🔴

- The terminal RP3 DUC trend is +4.2%, which is worse than the en route RP3 DUC trend of +0.8%.
- The terminal RP3 DUC trend is +4.2%, which is worse than the terminal RP2 DUC trend of -3.1%.
- The differences between the average DUC for Bucharest airports and the median DUCs of the comparator groups is planned to reduce significantly in RP3 compared to RP2.
- Romania used the STATFOR June 2022 base forecast for terminal traffic, as for en route.
- Terminal costs increase over the period, mainly due to staff costs.

PRB Assessment

SWEDEN

Draft Performance Plan

Context and scope

Sweden

Performance Plan (PP): Updated draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 14 of IR 2019/317) Dated: 13/07/22
 Documents no: F6423, F6424, F5810, F5811, F5813, F5942, F5814, F5815, F5816, F6344, F5817, F6408, F5943

Relative weight compared to the SES area (2019):

% Flight-hours vs SES	3.4%
% Serv. Units vs SES	3.0%
% Costs vs SES	3.3%

Scope

FAB: DK-SE FAB

ANSPs: LFV
SDATS
ACR
SMHI
ARV - Arvidsjaur
Swedavia

ATS
ATS
ATS
MET
ATS
CNS

Other entities (as per Article 1(2) last para. of Regulation 2019/317): Swedish Maritime Administration

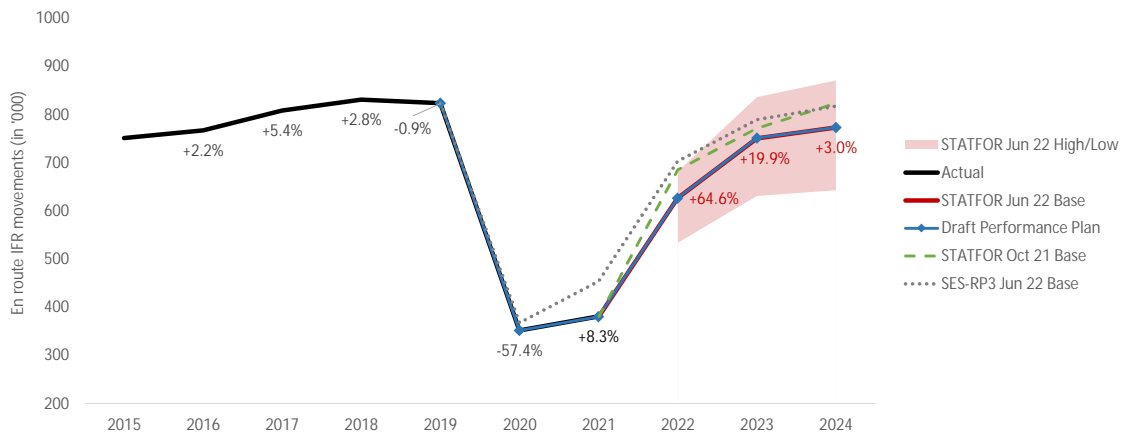
Search and Rescue

Charging zones	CZ Name	# of airports	Market conditions	Simplified charging sch.	Modulation of charges	RP3 cost ratio ER/TRM in PP
En route (ER)	Sweden	n/a	No	No	No	
Terminal (TRM)	Sweden - TCZ	1	No	No	No	
Changes in the CZs from RP2	No					

Comparator group: Group B Other States in the comparator group: Denmark
Finland
Ireland
Norway

Currency: SEK Exchange rate: 9.63311

Actual and forecast traffic (en route IFR movements) between 2015 and 2024



1. Safety



Safety PP targets

ANSP	Safety management objective	2020	2021	2022	2023	2024
LFV	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	B	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C
ACR	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	C	C	D	D
	Safety assurance	C	B	B	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	B	B	C	C
SDATS	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	D	D	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	B	B	C	C
AFAB (Arvidsjaur)	Safety policy and objectives	C	C	C	C	C
	Safety risk management	D	C	C	D	D
	Safety assurance	C	B	B	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Previous submitted PP

LFV	Safety policy and objectives	-	C	C	C	C
	Safety risk management	-	D	D	D	D
	Safety assurance	-	C	C	C	C
	Safety promotion	-	C	C	C	C
	Safety culture	-	C	C	C	C

PRB assessment

The PRB concludes that the safety targets proposed by Sweden should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how ACR, SDATS and AFAB will improve maturity levels over RP3.
- The formalised approach applied by the ANSPs and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

2. Environment



Environment PP targets

	2020	2021	2022	2023	2024
National target for horizontal en route flight efficiency (KEA) (%)	1.26%	1.05%	1.05%	1.05%	1.05%
Previous submitted PP	1.26%	1.05%	1.05%	1.05%	1.05%

PRB assessment

The PRB concludes that the environment targets proposed by Sweden should be approved.

- Swedish horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.

3. Capacity



Capacity PP targets

	2020	2021	2022	2023	2024
National target for en route ATFM delay per flight (min)	0.12	0.05	0.07	0.08	0.08
National target for terminal and airport ANS ATFM arrival delay per flight (min)	0.35	0.05	0.15	0.15	0.15
Previous submitted PP (en route)	0.12	0.05	0.07	0.08	0.08
Previous submitted PP (terminal)	0.35	0.05	0.15	0.15	0.15

PRB assessment

The PRB concludes that the capacity targets proposed by Sweden should be approved.

- Sweden is expected to have a significant capacity surplus throughout 2022-2024.

4. Cost-efficiency 

Cost-efficiency PP targets

	2020/2021	2022	2023	2024	CAGR 2019B-2024	CAGR 2014B-2024
Target for determined unit cost (DUC) (€2017) - En route	141.38	80.42	67.58	61.00	+2.2%	-0.3%
Target for determined unit cost (DUC) (€2017) - Terminal	411.99	178.80	136.86	131.71	+0.8%	n/a
<i>Previous submitted PP (en route)</i>	<i>141.38</i>	<i>70.20</i>	<i>62.86</i>	<i>59.26</i>	<i>+0.2%</i>	<i>+1.0%</i>
<i>Previous submitted PP (terminal)</i>	<i>411.99</i>	<i>155.41</i>	<i>140.55</i>	<i>131.83</i>	<i>+0.9%</i>	<i>n/a</i>

PRB assessment

The PRB concludes that the cost-efficiency targets as proposed by Sweden should be approved.

Sweden has been heavily impacted by Russia's war of aggression against Ukraine. The decrease in traffic forecasted for the remaining years of RP3 would not allow Sweden to meet the trends without a drastic decrease in costs. Therefore, the PRB recommends the Commission to consider these external factors when assessing the performance plan of Sweden by applying the STATFOR October 2021 base forecast in the calculation of the short and long trend:

- Sweden is consistent with the RP3 DUC trend in terms of average reduction.
- Sweden is consistent with the long-term Union-wide DUC trend.
- Sweden is not consistent with the average DUC baseline of the comparator group.

5. PRB recommendations

ENVIRONMENT

- Sweden should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

6. PRB recommendations from the performance plans submitted in November 2021

SAFETY

- Sweden should define explicit measures to improve maturity levels for safety assurance over RP3 for LFV NUAC.
- Sweden should ensure change management practices adopted by ACR, SDATS and AFAB comply with Commission Implementing Regulation (EU) 2017/373.
- Sweden should include additional NSA derived measures to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

ENVIRONMENT

- Sweden should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

COST-EFFICIENCY

- Sweden should decrease the RP3 costs in order to meet the cost-efficiency criteria with the aim of balancing cost, capacity, and traffic.
- Sweden should consider in the RP3 cost base the 4.4M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.
- Sweden should detail the criteria for cost allocation.
- Sweden should detail the return on equity charged by LFV.
- Sweden should ensure that pension costs are correctly reported in the reporting tables and should detail how pension costs are included in cost of capital.
- Sweden should justify the terminal RP3 cost-efficiency targets in regards to the determined unit cost trends and with respect to similar airports, or should revise terminal RP3 cost-efficiency targets downwards.

SWEDEN

Safety KPA

1.1 Summary of safety key data and assessment results

Sweden

1.1.1 Target for EoSM for ANSPs

LFV, ACR, SDATS and AFAB have their EoSM targets defined for each year of RP3.

The EoSM target levels, set in accordance with the Union-wide safety targets, are already met by LFV. ACR, SDATS and AFAB plan to attained the target levels towards the end of RP3.

1.1.2 Measures planned to reach the target (if applicable)

The performance plan provides relevant measures for ACR, SDATS and AFAB that have to improve their performance over RP3. No measures are provided for LFV, however the LFV has already achieved the targets levels.

Additionally, the NSA derived measures are listed to ensure compliance with Commission Implementing Regulation (EU) 2017/373.

1.1.3 Interdependencies and Trade-offs

Safety is an integral part of the management system and is monitored by standard implementation procedures. The impact on safety is also monitored as a part of the regular safety oversight.

1.1.4 Change Management

The change management processes are described with the reference to the national regulations. Procedures compliant with the Commission Implementing Regulation (EU) 2017/373 should constitute sufficient means to ensure minimal negative impact of the change on the network performance.

1.1.5 PRB conclusions

The PRB concludes that the safety targets proposed by Sweden should be approved.

- The EoSM safety targets are consistent with the Union-wide performance targets.
- The measures are sufficiently described to demonstrate how ACR, SDATS and AFAB will improve maturity levels over RP3.
- The formalised approach applied by the ANSPs and NSA ensures that safety has the highest priority and that developments in other key performance areas will not compromise safety.
- The change management practices ensure that any negative impact on network performance is reduced.

1.2 Targets for EoSM for ANSPs and Measures

1.2.1 Target for EoSM for ANSPs and associated measures

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
LFV	Safety policy and objectives	C	C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management	D	D	D	D	D	D	D	✓	
	Safety assurance	B	C	B	C	C	C	C	✓	
	Safety promotion	C	C	C	C	C	C	C	✓	
	Safety culture	C	C	C	C	C	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels are set in accordance with the RP3 Union-wide safety targets. In 2021, LFV has attained the target levels for all five safety management objectives.

The performance plan does not provide any specific measures for LFV, however the ANSP has already achieved the RP3 targets.

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
ACR	Safety policy and objectives		C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management		C	D	C	C	D	D	✓	
	Safety assurance		B	C	B	B	C	C	✓	
	Safety promotion		C	C	C	C	C	C	✓	
	Safety culture		B	C	B	B	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained towards the end of RP3.

The performance plan provides the measures to improve safety culture area (surveys are scheduled for 2023-2024), in safety risk management and assurance (reviewing the risk identification process, including proactive and reactive and predictive methods, regular reviewing of acceptable the risk levels).

Considering that the ANSP has to improve its performance over RP3 in these specific areas, the measures provided are considered relevant and sufficient to achieve required maturity level.

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
SDATS	Safety policy and objectives		C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management		D	D	D	D	D	D	✓	
	Safety assurance		C	C	C	C	C	C	✓	
	Safety promotion		C	C	C	C	C	C	✓	
	Safety culture		B	C	B	B	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets. SDAT needs to improve in safety culture area to achieve the RP3 target level.

The performance plan describes that the ANSP is planning to improve safety culture area by establishing the exchange of lesson learnt with other ANSP. This measure is considered sufficient to achieve the required safety level.

		2020A	2021A	2020	2021	2022	2023	2024	RP3 Union-wide targets consistent	
		Actual	Actual	Target	Target	Target	Target	Target		
AFAB (Arvidsjaur)	Safety policy and objectives		C	C	C	C	C	C	✓	The targets for 2024 have been set in accordance with the Commission Implementing Decision (EU) 2021/891 of 2 June 2021.
	Safety risk management		C	D	C	C	D	D	✓	
	Safety assurance		B	C	B	B	C	C	✓	
	Safety promotion		C	C	C	C	C	C	✓	
	Safety culture		C	C	C	C	C	C	✓	

The EoSM targets have been defined for each year of RP3. The EoSM targets levels, set in accordance with the RP3 Union-wide safety targets, are planned to be attained towards the end of RP3.

The performance plan describes that the ANSP is planning to improve in safety risk management and assurance by re-establishing the annual audits and improve as well as improvements to the hazards review process. The measures are considered sufficient to achieve the required safety levels.

1.3 Interdependencies and Change management practices

Sweden

1.3.1 Interdependencies and Trade-offs

An impact on safety to the changes of the ATM functional system is monitored by standard safety management system mechanism. Depending on the scope of the changes, the appropriate monitoring of the risk is chosen, as well as the mitigations strategy.

Safety is an integral part of the management system, thus no specific indicators for monitoring impact on safety for implementation has been developed.

1.3.2 Change Management Practices

The major airspace changes and design are accompanied by the change management procedure established by the Swedish Transport Agency. Considering ATM system changes and improvements, these are assessed in accordance with the standard change process. The safety assessment conducted by the ANSPs is provided to the authority, which will decide on actions based on internal procedures (TSG 2016-3268). The level of details provided gives confidence that the procedure minimises any negative impact on the network performance.

SWEDEN

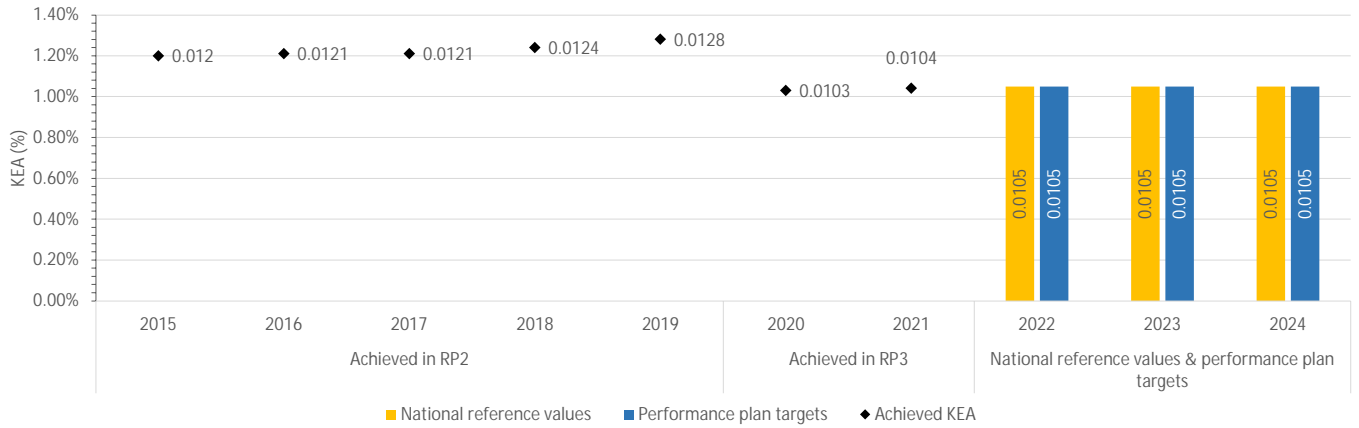
Environment KPA

2.1 Summary of Key Data and Assessment Results

Sweden

2.1.1 Annex IV 1.2: Comparison of ERNIP reference values and performance plan targets

	2020	2021	2022	2023	2024
National reference values	1.26%	1.05%	1.05%	1.05%	1.05%
Performance plan targets	1.26%	1.05%	1.05%	1.05%	1.05%
Comparison of draft performance targets with reference values	n/a	n/a	▲ 0.00%	▲ 0.00%	▲ 0.00%
Consistency with reference values	n/a	n/a	✓	✓	✓



2.1.2 PRB Conclusions



The PRB concludes that the environment targets proposed by Sweden should be approved.

- Swedish horizontal flight efficiency targets are consistent with its reference values published in the June 2021 ERNIP.
- Sweden should ensure it implements all relevant projects outlined in the June 2021 ERNIP.

2.2 Measures of Achievement

Sweden

2.2.1 Annex IV 2.1 (a): Measures of Achievement

New ATM system PRAHA ACC	✘
Commitment to FRA by 2022?	✔
Free route airspace (FRA) was implemented in 2013 and is operated above FL285, with cross border operations implemented with Denmark, Estonia, Finland, Latvia, Norway, and Germany. Cross border FRA with Poland is planned for 2023.	

n/a	Page 169
Reference in PP	Reference in LSSIP
3.2.1(c)	Page 63

Major 2021 ERNIP Recommended Measures:	7
Measure included within performance plan?	
PBN transition plan	✘
ESGG RNAV STAR	✘
Polaris FIR – ATS-route removal	✘
TAS route dismantling in ESAA FRA	✘
FAB DK-SE – Baltic FAB cross-border FRA	✔
SWEA (Swedish Airspace Project) phase 1	✘
FRA vertical limits improvements	✘

Reference in PP	Reference in ERNIP
n/a	Page 76
n/a	Page 118
n/a	Page 125, 126
n/a	Page 146
3.2.1(c)	Page 203
n/a	Page 218
n/a	Page 221

FUA Implementation according to latest LSSIP	Implementation
1	✔
2	✔
3	✔

The chart in section 2.1.1 shows that Sweden achieved a KEA of 1.03% in 2020. In 2021, Sweden reached a KEA of 1.04% which means it achieved the 2021 target of 1.05% in its performance plan.

In terms of the measures recommended by the network manager (NM), Sweden plans to implement 24 hours cross-border free route airspace (CB FRA) with Baltic FAB, but it did not commit to performance based navigation (PBN) implementation, the Swedish terminal manoeuvring area redesign project (SWEA TMA) nor FRA vertical limit improvements from FL095 to FL285. As part of the continuous review of its route network during RP3, it is important that these projects are implemented as recommended in the ERNIP.

Sweden estimated that the average extension to be considered by airspace users affected by temporary reserved areas (TRAs) is up to ten nautical miles per affected flight, reaching 20 nautical miles in rare cases. Improving civil-military co-ordination may further help Sweden improve environmental performance.

2.2.2 Annex IV 2.1(f): Incentive Scheme

Does Sweden plan for an environmental incentive scheme?	✘
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The PRB notes the decision to not implement an incentive scheme or other regulatory measures available to support the achievement of the targets.

SWEDEN

Capacity KPA

3.1 Summary of capacity key data and assessment results

Sweden

3.1.1 En route ATFM delay

The proposed national capacity targets are equal to the national reference values, and are higher than the range of the delay forecast for 2022-2024. Sweden is expected to have a significant capacity surplus throughout 2022-2024.

	2020	2021	2022	2023	2024
1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values? **n/a**

Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024? **Yes**

3.1.2 Arrival ATFM Delay

Stockholm Arlanda is the only airport included in the performance plan. National targets are set significantly lower than in RP2 and represent an improvement compared to average past performance as well.

The performance at Stockholm Arlanda is expected to be significantly better than that of the group of similar airports, even improving compared to RP2.

3.1.3 Incentives

En route:

Sweden has chosen not to modulate the pivot values which are set equal to the national reference values. The maximum bonus is set at 1% and the maximum penalty is set at 2%.

Terminal:

Sweden has chosen not to modulate the pivot values which are set equal to national performance targets. The maximum bonus is set at 1% and the maximum penalty is set at 2%.

3.1.4 Investments

The actual CAPEX for RP2 was 80% higher than the planned and the amount overspent was 45M€. Despite much higher CAPEX, the actual costs related to investments were 4.4M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.

Sweden is expected to have a significant capacity surplus in RP3.

One major investment (linked to all six PCP/CP1 ATM Functionalities) which will possibly contribute to en route capacity is defined. However, the investment description and the planned entry into operations are somewhat contradictory and the capacity benefit during or beyond RP3 cannot be estimated.

Other development investment contributes to the virtualisation and automation of services.

3.1.5 PRB conclusions

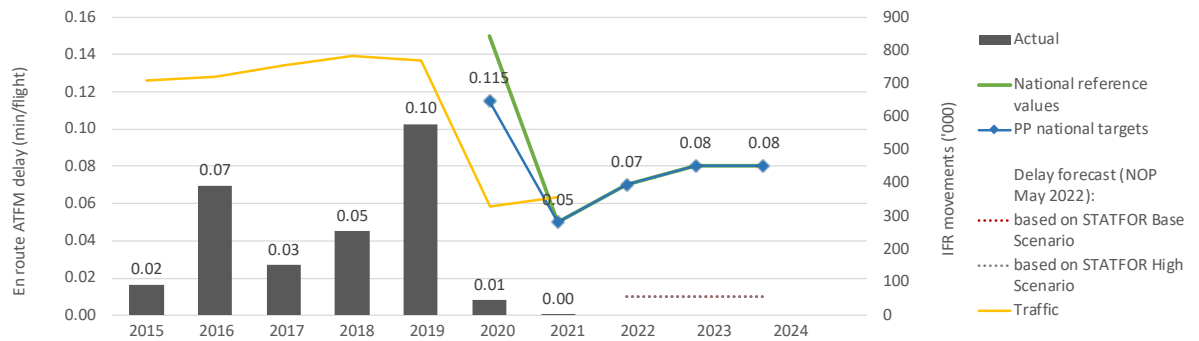
The PRB concludes that the capacity targets proposed by Sweden should be approved.

- Sweden is expected to have a significant capacity surplus throughout 2022-2024.

3.2 En route ATFM delay per flight

Sweden

3.2.1 Overview of en route ATFM delay per flight ✓



Traffic variation	+1%	+1.9%	+4.8%	+3.7%	-1.6%	-57.4%	+9.1%			
Actual delay/flight	0.02	0.07	0.03	0.05	0.10	0.01	0.00			
National reference values						0.15	0.05	0.07	0.08	0.08
PP national targets						0.12	0.05	0.07	0.08	0.08
Delay forecast*:										
Based on STATFOR High Scenario						-	0.01	0.01	0.01	
Based on STATFOR Base Scenario						-	0.01	0.01	0.01	

* NOP May 2022 based on STATFOR Forecast scenarios October 2021

1. PP capacity target is consistent with the reference value	n/a	n/a	✓	✓	✓
<i>Deviation target vs reference value</i>	n/a	n/a	+0%	+0%	+0%
2. NOP delay forecast is lower or equal to the PP capacity target	n/a	n/a	✓	✓	✓

Trend of capacity targets shows a gradual convergence towards the reference values?	n/a
Capacity target in the year 2024 is less than or equal to the 2024 reference value 2024?	Yes

3.2.2 Review of planned capacity enhancement measures ✓

Assessment of capacity enhancement measures and review against NOP

During RP2, Sweden experienced capacity constraints mostly related to weather and equipment issues. Sweden managed to achieve targets in all years between 2015-2020 except for 2019 when it experienced a significant increase of ATM capacity issues.

Apart from the ATCO optimisation, the performance plan provides additionally the following measures which could be identified in the NOP:

- Airspace project SWEA, and
- COOPANS build implementation (not explicitly indicated as a capacity enhancement measure).

The NOP additionally refers to the following:

- Cross-border FRA H24 with EPWW,
- Optimising the use of FRA when military areas are active,
- Improved ATFCM techniques,
- Continuous improvements on the ATS route network and FRA sectorisation,
- Minor updates of ATM system (this may refer to the COOPANS build implementation), and
- Sector configurations adapted to traffic demand.

Due to the low level of details in the performance plan, it is difficult to explicitly establish links between capacity measures listed in both documents.

The planned number of ATCO FTEs shows an increase of 18 ATCO FTEs during RP4 which is 36% lower than in the performance plan submitted in November 2021. The main focus is on Stockholm ACC. The 2024 staffing level is planned to be 7% higher compared to 2019.

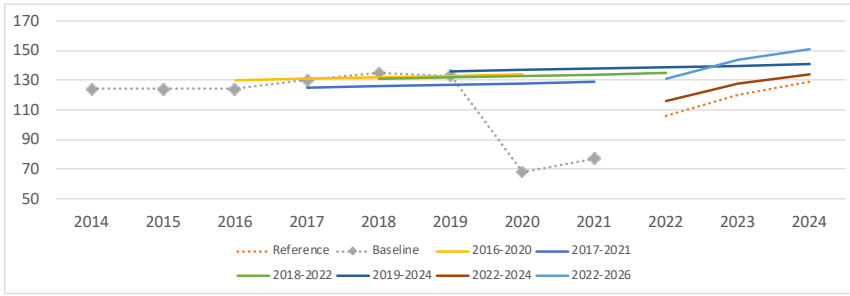
ATCO Planning (FTEs)

		2018A	2019A	2020A	2021A	2022P	2023P	2024P	2024 (end) - 2020 (beg.)
Malmö ACC (ESMM)	Additional ATCOs in OPS to start working in the OPS room	7	4	5	7	6	4	12	+7
	ATCOs in OPS to stop working in the OPS room	6	14	6	6	0	6	9	
	ATCOs in OPS to be operational at year-end	140.14	130.14	129.14	130.14	136.14	134.14	137.14	
Stockholm ACC (ESOS)	Additional ATCOs in OPS to start working in the OPS room	5	1	5	8	7	4	11	+11
	ATCOs in OPS to stop working in the OPS room	10	12	7	3	1	4	9	
	ATCOs in OPS to be operational at year-end	144.73	133.73	131.73	136.73	142.73	142.73	144.73	
Total - LFV (en route)	Additional ATCOs in OPS to start working in the OPS room	12	5	10	15	13	8	23	+18
	ATCOs in OPS to stop working in the OPS room	16	26	13	9	1	10	18	
	ATCOs in OPS to be operational at year-end	284.87	263.87	260.87	266.87	278.87	276.87	281.87	

3.2.3 Review of previous and existing capacity profile plans per ACC



Malmo ACC (ESMM)

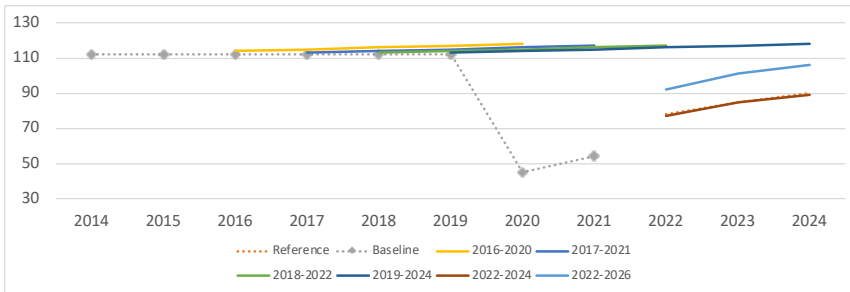


- Historical data shows a 1.4% average annual growth, which mostly took place in 2017 and 2018, followed by a minor decrease in 2019. The planned values were varying around the baseline values during the same period.

- The latest planned capacity profiles show an average annual growth of 7.4%. This results in a significant but decreasing capacity surplus in the remaining years of RP3.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									106	120	129
Baseline	124	124	124	130	135	133	68	77			
2016-2020			130	131	132	133	134				
2017-2021				125	126	127	128	129			
2018-2022					131	132	133	134	135		
2019-2024						136	137	138	139	140	141
2022-2024									116	128	134
2022-2026									131	144	151
Latest vs Reference									24%	20%	17%

Stockholm ACC (ESOS)



- Historical data shows that baseline values remained stable during RP2. The planned capacity profiles were slightly higher than the actual baseline.

- The latest planned capacity profile shows an average annual growth of 7.3% resulting in lower values than in 2019. The planned values are however above the reference values in each year, resulting in a significant capacity surplus in all remaining years of RP3.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Reference									78	85	90
Baseline	112	112	112	112	112	112	45	54			
2016-2020			114	115	116	117	118				
2017-2021				113	114	115	116	117			
2018-2022					113	114	115	116	117		
2019-2024						113	114	115	116	117	118
2022-2024									77	85	89
2022-2026									92	101	106
Latest vs Reference									18%	19%	18%

3.2.4 Review of capacity enhancement measures related to mitigating higher delays due to significant / special events

n/a

3.2.5 Review of the measures to increase capacity and address capacity gaps

n/a

3.2.6 PRB Key Points

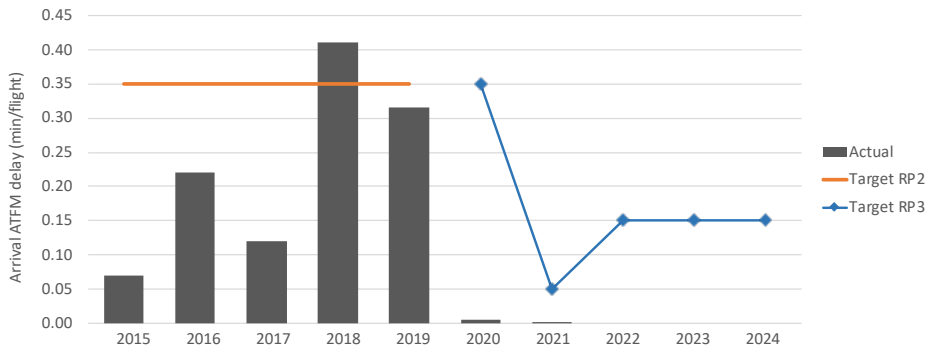


- The proposed national capacity targets are equal to the national reference values and are higher than the range of the delay forecast for 2022-2024.
- Sweden is expected to have a significant capacity surplus throughout 2022-2024.

3.3. Arrival ATFM delay per flight

Sweden

3.3.1 Overview of arrival ATFM delay per flight



	Target (RP2/RP3)											
	RP2	RP3	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
National level	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.05	0.15	0.15	0.15
Stockholm/ Arlanda (ESSA)	0.07	0.22	0.12	0.41	0.32	0.00	0.00	0.05	0.15	0.15	0.15	0.15

3.3.2 Review of targets and comparison with level and trend of past performance during RP2

Stockholm Arlanda is the only airport included in the Swedish performance plan for RP3. The past performance was well below the target for RP2, except for 2018, mainly due to the weather. The proposed target for 2022-2024 is constant and represents a significant improvement with respect to RP2 target and observed performance. According to the performance plan, the proposed constant target comes from taking historical levels and delay causes into account and aims at setting an appropriate level from the traffic level. This proposed target takes into account that a zero, or close to zero target, is too expensive.

3.3.3 Contribution of individual airports to the national target

Airport	Average RP3 (2021-2024) target (min/flight)
Stockholm/ Arlanda (ESSA)	0.13
National Target	0.13



As Stockholm is the only airport included in the performance plan, the national target coincides with the airport target and the potential delay contribution is only associated to this airport.

3.3.4 Comparison of performance with other similar airports

Airport	Group*	Median airport group 2015-2019 delay/flight	RP2 performance		RP3 target	
			Average delay/flight 2015-2019	Difference vs Median	RP3 average target (2021-2024)	Difference vs Median
Stockholm/ Arlanda (ESSA)	GROUP I	0.65	0.23	-0.42	0.13	-0.53

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The ANS performance at Stockholm during RP2 was remarkably better than the median of similar airports. The target for RP3 represents a further improvement with respect to the comparator group.

3.3.5 PRB Key Points

- Stockholm Arlanda is the only airport included in the performance plan. National targets are set significantly lower than in RP2 and represent an improvement compared to average past performance as well.
- The performance at Stockholm Arlanda is expected to be significantly better than that of the group of similar airports, even improving compared to RP2.

3.4 Capacity Incentive schemes

Sweden

3.4.1 En route capacity incentive scheme

Parameters of the en route capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.05 min	1.000%	2.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
NOP reference values			0.07	0.08	0.08
Alert threshold (Δ Ref. value in fraction of min)			±0.050	±0.050	±0.050
Performance Plan targets			0.07	0.08	0.08
Pivot values for RP3			0.07	0.08	0.08

Threshold and pivot value review

The pivot value is fixed at the national target which is equal to the NOP reference value for each year of the reference period. There is a dead band of +/-0.05 minutes before penalties or bonuses apply. The maximum penalty / bonus applies when the dead band is exceeded.

Modulation review

No modulation is applied.

Review of financial advantages/disadvantages

A maximum bonus of 1% of determined costs is countered by a maximum penalty of 2%.

3.4.2 Terminal capacity incentive scheme

Parameters of the terminal capacity incentive scheme

Dead band	Max bonus	Max penalty
±0.075 min	1.000%	2.000%
	✓	✓

Has the NSA chosen to modulate the pivot values?	No
If yes, is the modulation CRSTMP?	n/a

	2020	2021	2022	2023	2024
Bonus/penalty range Δ (in fraction of min)			±0.075	±0.075	±0.075
Performance Plan targets			0.15	0.15	0.15
Pivot values for RP3			0.15	0.15	0.15

Threshold and pivot value review

The terminal incentive scheme includes a dead band of +/-0.075 min (+/-50%) of the pivot value to not lead to adjustments on small variations. The pivot value is not modulated and represents an improvement with respect to past performance.

Modulation review

Sweden has opted for pivot values based on the performance targets (not modulated).

Review of financial advantages/disadvantages

The Swedish performance plan considers a maximum bonus of 1% while maximum penalties of 2%. The targets aim to maintain the good performance observed in the past, although the dead band is quite wide, to avoid the application of bonus / penalty in a reasonable margin.

3.4.3 Additional capacity incentive schemes

n/a

3.4.4 PRB Key Points

✓

En route:

- Sweden has chosen not to modulate the pivot values which are set equal to the national reference values.
- The maximum bonus is set at 1% and the maximum penalty is set at 2%.

Terminal:

- Sweden has chosen not to modulate the pivot values which are set equal to national performance targets.
- The maximum bonus is set at 1% and the maximum penalty is set at 2%.

3.5 Investments

Sweden - LfV

3.5.1 Determined costs of investments over RP3

		2020	2021	2022	2023	2024	Total
Total determined costs of investments*	M€ (nominal)	15.2	17.2	20.8	19.1	18.2	90.5
	En route	15.1	17.1	20.7	19.0	18.1	90.1
	Terminal	0.1	0.1	0.1	0.1	0.1	0.4

* Determined costs of investments include depreciation, cost of capital and cost of leasing for the main ANSP in the State.

RP3 investment ratio ER/TRM



3.5.2 Major investments and justifications for major investments

3.5.2.1 New major investments per ANSP (i.e. above 5M€) - Main ANSP

Nr	Name of the major investment	Asset description	Total value of the asset (M€)	Is the investment mandatory based on SES legislation?	Is there a justified link with measures to achieve capacity targets?	Costs RP3 (M€)	
						ER	TRM
1	COOPANS	COOPANS TopSky ATM systems operated in Stockholm and Malmö ATCC with connected ATS units. Please observe that in table 2.1.1 = total value for the RP3 period	7.6	Yes	Yes	0.2	0.0
2	Expansion RTS	Implementation of a new RTC central in Stockholm with four connected airports (Kiruna, Umeå, Östersund, Malmö) for remote tower services (RTS).	15.9	No	No	7.6	2.5
3	Other development	Other investments are aimed at supporting the intentions of the ATM Master Plan/SRIA and other SES principles and may include areas that are not mandated as part of common projects (e.g. PCP/CP1). This concerns primarily investments in infrastructure and services supporting improved digitalization and architecture of service provision. More details can be found in section 2.1 of the performance plan.	7.2	No	No	0.2	0.0
Total:						8.0	2.5

Airspace user feedback regarding major investments

In 2021, the airspace users made several comments with regards to investments:

- Regarding COOPANS, the users inquired about the inclusion of the determined costs in the cost base. Sweden noted the investment will enter into operation from 2027-2028 and it will start depreciating accordingly.
- The users noted that investments lack sufficient information and that CBAs are required. The NSA noted that investments have been audited and are eligible by regulation requirements, while also adding that investments may be subject to yearly audit, as per article 28 of Commission Implementing Regulation (EU) 2019/317.

In 2022, the airspace users noted that there is a lack of details and/or CBAs of the investments of Sweden. Sweden organised another consultation regarding investments in order to provide further information.

Review of investments

New major investments represent 12% of the total determined costs of investments over RP3. The actual CAPEX for RP2 was 80% higher than the planned and the amount overspent was 45M€. Despite much higher CAPEX, in terms of depreciation and cost of capital, the actual costs related to investments were 4.4M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.

3.5.2.2 Justifications for major investments (i.e. above 5M€), which are not required by SES legislation

Nr	Name of the major investment	Level of impact (network/local/none)	Main KPAs impacted	Specific justifications provided
1	Expansion RTS	Local	Cost-efficiency	Cost-efficiency: Long term efficiency gains in provision of ATS and infrastructure costs for airports.
2	Other development	None	None	n/a

Additional information

Expansion RTS: New ATM system, Remote Tower system, linked to the ATM Master Plan. Supports digitalization, improved robustness, flexibility, and redundancy.
Other development: linked to the ATM Master Plan.

3.5.2.3 Other new and existing investments

	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)
Other new investments	8.6	8.6	1.2	1.4	7.3	7.4	8.0	25.3
Existing investments			12.5	12.6	10.8	8.6	6.6	51.1

Details of the main other new investments

Nr	Name of the major investment	Total value of the asset (M€)	Value of the assets allocated to ANS	2020	2021	2022	2023	2024	Total RP3 (M€)	Description
1	Maintaining - C-, N-, S- and ATS-service	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	The overall purpose of the investment area is to ensure the current level of availability in the technical systems and that these systems meet the legal requirements established at national and European level. More details can be found in section 2.1 of the performance plan.
2	SWEA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	An must needed airspace modernisation project with the purpose to create an airspace around Arlanda Airport that is suitable for modern aircrafts. More details can be found in section 2.1 of the performance plan.
3	Sustained ATS-service	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Today LFV are using a Thales ATM system called TopSky for ordinary ATS-service. TopSky is a system designed with availability and reliability in focus – never the less if TopSky, for any reason, could not be used for ATS-service, LFV has to close the airspace served by ATCC Malmö including Landvetter TMA and Malmö TMA and/or ATCC Stockholm including Stockholm TMA. More details can be found in section 2.1 of the performance plan.
4	Improved environment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	By providing ATCO in approach with better information regarding subsequent take-offs, LFV can more often use optimized flight paths with a shorter flight path (approx 5 NM shorter) as a result. Which in turn reduces AO's fuel consumption and reduces CO2 emissions. More details can be found in section 2.1 of the performance plan.
5	Energy Efficiency improvements	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	By changing to modern heating systems at ATCC Malmö LFV will save cost for energy consumption by approx 2 MSEK/year which according to price forecast will increase upcoming years. More details can be found in section 2.1 of the performance plan.
6	SWIM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	LFV together with all other partners in COOPANS are developing a common platform that will fulfill Common Project One (CP1) requirement related to SWIM and Aeronautical Information Exchange, Meteorological Information Exchange, Cooperative Network Information Exchange and Flight information Exchange. More details can be found in section 2.1 of the performance plan.
7	COOPANS TopSky	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	The subject of the investments is the LFV main ATM system, which is maintained and developed in a collaboration within the framework of the COOPANS Alliance. The purpose of the investment is to ensure that the systems support an increased demand for capacity, automation, safety, security, and as well as to meet the regulatory requirements imposed on ATM systems within the EU. More details can be found in section 2.1 of the performance plan.
8	ADQ - being implemented	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	New investments in ADQ (AIM), started before RP3.
9	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	New investments mainly surveillance and contingency, started before RP3.

3.5.3 Review of investments contribution to capacity

a) Investments contribute to the rectification of identified capacity shortfalls?



Both Swedish ACCs are expected to have a significant capacity surplus until the end of RP3.

The one major investment planned in Sweden during RP3 possibly contributing to en route capacity is the COOPANS investment, which is linked with PCP/CP1 ATM Functionalities AF1, AF2, AF3, AF4, AF5 and AF6. The investment does not have a single operational deployment date but is rolled out in accordance with the COOPANS annual update roadmap. However, the investment description includes a statement concerning the renewal of FDP and HMI which would imply a larger system upgrade than annual rolling updates based on a product roadmap, but this is not elaborated further making the capacity impact assessment difficult.

Annual updates may contribute to resilience, flexibility, and scalability but not enough information is provided to assess this.

Other major investments concern the development of a remote tower centre, which contributes to scalability and flexibility in the airport domain but does not contribute to en route capacity and an investment described on high-level as 'Other development' which contains virtualisation and automation initiatives which can be expected to contribute to scalability and flexibility.

Other (non-major) investments concern infrastructure and communication and navigation equipment. Fall-back ATM-system is defined under other investments which would contribute to resilience. SWIM implementation related investments contribute to scalability and flexibility in line with the European ATM evolution.

b) Justification on investment plans' contribution to capacity (timing and quantified improvement) is provided in the PP?



The COOPANS investment contents are not clearly defined and there is a lack of clarity regarding the scope and content of the investment (annual software updates versus FDP/HMI upgrades). Therefore, conclusive statements regarding how the investment may contribute to en route capacity cannot be made. However, the issue is not critical as a significant capacity surplus is expected.

c) Capacity related capital expenditure takes due account of the time needed to get the planned systems implemented?



The capacity surplus in Sweden is expected to remain on a high level during RP3. The COOPANS investment is planned to be rolled out incrementally during RP3 and the investment description describes a decade long planning process to achieve capacity benefits. However, with the expected capacity surplus the materialisation of these benefits on a longer timeline is not an issue of immediate concern.

3.5.4 PRB Key Points



- The actual CAPEX for RP2 was 80% higher than the planned and the amount overspent was 45M€. Despite much higher CAPEX, the actual costs related to investments were 4.4M€ lower than planned. It is unknown if this amount will be reimbursed to the airspace users.
- Sweden is expected to have a significant capacity surplus in RP3.
- One major investment (linked to all six PCP/CP1 ATM Functionalities), which will possibly contribute to en route capacity, is defined. However, the investment description and the planned entry into operations are somewhat contradictory and the capacity benefit during or beyond RP3 cannot be estimated.
- Other development investment contributes to the virtualisation and automation of services.

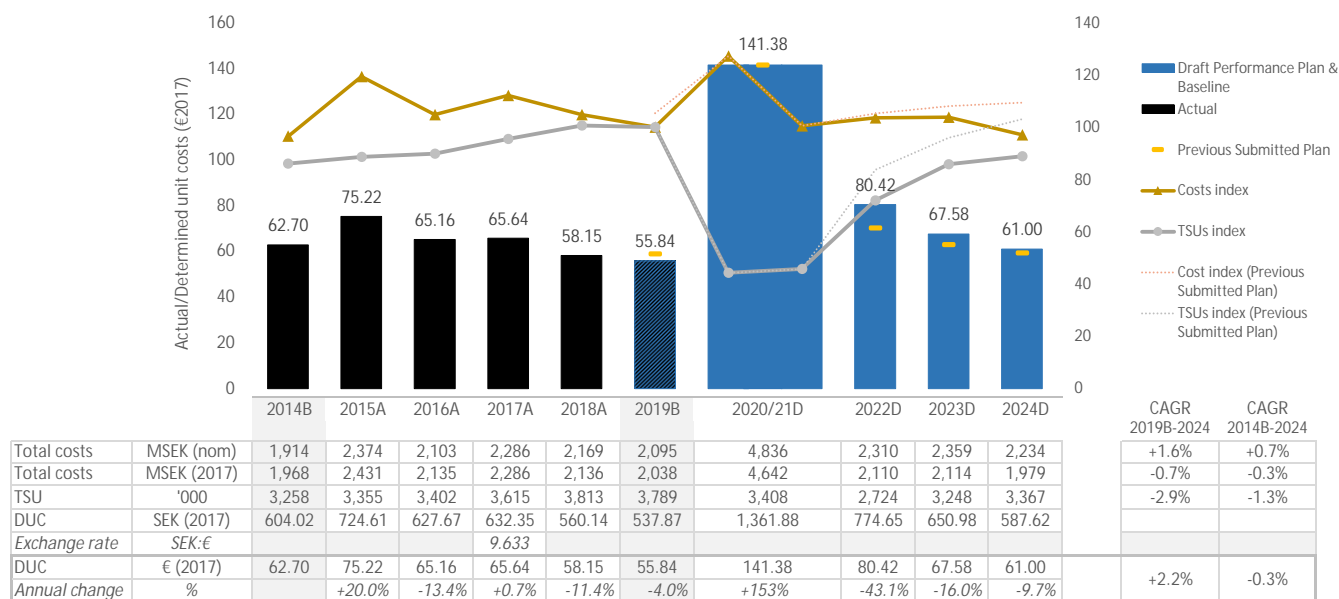
SWEDEN

Cost-efficiency KPA

4.1 Summary of cost-efficiency key data and assessment results

Sweden - En route CZ

4.1.1 Key data underlying en route cost-efficiency targets



4.1.2 Summary of baseline review

DUC 2019 baseline consistent with actual unit costs or deviation adequately justified? 55.84 €2017

Sweden planned to adjust the 2019 cost baseline due to changes in the reporting of EU funding for LfV, the introduction of new airports in the system of en route charges, and the adverse impact of uncontrollable costs relating to LfV pensions.

4.1.3 Summary of cost-efficiency assessment results

a) DUC trend 2019-2024 (RP3) consistent with Union-wide target? +2.2%

The DUC is planned to increase on average by +2.2% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
When considering the STATFOR October 2021 base forecast:
- The DUC would decrease on average by -1.5% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).

b) DUC trend 2014-2024 (RP2+RP3) consistent with Union-wide target? -0.3%

The DUC is planned to decrease on average by -0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
When considering the STATFOR October 2021 base forecast:
- The DUC would decrease on average by -1.9% between 2014 and 2024, which is better than the long-term Union-wide trend (-1.3%).

c) DUC level (2019 baseline) lower than the average of comparator group (B) average (44.74 €2017)? +24.8%

The 2019 DUC level is +24.8% higher than the average of the comparator group.

d) Deviation exclusively due to measures necessary to achieve the capacity targets?

The difference between the RP3 determined costs reported in the performance plan and the determined costs that would be required to meet the cost-efficiency targets is not exclusively due to measures necessary to achieve the capacity targets.

e) Deviation exclusively due to restructuring measures, which will deliver a net financial benefit to users? n/a

4.1.4 PRB Conclusions

The PRB concludes that the cost-efficiency targets as proposed by Sweden should be approved.

Sweden has been heavily impacted by Russia's war of aggression against Ukraine. The decrease in traffic forecasted for the remaining years of RP3 would not allow Sweden to meet the trends without a drastic decrease in costs. Therefore, the PRB recommends the Commission to consider these external factors when assessing the performance plan of Sweden by applying the STATFOR October 2021 base forecast in the calculation of the short and long trend:

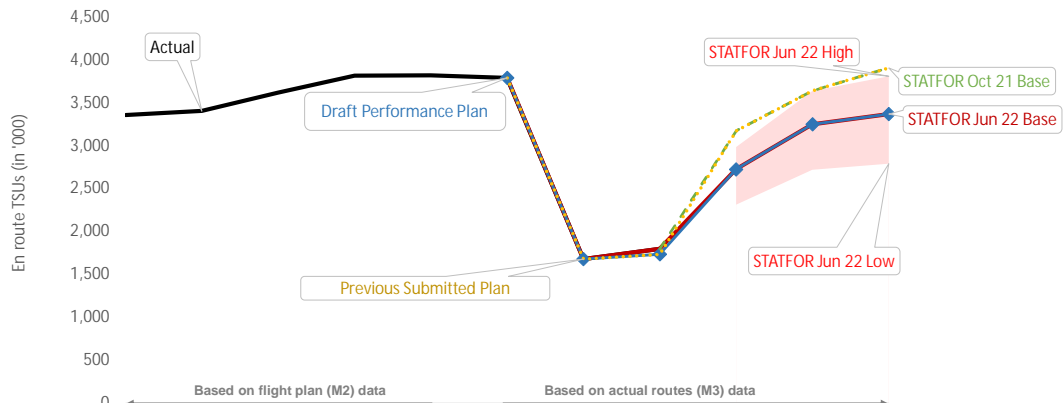
- Sweden is consistent with the RP3 DUC trend in terms of average reduction.
- Sweden is consistent with the long-term Union-wide DUC trend.
- Sweden is not consistent with the average DUC baseline of the comparator group.

- Sweden should consider in the RP3 cost base the 4.4M€ that airspace users have financed in RP2 in terms of depreciation and cost of capital for investments that have not been materialised.

4.2 Review traffic forecasts and baseline

Sweden - En route CZ

4.2.1 Overview of service units forecasts for RP3



		2015A	2016A	2017A	2018A	2019A(M2)	2019B(M3)	2020A	2021A	2022F	2023F	2024F	2024F vs 2019B
Actual	'000 TSUs	3,355	3,402	3,615	3,813	3,820	3,789	1,676	1,795				
Annual change	%		+1.4%	+6.3%	+5.5%	+0.2%	-0.6%	-55.8%	+7.1%				
STATFOR Jun 22 Base	'000 TSUs									2,724	3,248	3,367	-11.1%
Annual change	%									+51.7%	+19.3%	+3.7%	
STATFOR Oct 21 Base	'000 TSUs									3,173	3,637	3,906	+3.1%
Annual change	%									+76.8%	+14.6%	+7.4%	
Performance Plan	'000 TSUs						3,789	1,676	1,732	2,724	3,248	3,367	-11.1%
Annual change	%						-0.6%	-55.8%	+3.3%	+57.3%	+19.2%	+3.7%	

4.2.2 Traffic baseline review

Year	'000 TSUs	CRCO 12-month coefficient
2019	3,789	-0.83%
2019B (PP baseline, M3)	3,789	-0.83%
2019A (as in the Reporting tables, M2)	3,820	-0.83%
2019B/ 2019A	-0.83%	-0.83%
2014	3,258	-0.83%
2014B (PP baseline)	3,258	-0.83%
2014A (as in the Reporting tables, M2)	3,285	-0.83%
2014B/ 2014A	-0.83%	-0.83%

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP
 The 2014 and 2019 traffic baselines were adjusted by the M2/M3 CRCO 12-months coefficient (-0.83%).

Review of 2014 and 2019 traffic baseline
 The traffic baselines are calculated on the basis of 2014 and 2019 actual traffic, and adjusted by the M2/M3 CRCO 12-months coefficient (-0.83%). The coefficient slightly decreases the 2014 and 2019 traffic baselines while rising the DUC baselines.

4.2.3 Review of the PP traffic forecast

Is the forecast for en route TSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024?

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast
 n/a

Review of the PP traffic forecast
 The en route traffic forecast presented in the performance plan of Sweden is in line with the STATFOR June 2022 base forecast. The current situation in Sweden is heavily impacted by th Russia's war of aggression against Ukraine and the sanctions imposed. As a result, the traffic forecast since October 2021 is heavily downgraded.

The total number of service units in 2022–2024 is lower by -13% compared to October's STATFOR forecast.

The Russia's war of aggression against Ukraine comes on top of the COVID-19 pandemic. The number of service units in 2024 is expected to be -11% lower than those recorded in 2019 and +3.4% higher than in 2014.

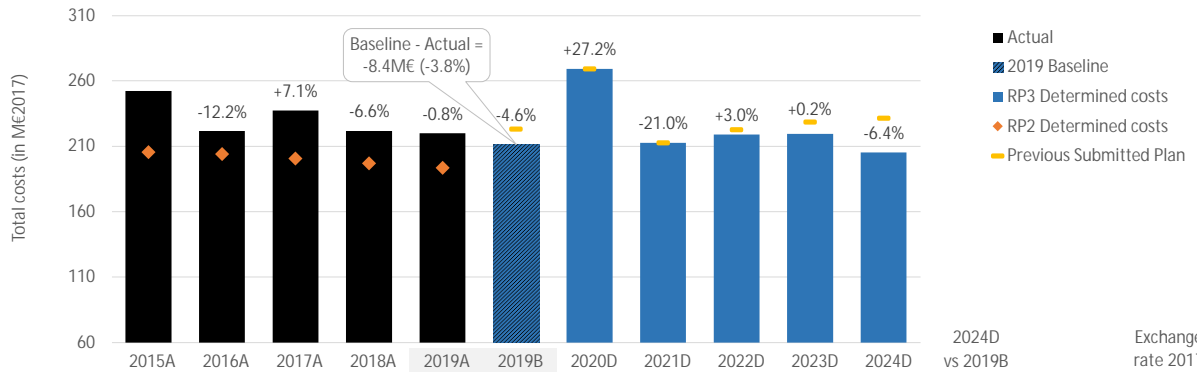
4.2.4 PRB Key Points

- Sweden en route traffic forecast is in line with STATFOR June 2022.
- The current situation in Sweden is heavily impacted by the Russia's war of aggression against Ukraine and the sanctions imposed. As a consequence, the total number of service units in 2022–2024 is lower by -13% compared to October's STATFOR forecast.

4.3 Review of determined costs and baseline

Sweden - En route CZ

4.3.1 Overview of en route costs in RP2 and RP3



		2015A	2016A	2017A	2018A	2019A	2019B	2020D	2021D	2022D	2023D	2024D
Total costs	MSEK (nom)	2,374	2,103	2,286	2,169	2,179	2,095	2,690	2,146	2,310	2,359	2,234
Annual change	%		-11.4%	+8.7%	-5.1%	+0.5%	-3.4%	+28.4%	-20.2%	+7.7%	+2.1%	-5.3%
Inflation index	2017 = 100	97.1	98.1	100.0	102.0	103.7	103.7	104.5	106.0	112.4	114.9	116.9
Total costs	MSEK (2017)	2,431	2,135	2,286	2,136	2,119	2,038	2,593	2,049	2,110	2,114	1,979
Annual change	%		-12.2%	+7.1%	-6.6%	-0.8%	-4.6%	+27.2%	-21.0%	+3.0%	+0.2%	-6.4%
Total costs	M€ (2017)	252	222	237	222	220	212	269	213	219	219	205

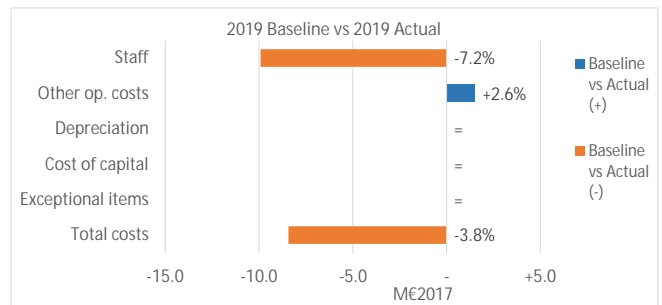
2024D vs 2019B	+6.6%
Exchange rate 2017	SEK:€
	9.63311

Is inflation in PP in line with IMF (April 2022 forecast)? Deviation from index < 1p.p. in 2024

The inflation rates used in the performance plan are in line with the IMF April 2022 forecast (rounded to one decimal place) leading to a deviation of only 0.05 p.p. by the end of RP3.

4.3.2 Baseline review

Baseline analysis	Δ M€2017	%
2014B vs 2014A	27.6	+15.6%
2019B vs 2019A	-8.4	-3.8%



2014 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - Adverse impact from uncontrollable costs (Pensions)	ANSP	Staff	+27.6

2019 Baseline Adjustments	Entity Type	Nature	M€2017
#1 - EU-funding	ANSP	Staff	+1.6
#2 - New airports in the system	ANSP	Other ops.	+1.5
#3 - Adverse impact from uncontrollable costs (Pensions)	ANSP	Staff	-11.5

Summary of description of adjustments to the 2014 and/or 2019 baseline provided in the PP

- The 2014 cost baseline is adjusted for LFV "uncontrollable" pension costs (description and justification provided in annex F to the performance plan).
- The 2019 cost baseline includes the same adjustment, in addition to an adjustment for LFV reflecting the change in the reporting of EU funding and an adjustment reflecting the inclusion of three new airports in the system of en route charges.

2014/2019 baseline analysis

The proposed en route cost baselines differ significantly from the actual costs recorded in 2014 (+15.6%) and 2019 (-3.8%) due to the following adjustments:

- LFV "uncontrollable" pension costs: Sweden explains that fluctuations of LFV pension costs linked with fluctuations of interest rate (used to compute pension liabilities) have to be excluded from cost baselines, since they are not reflected in the planned pension costs for LFV. To remove this effect, the 2014 cost baseline is adjusted upwards (+15.6%, +27.6M€2017), while the 2019 cost baseline is adjusted downwards (-5.2%, or -11.5M€2017).
- EU funding: this adjustment of the 2019 cost baseline (+1.6M€2017) relates to the change in the reporting of INEA funding for LFV (net accounting until 2019, gross accounting as of 2020). This adjustment seems justified.
- New airports in the system: this adjustment of the 2019 cost baseline (+1.5M€2017) reflects the inclusion of three new airports (Scandinavian Mountain Airport, Skövde, and Eskilstuna) in the system of en route charges as of 2020. Based on the information provided in the performance plan, this change is linked with the service provision in the newly established airspace blocks (TMAs). Considering the fact that the new airports were not part of the system in 2019 (or actual 2019 en route costs), this adjustment seems justified for purposes of consistency and trend analysis.

4.3.3 Review of the RP3 determined costs and incentives

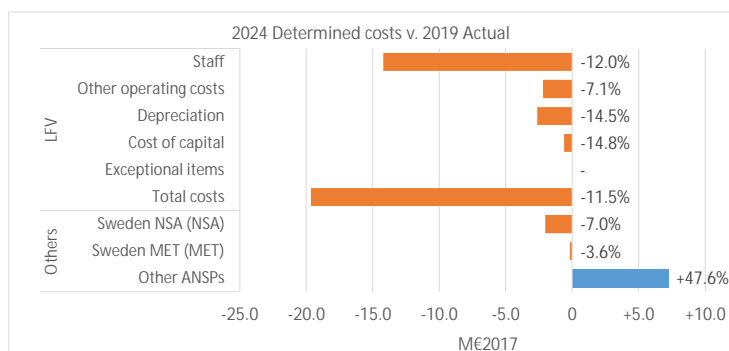
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+7.6	+3.7%

Review of cost elements

- 📌 Investments (see details in 3.5)
- 📌 Cost of capital (see details in 4.3.1)
- 📌 Pension costs (see details in 4.3.2)
- ✅ Allocation ER-TCZ methodology (see details in 4.3.3)

Incentives (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	2.00%
Additional incentives?	No



The total 2024 costs for Sweden are planned to be -6.6% lower (-14.6M€2017) than 2019 actual costs mainly due to the decrease in costs of LJV.

The 2024 costs for LJV are planned to be significantly lower (-11.5%, or -19.6M€2017) than 2019 actuals mainly due to lower staff costs (-12.0%, or -14.2M€2017). Other cost categories are also planned to be lower: other operating costs (-7.1%), depreciation (-14.5%), and cost of capital (-14.8%), reflecting waving of return on equity for LJV. Annex A of the performance plan explains that these cost reductions are driven by the cost-efficiency targets applied by the STA. The LJV costs were revised downwards compared to the performance plan submitted in November 2021 by -32.4M€2017 (-6.3%) for the period 2022-2024.

Between 2019 and 2020, the en route costs for Sweden rose strongly (+22.4% or +49.2M€2017) reflecting mainly an increase in pension costs for LJV, linked with the defined benefit pension scheme and corresponding to the effect of actuarial revaluation of pension liability following the decision of the SPV (National Government Employee Pensions Board) to decrease the discount rate (from -0.7% in 2019 to -1.4% in 2020).

The overall costs of other ANSPs were also revised downwards by -5.7M€2017 (-7.5%) for the period 2022-2024 compared to the performance plan submitted in November 2021. Still, they are planned to be higher by +47.6% (or +7.3M€2017) than 2019 actual costs driven by staffing and training of ATCOs.

The NSA costs are planned to decrease by -7.0% (-2.0M€2017) between 2019 and 2024 reflecting a combination of lower costs for Eurocontrol and slightly higher costs for Swedish Maritime Administration (in relation to search and rescue service).

Compared to the performance plan submitted in November 2021, the determined costs have been revised downwards by -38.9M€2017 (-5.7%), while the forecast TSUs has been reduced by -12.9%, for the period 2022-2024.

4.3.4 PRB Key Points

- Sweden planned to adjust the 2019 cost baseline due to changes in the reporting of EU funding for LJV, the introduction of new airports in the system of en route charges, and "uncontrollable" pension costs. The adjustments seem reasonable.
- The total 2024 costs for Sweden are planned to be -6.6% lower (-14.6M€2017) than 2019 actual costs mainly due to the decrease in costs of LJV.
- Sweden significantly increased costs during 2020, mainly due to pension costs.
- In RP2, in terms of depreciation and cost of capital, airspace users have financed 4.4M€ for investments that have not been materialised. It is unknown if this amount will be reimbursed to the airspace users.

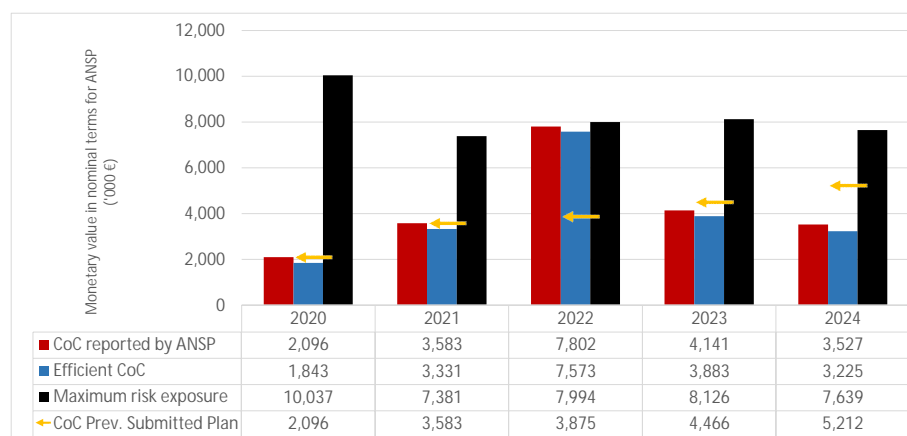
4.3.A Cost of capital

LFV - En route

4.3.A.1 Determined Costs vs Return on Equity

Nominal values ('000 €)	2020	2021	2022	2023	2024
Determined costs	228,114	167,758	181,685	184,683	173,620
Monetary value of Return on Equity	253	252	230	257	302
Ratio RoE/DC (%)	0.1%	0.2%	0.1%	0.1%	0.2%

4.3.A.2 Cost of capital comparison: reported in PP, efficient cost of capital, maximum risk exposure



Total 2020-2024	1,295
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Difference CoC reported by ANSP vs Efficient ('000 €)	2020	2021	2022	2023	2024
	253	252	230	257	302

4.3.A.3 WACC review

Nominal values (%)	2020		2021		2022		2023		2024	
	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient	PP	Efficient
Return on Equity	0.5%	0.0%	0.5%	0.0%	0.4%	0.0%	0.5%	0.0%	0.8%	0.0%
Interest on debts	0.7%	0.7%	1.2%	1.2%	3.8%	3.8%	1.8%	1.8%	1.5%	1.5%
Capital structure (% debt)	82.4%	82.4%	84.4%	84.4%	78.4%	78.4%	81.5%	81.5%	84.6%	84.6%
WACC	0.7%	0.6%	1.1%	1.0%	3.1%	3.0%	1.6%	1.5%	1.4%	1.2%

Is the interest on debts in line with the market?	Yes
---	-----

- Currently LFV has no external loans. However, the long term debt mainly consists of pension debt, with the interest rate set equal to the inflation development. Considering this, the interest rate is in line with competitive market practices.
- The WACC reported in the performance plan has been calculated based on the CAPM. The efficient WACC has been calculated based on option 2.
- According to the additional information, the Swedish government impedes the application of a return on equity during RP3. Despite this, a return on equity is reported ranging between 0.4% and 0.8%, explained by the inclusion of the return on equity of Swedavia and other airports in LFV. Sweden stated that as large parts of its territory are remote, it is more cost-efficient that both en route and terminal air navigation services are provided by one facility.
- Over RP3, the reported cost of capital is 1.3M€ above the efficient cost of capital. Despite this, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 0.1% to 0.2%).

4.3.A.4 Regulated Asset Base review

Nominal values ('000 €)	2020	2021	2022	2023	2024
Fixed asset base	182,873	203,155	157,491	178,153	192,103
Net current assets	33	101	89	81	75
Adjustments total assets	132,771	125,395	95,979	81,213	66,447
Total asset base	315,677	328,652	253,559	259,447	258,625

- The fixed asset base is planned to increase mainly at the end of RP3. This is partially in line with the investments described in section 3.5 of this document.
- The net current assets do not present major issues, as they seem appropriate compared to the expected cash flows.
- The adjustments to the RAB consist of unforeseeable changes in pension regulations arisen from RP2.
- The total asset base will decrease over RP3, driven by the decrease in adjustments to the RAB.

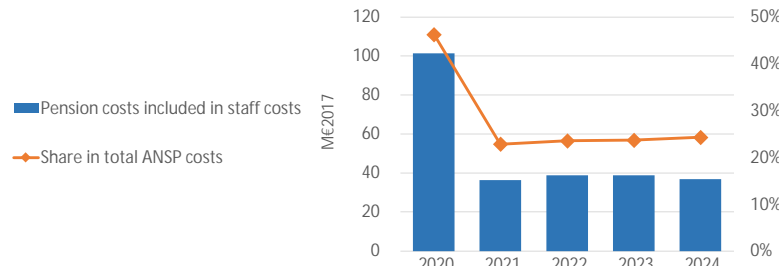
4.3.A.5 PRB Key Points

- The Swedish government impedes the application of a return on equity during RP3. Despite this, a return on equity is reported ranging between 0.4% and 0.8%, explained by the inclusion of the return on equity of Swedavia and other airports in LFV.
- Long term debt consists of pension debt.
- Over RP3, the reported cost of capital is 1.3M€ above the efficient cost of capital. Despite this, the monetary value of the return on equity is commensurate to the total determined costs over RP3 (ranging between 0.1% to 0.2%).

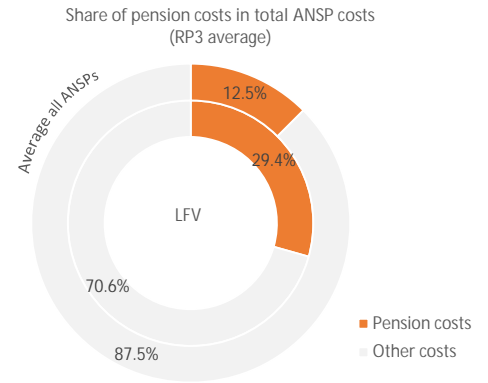
4.3.B Pensions

LFV - En route

4.3.B.1 Review of en route pension costs for the main ANSP (data from en route reporting tables)



	M€2017	2020	2021	2022	2023	2024
Pension costs included in staff costs	M€2017	101.4	36.4	38.7	38.7	36.8
Year on year variation	% change		-64.1%	+6.3%	+0.1%	-4.9%
Share in total ANSP costs	%	46.3%	22.9%	23.6%	23.7%	24.3%
Year on year variation	p.p.		-23p.p.	0.7p.p.	0.1p.p.	0.6p.p.



What is the trend of pension costs share in the total ANSP costs between 2020 and 2024? **Decrease**

Is the ANSP RP3 average share of pension costs higher or lower than the Union-wide average? **Higher**

4.3.B.2 Reporting exceptions and planned changes in assumptions

Does the ANSP allocate some defined benefit pension costs to another cost category than staff costs in the reporting tables? **No**

Based on the information provided in the performance plan (see tab 3.4.3 Pensions of the performance plan), all defined benefit pension costs are allocated to the staff costs in the reporting tables, even though one part of these costs is accounted as interest expenses in the income statement of LFV in accordance with Swedish accounting principles.

It is noted that LFV pension costs presented in the performance plan and the reporting tables do not include cost of capital computed on cost exempt relating to pensions stemming from previous reference periods, which are included in the asset base.

The LFV pension costs presented in the performance plan and the reporting tables also do not include the costs relating to LFV's contributions to the public pensions, which are however included in the staff costs through the social security costs.

Therefore, the pension costs presented on the graph above relate only to the defined contribution and defined benefit schemes which are part of the pension system for government employees (called "PA16").

For state pension contributions, are there planned changes in the contribution rate between 2020 and 2024? **No**

Sweden indicates that, at present, the pension part of the social security costs is equal to 10.81% of the salaries. No expected changes in the rate have been reported in the performance plan.

For occupational defined contribution schemes, are there planned changes in the contribution rate between 2020 and 2024? **No**

Based on the information provided in the performance plan, the same contribution rates have been used to compute the pension costs with respect to the defined contribution scheme between 2020 and 2024.

It is understood that the contribution rate presented in the tab 3.4.3.3 of the performance plan, represents an average contribution rate for different categories of employees (including the LFV's special contribution) and is computed based on the actual outcome of 2020-2021.

For occupational defined benefit schemes, are there planned changes in the main actuarial assumptions between 2020 and 2024? **No**

The pension costs forecast for LFV with respect to the defined benefit scheme is made by SPV (National Government Employee Pensions Board). The forecast is based on the current discount rate -1.4% for the entire period 2020-2024. According to the information provided by Sweden, the discount rate for the coming years is currently unknown and not possible to determine. It is set annually based on the market interest rates for the long-term government bonds.

4.3.B.3 Actions taken by the ANSP to manage the cost-risk associated with pensions

Considering the fact that the defined benefit scheme and associated pension costs are regulated by the "PA16" agreement, the Swedish GAAP, and assumptions decided by the SPV based on the market development of interest and inflation rates, LFV does not seem to be in a position to take any action to mitigate the cost risk associated with pensions.

However, it is noted that in 2016, in order to reduce the risk associated with pensions, a defined contribution scheme was introduced for State employees and that all employees born in or after 1988 have been transferred from the defined benefit to the defined contribution scheme.

4.3.B.4 PRB Key Points

- LFV's average share of pension costs over RP3 is significantly higher than the Union-wide average.
- The pension costs identified separately in the reporting tables do not include the contributions associated with the public pension scheme. These contributions are included in the staff costs through the social security costs.
- The cost of capital is computed on cost exempt relating to pensions stemming from previous reference periods, which are included in the asset base, and it is not included in the pension costs reported in the performance plan and reporting tables.

4.3.C Methodology for cost allocation between ER and TRM

Sweden

4.3.C.1 Cost allocation overview

1.1. Overall principles and criteria for cost allocation methodology between ER and TRM

- Sweden did not change the cost allocation methodology with respect to RP2.
- The allocation method and percentages have been calculated on a statistical basis and costs are separated into cost centres, where all costs and revenues for managing the site are allocated. A cost centre is defined after what service it provides and allocated to the specific service to the en route or terminal cost base.
- A part of Swedish airports also provides en route services due to large TMAs being established in their areas, in order to increase operational efficiency and to reduce the need for organising separate approach/TMA working positions.

1.2. Are the criteria for cost allocation clearly defined and justified?

Yes

If not, what are the issues identified?

n/a

4.3.C.2 Review of changes to cost allocation

2.1. Are there any changes to cost-allocation compared to RP2?

No

If yes, description and justification of the changes from RP2 to RP3 specified in the PP

n/a

2.2. Are these changes in cost allocation duly described and justified?

n/a

If, not what are the identified issues?

n/a

2.3. Is there an impact on the determined costs and/or baseline?

n/a

If yes, description of the impact of the changes in methodology in the determined costs and/or baseline

n/a

4.3.C.3 PRB Key Points

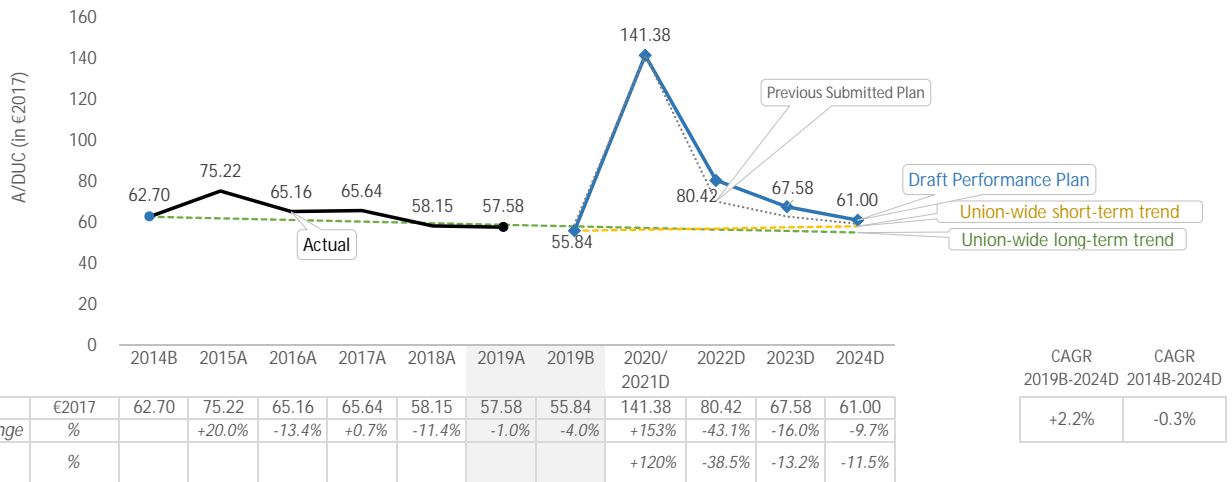


- Sweden did not change the cost allocation methodology with respect to RP2.
- No major issues have been identified.

4.4 Determined unit costs (DUC)

Sweden - En route CZ

4.4.1 Overview and trends of the DUC



4.4.2 DUC consistency

	Performance Plan	Union-wide	Difference
✗ DUC consistency with the Union-wide RP3 DUC target	Trend (CAGR 2019B-2024)	+2.2%	+1.0%
✗ DUC consistency with the Union-wide long-term DUC target trend	Trend (CAGR 2014B-2024)	-0.3%	-1.3%
✗ DUC level consistency	2019 baseline	55.84	44.74
	Average comparator group	44.74	+24.8%

- The DUC is planned to increase on average by +2.2% between 2019 and 2024, which is worse than the RP3 Union-wide trend (+1.0%).
- The DUC is planned to decrease on average by -0.3% between 2014 and 2024, which is worse than the long-term Union-wide trend (-1.3%).
- The 2019 DUC level is +24.8% higher than the average of the comparator group. The DUC for Sweden is expected to remain above the average DUC of the comparator group for the remainder of RP3.
- Sweden presents justifications for a deviation to achieve capacity targets.

When considering the STATFOR October 2021 base forecast:

- The DUC would decrease on average by -1.5% between 2019 and 2024, which is better than the RP3 Union-wide trend (+1.0%).
- The DUC would decrease on average by -1.9% between 2014 and 2024, which is better than the long-term Union-wide trend (-1.3%).

4.4.3 Analysis of the DUC deviation for achieving the capacity targets

n/a

4.4.4 Analysis of the DUC deviation due to restructuring costs

n/a

4.4.5 PRB Key Points

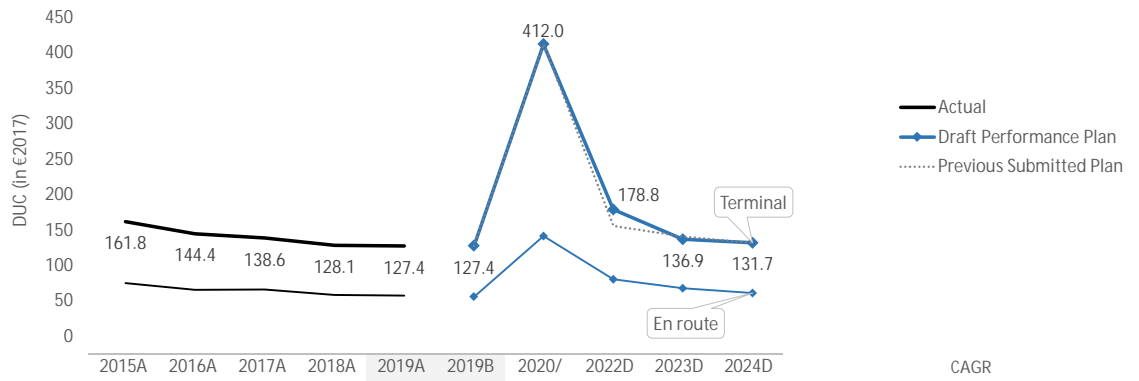
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- Sweden has been heavily impacted by Russia's war of aggression against Ukraine.
- The decrease in traffic forecasted for the remaining years of RP3 would not allow Sweden to meet the short and long trends without a drastic and unrealistic decrease in costs.
- The PRB recommends the Commission to consider these external factors when assessing Sweden by applying the STATFOR October 2021 base forecast for the calculation of the trends.

- When considering the STATFOR October 2021 base forecast for the calculation of the trends:
- Sweden is consistent with the RP3 DUC trend in terms of average reduction.
- Sweden is consistent with the DUC long-term Union-wide trend.
- Sweden is not consistent with the average DUC baseline of the comparator group.

4.5 Terminal

4.5.1 Overview and trends of the terminal DUC



	€2017	2015A	2016A	2017A	2018A	2019A	2019B	2020/2021D	2022D	2023D	2024D	CAGR 2019B-2024D
DUC - Terminal	€2017	161.8	144.4	138.6	128.1	127.4	127.4	412.0	178.8	136.9	131.7	+0.8%
Annual Change	%		-10.8%	-4.0%	-7.6%	-0.5%	-0.5%	+223%	-56.6%	-23.5%	-3.8%	
DUC - En route	€2017	75.2	65.2	65.6	58.1	57.6	55.8	141.4	80.4	67.6	61.0	+2.2%
Annual Change	%		-13.4%	+0.7%	-11.4%	-1.0%	-4.0%	+153%	-43.1%	-16.0%	-9.7%	

4.5.2 Comparison of performance with similar airports

Airport	Group*	RP2 performance (2015-2019)			RP3 Plan (2021-2024)		
		Group median - airport unit cost	Average airport unit cost	Difference vs Median	Group median - airport DUC	Average airport DUC	Difference vs Median
Stockholm/ Arlanda (ESSA)	GROUP I	138.9	140.1	+0.9%	176.0	194.6	+10.6%

* GROUP I - Avg. mvts. in 2016-2018 ≥ 225,000; GROUP II - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and seasonal; GROUP III - Avg. mvts. in 2016-2018 ≥ 80,000 and < 225,000 and not seasonal; GROUP IV - Avg. mvts. in 2016-2018 < 80,000

The average unit cost of Stockholm/Arlanda airport was slightly higher (+0.9%) than the comparator group average over RP2. The difference is expected to significantly increase to +10.6% over RP3.

4.5.3 Elements subject to review

Summary of description of adjustments to the 2019 baseline (traffic and/or cost) provided in the PP

n/a

2019 baseline analysis

The 2019 traffic baseline is in line with the actual value as presented in the terminal reporting tables.

Contrary to the en route 2019 cost baseline, terminal cost baseline has not been adjusted for LFV "uncontrollable" costs (see section 4.3 of this document). This adjustment would correct the terminal cost baseline downwards.

Traffic forecasts (terminal)

Is the forecast for terminal TNSUs in line with STATFOR June 2022 Base forecast, for every year 2022-2024? Yes

Summary of justifications provided in the PP in case of deviation from the STATFOR June 2022 Base forecast

n/a

Review of the PP traffic forecast

As for en route, the terminal traffic forecast presented in the performance plan of Sweden is in line with the STATFOR June 2022 base forecast.

Determined costs (terminal)

Is inflation in PP in line with IMF (April 2022 forecast)?

Deviation from index < 1p.p. in 2024

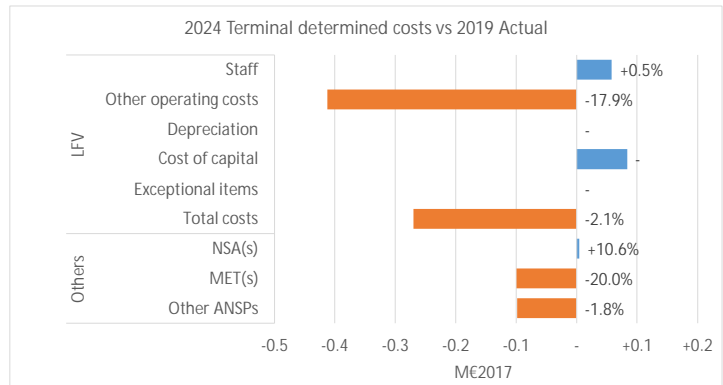
Review of 2020/2021 determined costs	M€2017	%
2020 determined vs actual	+0.0	+0.0%
2021 determined vs actual	+0.2	+0.9%

Cost elements - LFV (terminal)

- Investments (see details in 3.5)
- Cost of capital
 - Interest on loans
 - RoE
 - WACC
- Pension costs

Incentives (terminal) (see details in 3.4)

Traffic risk sharing parameters modulated?	No
Maximum risk exposure to traffic	4.40%
Financial advantages/disadvantages from incentive scheme	
Maximum bonus (% of determined costs)	1.00%
Maximum penalty (% of determined costs)	2.00%
Additional incentives?	No



- As for en route, the inflation rates used for terminal are in line with the IMF April 2022 forecast and rounded to one decimal place.
- The share of terminal investment costs (0%) is lower than the share of terminal total costs (8%).
- The parameters of the WACC, the RoE and the share of financing through equity of terminal are not in line with the ones in en route. For the RoE, the reported values in the reporting table are 0% as the Swedish government impedes the application of a return on equity during RP3. The share of financing through equity for the years 2022-2024 is significantly different in en route reporting tables compared to terminal.
- The total terminal costs are planned to decrease by -2.4% (-0.5M€2017), between 2019 and 2024. The planned decrease relates mainly to LFV other operating costs (-17.9%, or -0.4M€2017), which is partially offset by a smaller increase in staff costs (+0.5%, or +0.1M€2017).
- LFV does not record any depreciation costs since CNS infrastructure is owned by the airport operator (Swedavia, see also section 4.3 of this document). Finally, only minor amounts of cost of capital computed on cost exempt relating to pensions from previous reference period are included in the terminal determined costs as of 2020 (see section 4.3.B of this document).
- As for en route, compared to the performance plan submitted in November 2021, terminal determined costs have been revised downwards by -3.1M€2017 (-5.2%), while the forecast TNSUs has been reduced by -8.2%, for the period 2022-2024.

4.5.4 PRB Key Points

- The terminal RP3 DUC trend is +0.8%, which is better than the en route RP3 DUC trend of +2.2%.
- The terminal RP3 DUC trend is +0.8%, which is worse than the terminal RP2 DUC trend of -5.8%.
- Stockholm Arlanda, the only airport included in the performance plan, had a DUC +0.9% higher than the median of its comparator group over RP2. The difference is expected to become +10.6% over RP3.
- Sweden applies STATFOR June 2022 base forecast for terminal traffic, as for en route.
- Terminal costs are planned to decrease over the period, mainly due to the decrease of other operating costs of LFV.