

PRB

Annual Monitoring Report 2016

Volume 2:
Local Overview



**COPYRIGHT NOTICE
AND DISCLAIMER**

© European Union, 2017

This report has been prepared for the European Commission by the EUROCONTROL Performance Review Unit in execution of Specific contract MOVE/E3/SER/2016-401/SI2.745848. The detailed Safety Review of 2016 in Volume 3 is produced by the European Aviation Safety Agency (EASA).

Reproduction is authorised provided the source is acknowledged. However, neither the European Commission, nor any person acting on its behalf, may be held responsible for the use which may be made of the information contained in this publication, or for any errors which may appear, despite careful preparation and checking.

Table of Contents (Volume 2)

1	INTRODUCTION.....	1
2	COST-EFFICIENCY MONITORING AT STATE LEVEL: READER’S GUIDE.....	1
2.1	INTRODUCTION.....	1
2.2	EN-ROUTE AND TERMINAL ANS ANALYSIS.....	1
2.3	GATE-TO-GATE ANS ANALYSIS AND TECHNICAL NOTES.....	7
3	BALTIC FAB.....	9
3.1	LITHUANIA.....	19
3.2	POLAND.....	37
4	BLUE MED FAB.....	55
4.1	CYPRUS.....	63
4.2	GREECE.....	79
4.3	ITALY.....	95
4.4	MALTA.....	117
5	DANUBE FAB.....	133
5.1	BULGARIA.....	141
5.2	ROMANIA.....	157
6	DK SE FAB.....	175
6.1	DENMARK.....	183
6.2	SWEDEN.....	199
7	FAB CE.....	215
7.1	AUSTRIA.....	223
7.2	CROATIA.....	241
7.3	CZECH REPUBLIC.....	257
7.4	HUNGARY.....	275
7.5	SLOVAKIA.....	291
7.6	SLOVENIA.....	307
8	FABEC.....	323
8.1	BELGIUM.....	335
8.2	FRANCE.....	365
8.3	GERMANY.....	385
8.4	LUXEMBOURG.....	403
8.5	NETHERLANDS.....	409
8.6	SWITZERLAND.....	427
9	NE FAB.....	443
9.1	ESTONIA.....	451
9.2	FINLAND.....	467
9.3	LATVIA.....	483
9.4	NORWAY.....	499
10	SOUTH WEST FAB.....	517
10.1	PORTUGAL.....	527
10.2	SPAIN.....	543
11	FAB UK IRELAND.....	563
11.1	IRELAND.....	575
11.2	UNITED KINGDOM.....	593

1 Introduction

This report complements Volume 1 of the Annual Monitoring Report 2016 of the Performance Review Body (PRB) and presents some more detailed information per State or FAB. This information is structured into four main parts:

- a safety part;
- an en-route capacity part;
- an airport capacity part; and,
- a cost-efficiency part.

The information contained in the first three parts is self-explanatory. However, the PRB considered that the cost-efficiency part deserved a reader’s guide to assist stakeholders in the reading and the understanding of PRB’s analysis.

This reader’s guide is presented in the following section.

2 Cost-efficiency monitoring at State level: Reader’s Guide

2.1 Introduction

The objective of this section is to facilitate the understanding of the analysis made in the cost-efficiency monitoring reports at State level.

The analysis is structured into three main parts: en-route, terminal and gate-to-gate ANS cost-efficiency monitoring. Common templates and analytical frameworks are used for both en-route and terminal ANS, and for the States having several en-route (Spain) or terminal (Belgium and Italy) charging zones the framework is replicated for each charging zone.

Graphs, tables and comments are displayed into “boxes”, with each box focusing on a particular aspect of the monitoring analysis. Section 2.2 below provides explanations on the content of each box constituting the en-route and the terminal analysis. Section 2.3 presents the content of the gate-to-gate analysis and of the technical notes provided at the end of the report when specific issues need to be documented.

2.2 En-route and terminal ANS analysis

1. En-route (or terminal) contextual economic information
<p>Box 1 presents information on the State’s share in SES ANS determined costs in 2016, the name of the main Air Traffic Service Provider (ATSP), FAB membership, national currency and the 2009 exchange rate against the €.</p> <p>For Terminal Charging Zones (TCZs) box 1 also indicates the number of airports in the TCZ (with a classification per number of air transport movements) and whether the traffic risk sharing applies in the TCZ.</p>
2. En-route (or terminal) DUC monitoring at Charging Zone level
<p>Box 2 identifies whether the actual DUC is lower (improvement of the performance indicator) or higher (deterioration of the performance indicator) than the DUC target set in the Performance Plan (PP), and what were the drivers for the improvement or deterioration.</p> <p>It provides transparency on the different steps required to undertake the monitoring of the DUC, showing:</p> <ul style="list-style-type: none"> <input type="checkbox"/> the planned performance (based on RP2 PP data); <input type="checkbox"/> the actual performance (based on the June 2017 Reporting Tables for the year 2016); and <input type="checkbox"/> the differences between actual and planned performance.

To ensure consistency with the determined costs data provided in the adopted PP, actual costs are expressed in 2009 prices. Planned and actual inflation indices are also shown in box 3.

3. Focus on en-route (or terminal) at State/Charging Zone level

Box 3 contains graphical summaries (right-hand side) of the differences in costs, traffic, and DUCs for all years of RP2, as well as comments (left-hand side) on the situation observed for the year 2016.

The comments provide an analysis and general conclusions on the 2016 DUC at State/Charging zone level, including:

- Comparison of actual and planned DUC, and if the actual DUC is higher than the planned DUC, comments on whether the NSA Monitoring Report provides specific information on the definition and application of corrective measures designed to rectify the situation.
- Comparison of actual costs and traffic to the costs and traffic in the PP.
- Comments on the application of the traffic risk sharing mechanism in the State: whether the 2016 difference between actual and planned traffic falls within the $\pm 2\%$ dead band or the $\pm 10\%$ threshold.
- Comments on which entity is driving the difference between actual and planned costs (excluding ATSPs costs which are analysed in box 12).
- A note on the costs exempted from cost-sharing reported by the State (see box 6).

4. En-route (or terminal) traffic monitoring (Actual 2015-2019 TSUs compared to PP)

Box 4 reviews the traffic situation in the Charging Zone, comparing planned with actual values and showing how the actual trend develops over RP2. It also helps visualise (with error bars) the $\pm 2\%$ dead band and the $\pm 10\%$ threshold of the traffic risk sharing mechanism. This provides an indication on the likelihood of activation of the traffic alert mechanism during RP2.

5. En-route (or terminal) costs monitoring (2016 actuals compared to PP)

Box 5 shows a comparison between the actual and the planned costs by entity at State level and by nature at ATSP level. The comparison is made both in absolute terms (in M€₂₀₀₉) and in %. This helps identify the main elements driving the differences between the actual and the planned costs.

The upper chart shows the situation by entity (ATSP, other ANSPs, METSP, NSA/EUROCONTROL). The ATSP is the “main” ATSP of the State concerned (as identified in box 1). The other ANSPs are the other services providers in the Charging Zone, if any (e.g. MUAC in Germany, Netherlands and Belgium/Luxembourg, ITAF in Italy, etc.).

The bottom chart shows the situation for the main ATSP with a breakdown of cost differences by nature (staff, other operating costs, depreciation, cost of capital, exceptional costs and VFR exempted flights). The chart supports the analysis provided in box 12.

Both charts follow the same logic, on the left side the displayed bars for each element show the difference when the actual costs are lower than the planned and on the right side the higher than the planned. VFR exempted flights costs follow the invers logic since these costs entail a deduction from the total cost. (e.g. lower actual VFR exempted flights costs involve a lower deduction and consequently an increase effect on the actual total cost compared with the planned)

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

Box 6 contains a table listing all the costs reported by the State (in the June 2017 Reporting Table) as being exempted from cost-sharing. Costs are listed by item and by entity, (in €₂₀₀₉, using the actual inflation index for 2016 as shown in box 2). The total costs exempted from cost-sharing are summed at the bottom of the table. If the total is negative, the costs are to be recovered from airspace users in future years; if costs are positive, they are to be reimbursed.

These costs will be eligible for carry-over to the following reference period(s) in part or in whole, if deemed allowed by the European Commission (EC) after verification on the basis of the NSA report establishing and justifying these exemptions.

7. En-route (or terminal) DUC 2016 vs. 2016 unit rate charged to users

Box 7 shows all the adjustments required to calculate the Chargeable Unit Rate (CUR) starting from the DUC (in national currency in nominal terms). The bar on the left-hand side of the chart presents the 2016 DUC, and each bar moving to right shows the contribution (in nominal terms) of each adjustment to reach the 2016 CUR (the last bar on right-hand side). The rationale for the different adjustments is provided below:

- Other revenues: to reflect the fact that in some States “other revenues” (such as commercial revenues or income from grants) are deducted from the DUC to calculate the CUR.
- Inflation adjustment: to reflect the impact of a higher/lower than planned inflation index in the year “N-2”, and the subsequent charging/reimbursement to airspace users in year “N”.
- Traffic risk sharing adjustment: to reflect the gain/loss in revenues due to higher/lower traffic than planned in the year “N-2” which is reimbursed/charged to airspace users in year “N”.
- Traffic adjustment: to reflect the fact that, for the costs not subject to traffic risk sharing, over/under recoveries due to higher/lower traffic than planned in the year “N-2” are fully charged/reimbursed to airspace users in year “N”.
- Bonus/penalty: to reflect the fact that the achievement (or the failure to achieve) capacity and environment targets in year “N-2” triggers the charging of a financial bonus (or penalty) in year “N”.
- Costs exempt from cost-sharing: to reflect the elements of costs incurred by the States in RP1 (when deemed eligible) which are charged/reimbursed to airspace users in 2016.
- Over/under recovery up to 2011: to reflect the fact that over/under recoveries incurred before the introduction of the Performance Scheme are carried-over to 2016.

For the calculation of unit costs in box 7, all cost categories listed above are divided by the forecast TSUs for 2016 as laid out in the PP. Note that both the DUC and the CUR presented in this box are before the addition of the administrative unit rate for the billing and collection of route charges on a regional basis.

The right-hand side of box 7 contains a short comment on the main drivers for the difference between the DUC and the CUR.

8. En-route (or terminal) DUC 2016 vs. 2016 actual unit cost for users

Box 8 shows all the adjustments required to calculate the Actual Unit Cost for airspace Users (AUC-U) for 2016 (also referred to as the “true cost for users”) starting from the DUC (in national currency in nominal terms). This reflects the unit cost that airspace users genuinely incur in respect of the activities performed in 2016.

The bar on the left-hand side of the chart presents the 2016 DUC and each bar moving to the right shows the contribution (in nominal terms) of each adjustment to reach the 2016 AUC-U (the last bar on right-hand side). The rationale for the different adjustments is provided below:

- Other revenues: to reflect the fact that in some States “other revenues” are deducted from the DUC to calculate the amounts charged in 2016.
- Inflation adjustment: to reflect the impact of higher/lower inflation index in year “N” which will be charged/reimbursed to airspace users in year “N+2”. Although the cash flow does not take place in year “N”, it is

considered as part of the 2016 AUC-U.

- Traffic risk sharing adjustment:** to reflect the gain/loss in revenues due to higher/lower traffic than planned in year “N”, which will be reimbursed/charged to airspace users in year “N+2”. Although the cash flow does not take place in year “N”, it is considered as part of the 2016 AUC-U.
- Traffic adjustment:** to reflect the fact that, for the costs not subject to traffic risk sharing, over/under recoveries due to higher/lower traffic than planned in year “N” will be fully charged/reimbursed to airspace users in year “N+2”. Although the cash flow does not take place in year “N”, it is considered as part of the 2016 AUC-U.
- Bonus/penalty:** to reflect the fact that the achievement (or the failure to achieve) capacity and environment targets in year “N” will trigger the charging of a financial bonus (or penalty) in year “N+2”. Although the cash flow does not take place in year “N”, it is considered as part of the 2016 AUC-U.
- Costs exempt from cost-sharing:** to reflect the elements of costs incurred in 2016 (if deemed eligible) which will be charged/reimbursed to airspace users in future Reference Period(s). Although the cash flow does not take place in year “N”, it is considered as part of the 2016 AUC-U.

For the calculation of unit costs in box 8, all cost categories listed above (with the exception of other revenues) are divided by the actual TSUs for 2016.

The right-hand side of box 8 contains a short comment of the main drivers for the difference between the DUC and the AUC-U.

9. Focus on ATSP: net ATSP gain/loss on en-route (terminal) activity

Box 9 focuses on the main ATSP net gain/loss on ANS activities. A graphical illustration of this analysis is also shown on the left-hand side of box 11. The main ATSP is the most significant contributor to the State’s costs and the only (or main) entity subject to costs and traffic risk sharing mechanisms foreseen by the Charging Regulation.

The net gain/loss calculated in the bottom line of box 9 results from the combination of three distinct items:

1. The outcome of the cost-sharing mechanism to be retained by the ATSP (including the impact of costs exempted from cost-charging that will be recovered from or reimbursed to users, under the assumption that they will be deemed eligible by the EC).
2. The outcome of the traffic risk sharing mechanism.
3. The outcome of the financial incentive mechanism for capacity and environment targets (expressed in €2009, and in % of revenues in the year).

For the calculation of the gain/loss to be retained in respect of cost-sharing (item 1 above), the following elements are taken into account:

- The difference between determined and actual costs, using:
 - determined costs as presented in the PP for 2016 for the main ATSP, converted into €₂₀₀₉ using the inflation index of the PP (as shown in box 2); and,
 - actual 2016 costs for the main ATSP, as reported in the June 2017 Reporting Tables, converted into €₂₀₀₉ using the actual inflation index (as shown in box 2).

This calculation ensures that the inflation adjustment carried-over by ATSPs is taken into account in the cost-sharing gain/loss.

- Any amounts reported as costs exempted from cost-sharing for the ATSP, as shown in box 6, that are to be recovered from (+) reimbursed to (-) airspace users, provided they are deemed eligible by the EC.

As the confirmation by the EC of the eligibility of costs exempted from cost-sharing arising in 2016 has not yet taken place, there is uncertainty on whether the reported exemptions will be allowed or not. For this reason, the results without taking into account the costs exempted from cost-sharing is also presented in the ATSP analysis in box 12 (for those ATSPs having reported considerable exempted amounts likely to change the results significantly).

For the calculation of the gain/loss to be retained in respect of traffic risk sharing (item 2 above), the following elements

are taken into account:

- The difference in total service units (actual vs. PP) in percentage terms.
- The determined costs of the main ATSP in 2016 after deduction of costs for exempted VFR flights, as these are the basis for the calculation of the traffic risk sharing. These are expressed in €₂₀₀₉, using the 2016 actual inflation index (as shown in box 2) due to the fact that the gain/loss retained by the ATSP for the current year is an actual gain/loss, so converting this value into €₂₀₀₉ has to be done using the actual inflation rate.
- The features of traffic risk sharing mechanism: if actual traffic is ±2% compared to the PP, the gain/loss in revenues is borne entirely by the ATSP; between 2% and 10% (higher or lower) than the PP it is shared between the ATSP (30%) and airspace users (70%); and if the difference between actual and planned traffic exceeds ±10%, the gain/loss relating to traffic beyond ±10% is entirely borne by the airspace users and has therefore no impact on the ATSP gain/loss from traffic risk sharing.

The amounts of financial incentives on capacity and environment targets (item 3 above) correspond to the amounts reported in the June 2017 Reporting Tables in respect of the performance achieved in 2016. These are expressed in €₂₀₀₉, using the 2016 actual inflation index and in % of revenues in the year. The revenues in the year are estimated by multiplying the ATSP component of the unit rate (item 5.9 in the Reporting Tables) with the actual number of TSUs in 2016, in line with the European Commission instructions.

The net gain/loss referred to in box 9 considers the total determined and actual ATSP costs and treats them as “genuine costs” although a fraction of the cost of capital corresponds to the ATSP return on equity and is a source of profit. Therefore, and as was the case in RP1 monitoring reports, the ATSP analysis is completed using the notion of estimated surplus, which is documented in box 10.

10. Focus on ATSP: En-route (or terminal) ATSP estimated surplus

Box 10 uses the notion of overall estimated surplus, and provides continuity with the analyses developed in RP1. It is important to emphasise that this analysis focuses on the ATSP results entitled to the ANS activity in the year. It is therefore different from the net accounting profit disclosed in ATSPs financial statements. Indeed, the latter include revenues from other activities (e.g. consultancy services) which are not financed through user charges, as well as revenues and costs pertaining to other years of activity.

The overall estimated surplus combines two elements:

- the main ATSP net gain/loss on ANS activities (see box 9); and
- the estimated actual surplus embedded in the cost of capital.

The estimated actual surplus embedded in the cost of capital corresponds to the return on equity, which is a source of profit. For an ATSP which is 100% financed through debt, the estimated surplus embedded in the cost of capital will be null, while for an ATSP which 100% financed through equity, the entire cost of capital will be considered as the estimated surplus.

Box 10 is structured in two parts. A first table shows how the estimated surplus embedded in the determined cost of capital is calculated, and a second table shows how the estimated surplus embedded in the actual cost of capital is calculated. In both tables, additional indicators are calculated: the estimated surplus in percent of en-route revenues and the estimated ex-ante (determined) or ex-post (actual) return on equity (in %).

The estimated surplus, when expressed in % of the revenues, can be associated to a “profit margin” generated by the ATSP with respect to the activity of the year, but it is not comparable to the profit margin that would be calculated straight from ATSPs financial statements.

The elements taken into account to calculate the estimated surplus embedded in the determined and the actual cost of capital are:

- a. The total asset base, as reported in the PP and the June 2017 Reporting Tables.
- b. The estimated proportion of financing through equity (in %), which is calculated based on information reported by ATSPs in the PP and the June 2017 Reporting Tables, with $b = (f / a - g) / (i - g)$.

- c. The estimated proportion of financing through equity (in value), with $c = a \times b$.
- d. The estimated proportion of financing through debt (in %), with $d = 1 - b$.
- e. The estimated proportion of financing through debt (in value), with $e = a \times d$.
- f. The cost of capital pre-tax (in value), as reported in the PP and in the June 2017 Reporting Tables.
- g. The average interest on debt (%), as reported in the PP and in the June 2017 Reporting Tables.
- h. The interest on debt (in value), with $h = e \times g$.
- i. The determined RoE (pre-tax) in %, as reported in the PP and in the June 2017 Reporting Tables (with the actual RoE % expected to match the determined RoE % from the PP).

The actual estimated surplus embedded in the cost of capital is then calculated as the determined RoE (pre-tax) rate multiplied by equity. Referring to the items listed above it is equal to $c \times i$.

11. Focus on ATSP: Summary of ATSP gain/loss on en-route (or terminal) activity and estimated surplus

Box 11 provides:

- On the left-hand side, a graphical summary of the ATSP net gain/loss for the year 2016 arising from variations in costs, traffic, and bonus/penalty from incentives (see box 9).
- On the right-hand side, a bar chart comparing the planned and actual overall estimated surplus, both in value (€2009) and in % of the en-route revenue (see box 10).

The notion of revenue used in box 10, 11 and 12 corresponds to the revenue arising from the activity in the year, and is different from that used when expressing the bonus/penalty from incentives (box 9) where the ATSP component of the unit rate (therefore including adjustments from previous years carry-over to 2016) is used.

12. Focus on en-route (or terminal) ATSP: General conclusions

Box 12 contains comments on the ATSP cost-efficiency performance for the year 2016. The determined and actual costs for the main ATSP include ATM, Communication, Navigation, Surveillance and MET services, if applicable. The comments mainly focus on:

- The deviation between actual and determined costs, looking at the difference per cost category (staff, other operating costs, depreciation, cost of capital and exceptional items) and using the explanations provided in the NSA Monitoring Report and in the Additional Information to the Reporting Tables).
- The presence and nature of costs exempted from cost-sharing for the ATSP.
- The financial effect of the Traffic Risk Sharing on the ATSP.
- The financial effect of incentives (bonus/penalty) on the ATSP.
- The situation in relation to the asset base and the financing structure.
- The net ATSP gain/loss for the en-route (or terminal) activities.
- The ATSP overall estimated surplus (i.e. including the surplus embedded in the cost of capital).

2.3 Gate-to-gate ANS analysis and technical notes

1. Monitoring of gate-to-gate ANS costs
Box 1 presents an aggregation of en-route and terminal costs (in € ₂₀₀₉) as well as the share of en-route costs in total gate-to-gate costs. It also shows the difference between actual and planned data measured at gate-to-gate level (in € ₂₀₀₉ and in %).
2. Share of en-route and terminal in gate-to-gate actual costs (2016)
The right-hand side of box 2 shows a graphical presentation of the planned and actual split of gate-to-gate costs between en-route and terminal. It helps identify possible changes in cost-allocation methodology. Comments and conclusions are provided on the left-hand side of box 2.
Technical notes on en-route and terminal information provided by the State
These notes, if any, explain specific issues affecting the analysis and possibly requiring additional information from the States to be gathered during the “fact validation”.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

BALTIC FAB

Version: 1.1

Date: 9 October 2017

BALTIC FAB

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	B			
	ANSPs	For Safety Culture MO	A	A			
	ANSPs	For all other MOs	A	A			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		N/A	40%			
	Runway Incursions (RIs)		N/A	41%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	9%			
	Runway Incursions (RIs)		100%	0%			
	ATM Specific Occurences (ATM-S)		100%	33%			

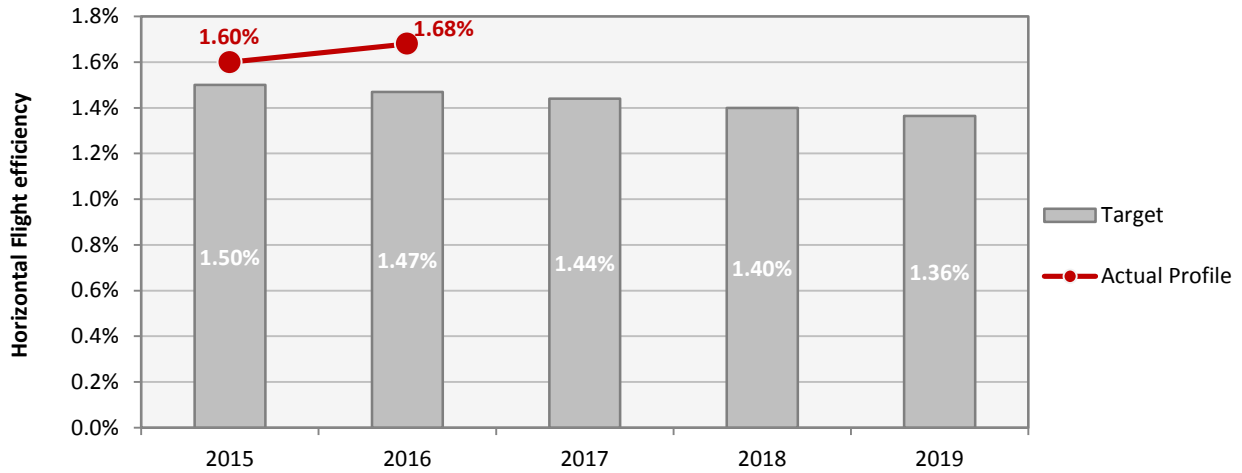
Observations

The lowest level in each EoSM-State Component/area of the States is Level "B" which is below the 2019 EoSM target level. Safety Policy and Objectives, and Safety Assurance are already at the 2019 EoSM target level.

BALTIC FAB

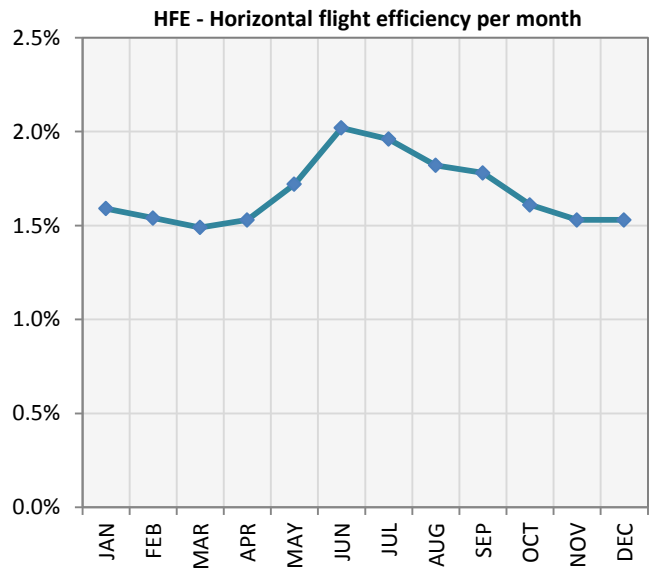
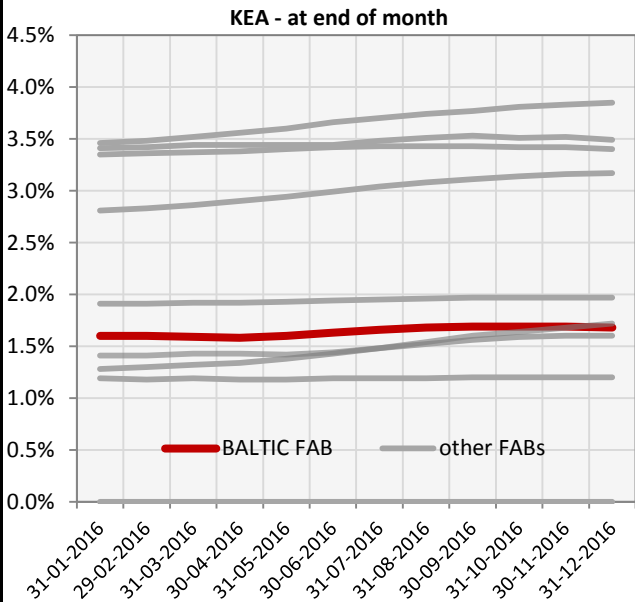
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	1.50%	1.47%	1.44%	1.40%	1.36%
Actual performance	1.60%	1.68%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	1.60%	1.60%	1.59%	1.58%	1.60%	1.63%	1.66%	1.68%	1.69%	1.69%	1.69%	1.68%
HFE	1.59%	1.54%	1.49%	1.53%	1.72%	2.02%	1.96%	1.82%	1.78%	1.61%	1.53%	1.53%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

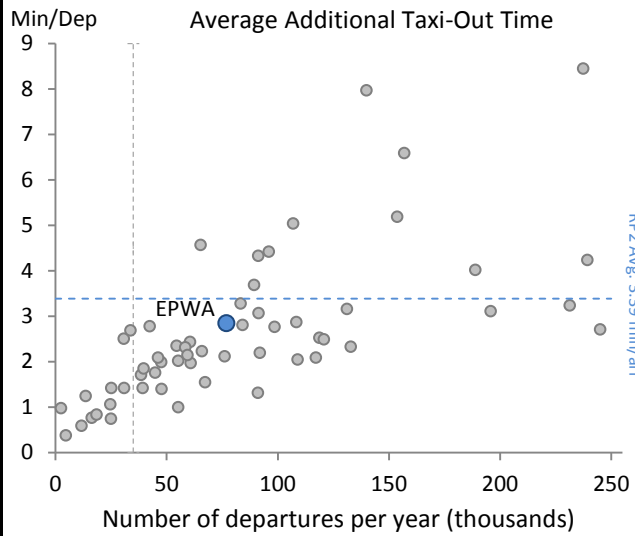
Observations

NM proposed measures: Initiate cross-border projects with neighbouring FABs.

1. Overview

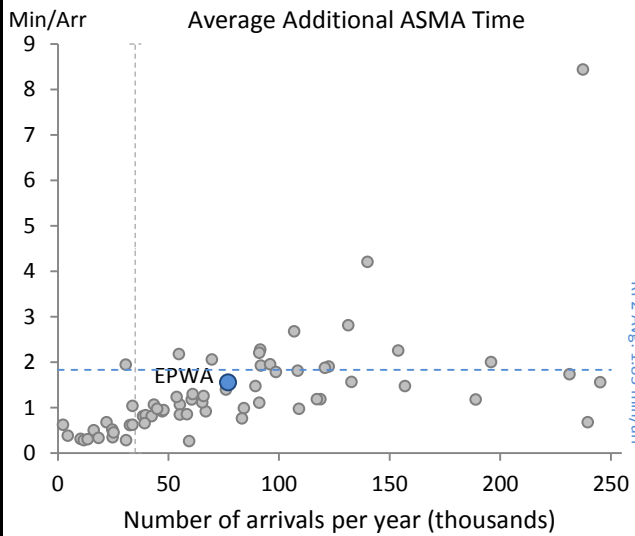
Only one airport in the Baltic FAB has established the Airport Operator Data Flow (APDF), required for the calculation of the environmental performance indicators. The FAB evaluation is therefore done on the basis of this only airport. Member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues.

2. Additional Taxi-Out Time



PRB notes that the additional TXOT in the Baltic FAB is slightly below the European average (RP2 available airports), contributing consistently to the European performance.

3. Additional ASMA Time



The additional ASMA time for the only airport in Baltic FAB with available data shows, like the additional TXOT, slightly better performance than the average of measured airports in RP2. This performance follows the general trend according to the level of traffic.

BALTIC FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.21	0.21	0.21	0.22	0.22	
FAB Target	0.21	0.21	0.21	0.22	0.22	
Actual performance	0.16	0.35				
BALTIC FAB assessment of capacity performance						
<p>Last two years showed significant changes in the structure and air traffic density with reference to assumptions for RP2. In 2016 air traffic in Poland, expressed in IFR flights, has grown by 7,9% while STATFOR baseline scenario forecast foreseen 3,7% increase. The dynamic of air traffic growth has been driven by factors, which have not been typically considered during capacity planning process: 1) significant increase of small aircrafts traffic in Polish airspace - mainly from Russian Federation (outside of NM responsibility), bypassing Ukrainian airspace, 2) traffic flow in west part of Polish airspace caused by low level en-route unit rate in Poland in comparison to German's UR, 3) special events in summer period - NATO summit and World Youth Days. PANSAs has undertaken measures aiming to mitigate ATFM delays (e.g. overtime of ATCOs, movement of ATCO's holidays outside of peak periods). The target for Baltic FAB (0,21 min ATFM delay per flight) and for PANSAs (0,23 min. ATFM delay per flight) have not been met in 2016. Hence, the incentive scheme will be applied. PANSAs has exceeded level of 0,3 min ATFM delay per flight, which means that penalty of 0,025 en-route revenues will be adjusted accordingly.</p> <p>Lithuania did not generate delays (0.0 actual value) and contributed to the FAB target achievement.</p>						
Monitoring process for capacity performance						
<p>The monitoring process has been and is conducted continuously on the basis of data derived from Pan-European ANS Performance data repository (http://ansperformance.eu/data/) and information provided by PANSAs. Monitoring was performed on the national and FAB levels (by the Baltic FAB Strategic, Economic and Performance Committee).</p>						
Application of Corrective Measures for Capacity						
<p>The BALTIC FAB monitoring report states that "Corrective measures will be provided and applied after publication of PRB Annual Monitoring Report." It does not contain any reference to specific corrective measures that have already been put in place.</p>						
Capacity Planning						
<p>Capacity planning process is based on the cycle agreed by Network Manager and local ANSPs (including yearly meeting by representatives of NM with local ANSPs when capacity plan for local ACC is updated.</p>						
Assessment of capacity performance						
<p>BALTIC FAB did not achieve the required level of capacity performance to be consistent with the union-wide target (FAB reference value) in 2016. Although, one of the Member States, Lithuania, experienced zero en-route delay, the other Member State, Poland witnessed a significant drop in en route capacity performance, from 0.18 minutes delay per flight in 2015 to 0.39 minutes per flight in 2016. Since Poland has traffic levels substantially greater than Lithuania, the Polish performance heavily influences the overall FAB result.</p> <p>Reasons for the deterioration in capacity performance, in Poland, are attributed to various factors, including, higher than expected traffic increase (planning on baseline traffic growth); lack of ATC staff; inability to deploy capacity to meet traffic demand; special events (NATO summit, World Youth Days). Military exercises are reported as having an impact on capacity and being 'out of ANSP control' despite the reported improvements in the application of FUA within the FAB and the improvements listed in how coordination and cooperation with the military can provide benefits to GAT operations – the Military dimension of the plan.</p> <p>It is noted that the Network Manager highlights, in the Network Operations Plan 2017 – 2021, that the latest capacity plans for Poland are insufficient to meet the required capacity performance for the remainder of RP2 and that this will create capacity problems for airspace users in both Baltic FAB and the Network.</p>						

En route Capacity Incentive Scheme
<p>BALTIC FAB does not apply a FAB-wide incentive scheme but apply local / national schemes instead. These schemes are presented in the relevant national performance report.</p>
Result of FAB Capacity Incentive Scheme
<p>Not applicable</p>
Update on Military dimension of the plan
<p>PANSA implemented civil-military ASM coordination tool CAT 2.0 functionalities to support allocation of airspace for military users based on analysis of GAT's flows and availability of ACC sectors. 10 February 2016 PANSA and Oro Navigacija signed the letter of agreement concerning exchange of military area activation data by using CAT 1.0 system.</p> <p>On 14 June 2016 amended Letter of Agreement among NATO and ESTONIA, LATVIA and LITHUANIA on airspace management arrangements in support to the NATO air policing mission and other air activities in the Baltic States.</p> <p>On 24 September 2016 amended LoA among SE "Oro navigacija" and Lithuanian Army on airspace management arrangement, operational cooperation ensuring efficient airspace surveillance, control, defence and flight safety.</p>
Observations on Military dimension of the plan
<p>The implementation of an ASM tool which supports the allocation of restricted airspace in consideration of the requirements of GAT users is welcomed. This is particularly relevant since BALTIC FAB reports that one of the main reasons for not meeting the en route capacity targets was military exercises. Improvements in capacity performance are to be expected due to improvements in the allocation of restricted airspace for military exercises.</p>
Application of FUA
<p>FUA concept has been fully implemented in FIR Warsaw. In 2016 letter of agreement was signed between PANSA and Oro Navigacija. This document refers to cooperation in airspace management on pretactical and tactical levels. The parties share the information on activation of airspace structures. It enables ATCOs to provide the most optimised trajectories for GAT. The FUA principles are applied as well with other neighbouring countries. The restrictions in airspace are introduced only when necessary to limit negative impact on airspace capacity and flow of traffic.</p> <p>In order to harmonize the FUA procedures in the Baltic FAB, a detailed assessment of current FUA procedures is completed. There were two ASM co-ordination meetings between AMC Lithuania and AMC Poland: 2016.02.11 in Warszawa and 2016.05.24 in Vilnius. During close co-operation in between them, involving also operational and technical staff, ASM organisational structure, civil-military co-operation, AMC manageable areas, ASM practices and support systems were reviewed. Pre-tactical and tactical airspace management coordination within the Baltic FAB was activated with the aim to identify solutions for efficient use of the airspace within the entire FAB area of application.</p> <p>Allowing to achieve the maximum benefits from more accurate ASM information sharing, the ASM LoA was signed and became effective since 2016.05.26. According to LoA, responsibility of pre-tactical and tactical coordination regarding SUA in the airspace of common interest used for military/other airspace users activities rests on Lithuanian side with AMC Lithuania/ACC Vilnius Supervisor, and on Polish side with AMC Poland.</p> <p>Airspace of common interest is defined as: FIR/UIR Vilnius – EY-D12, EY-TSA 6 and temporarily established segregated areas above FL95 south of N5500 and west of E2400; FIR Warszawa - temporarily established segregated areas above FL95 north of N5330 and east of E2200.</p> <p>To ensure prompt reaction to any airspace requirements, activating/deactivating or reallocating specific pretactical/tactical ASM scenarios and, at the same time, establishing and activating the most appropriate airspace configurations, the common ASM support system is planned to be used in the nearest future.</p> <p>Also it should be noted that possibility to create joint Baltic FAB AMC was under evaluation during 2016. Final decision is under consideration at the moment.</p>

Observations of the Application of FUA

The efforts in applying the Flexible Use of Airspace within Baltic FAB are welcomed. As previously referenced, fewer capacity constraints on GAT would be expected, as pre-tactical coordination and cooperation between airspace managers, both civil and military, improves. It would be appreciated to see information on how the BALTIC FAB determines whether or not the optimum benefit has been provided to both civil and military airspace users.

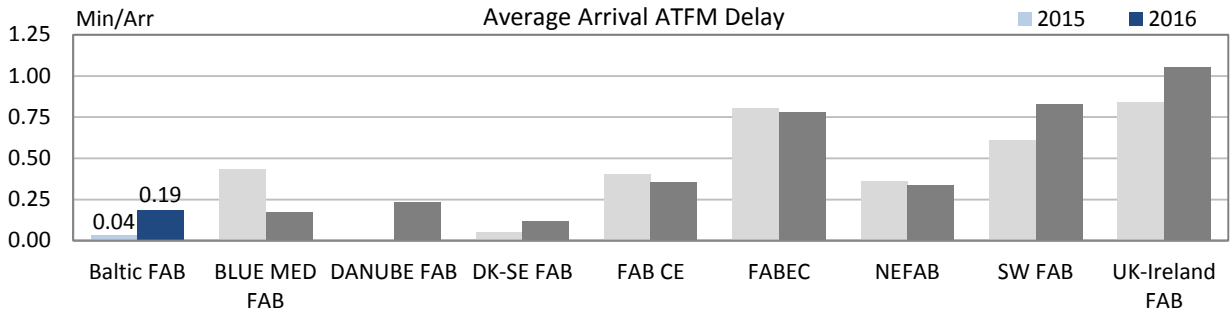
BALTIC FAB

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Baltic FAB contributes adequately to the airport-related ANS Capacity performance in Europe showing reasonably low share of arrival ATFM delay of 0.19 min/arr. in 2016. In comparison to 2015, however, the observed performance is lower by a factor of almost 5. The main driver for this change is the relatively high share of arrival ATFM delay accrued at Warszawa/Chopin (EPWA) where a higher share of delay due to local runway maintenance, but also ATC related reasons has been observed in 2016.

2. Arrival ATFM Delay



In 2016, Baltic FAB, next to BLUE MED FAB and DK-SE FAB, range in the group of best in class in terms of arrival ATFM delay on a European level.

In comparison to 2015, however, the observed performance is lower by a factor of almost 5 (2015: 0.04 min/arr. vs 2016: 0.19 min/arr.). The main driver for this change is the significant deterioration of arrival ATFM delay at Warszawa/Chopina (EPWA).

3. Arrival ATFM Delay – National Targets and Incentive Schemes

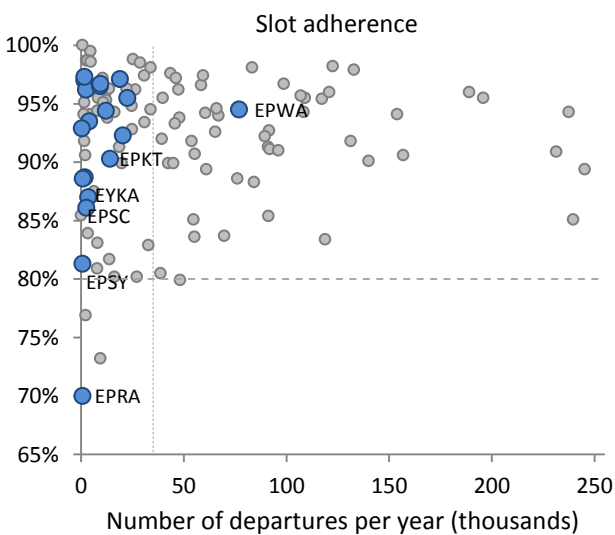
Both Poland and Lithuania have established national targets adequate to historical performance.

The service provider in Lithuania is entitled for a bonus based on the performance achieved at the international airports (EYVI, EYKA, EYPA, and EYSA).

Poland has also specified local targets per airport or airport group in their Performance Plan with associated thresholds for penalties.

Penalties will be applied for the air traffic services provided at EPWA and EPKK. No bonus will be granted for the airport group of EPGD, EPKT, EPWR, EPPO and EPKT, as the national target has not been met.

4. ATFM Slot Adherence



Adherence to ATFM slots across Baltic FAB ranges well above 85% for services at the majority of airports. EPSY ranges just above 80% which can be understood as the lower level performance threshold across Europe. Slot adherence at EPRA - despite the low level of traffic - reflects a low performance and negatively impacts the predictability on a network level.

5. Pre-departure Delay

The monitoring of pre-departure delay is subject to the implementation of the Airport Operator Data Flow. With the exemption of Warszawa/ Chopina (EPWA) the data flow is not established for airports in Baltic FAB. Accordingly, the indicator cannot be sufficiently monitored.

Lithuania and Poland are encouraged to strengthen the effort to establish the Airport Operator Data Flow across the national airports.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Lithuania

Version: 1.1

Date: 9 October 2017

LITHUANIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	48	C	C	C	B	B
ORO NAVIGACIJA	82	D	D	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	N/A
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	ORO NAVIGACIJA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	5	4
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	13	5
ORO NAVIGACIJA	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	3	0
Occurrence reporting and Investigation	8	0
TOTAL	22	2

Observations

One out of the four reviewed EoS Components/areas of the State is below the 2019 EoS target level (Safety Culture excluded). After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 2 are below Level C.

LITHUANIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

At the time being the monitoring of operational ANS performance at airports in Lithuania does not cover any of the environment indicators.
 The Airport Operator Data Flow is not established for any of the four Lithuanian airports subject to RP2. Although it was anticipated that the data flow would be established for Vilnius airport during the course of 2016, the data is still not being provided.

2. Additional Taxi-Out Time

The additional taxi-out time indicator cannot be monitored at Lithuanian airports at the time being.

3. Additional ASMA Time

The additional time in the terminal airspace indicator cannot be monitored at Lithuanian airports at the time being.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Kaunas	EYKA	n/a	n/a				n/a	n/a			
Palanga	EYPA	n/a	n/a				n/a	n/a			
Šiauliai	EYSA	n/a	n/a				n/a	n/a			
Vilnius	EYVI	n/a	n/a				n/a	n/a			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.01	0.02	0.03	0.04	0.04	
Deadband +/-	0.0 < x ≤ 0.1	0.00	0.00	0.00	0.00	
Actual performance	0.00	0.00				

National capacity incentive scheme

As the operational performance at FAB level in Capacity KPA was lower [worse] than the target set for 2016 by 0.14 min / flight delay, Oro Navigacija will not be subject to the bonus despite excellent performance at the national level (no en route ATFM delays generated in Vilnius FIR in 2016).

Compliance issues relating to national capacity incentive scheme

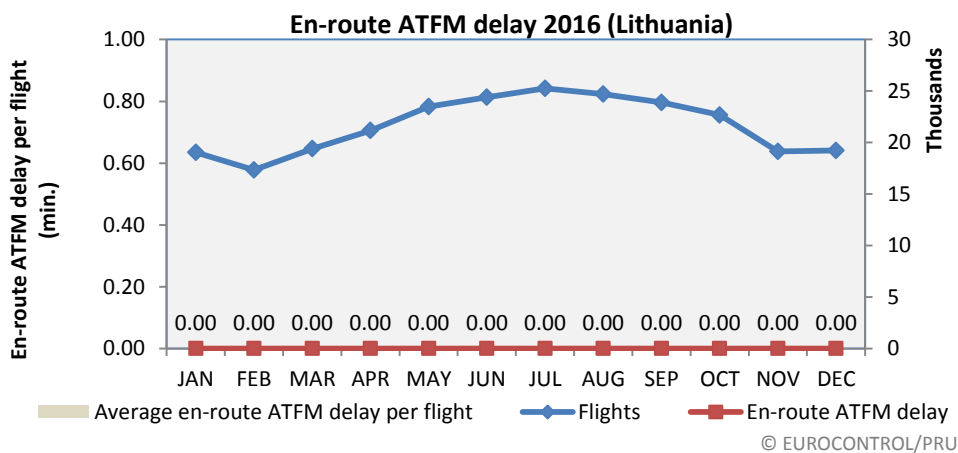
The PRB had previously noted several compliance issues relating to the en route capacity incentive schemes proposed by BALTIC FAB, in the assessment of the RP2 FAB Performance Plans - Baltic FAB. For Lithuania's national en route capacity scheme the following issues were highlighted:

1. The FAB performance was not considered;
2. When aggregated, the Polish national targets and the Lithuanian national targets are not consistent with the FAB targets. (Subsequently resolved in the corrigendum dated November 2014)

The Annual Monitoring Report for BALTIC FAB indicates that the overall FAB performance is now a criterion for determining whether or not a bonus / malus should be paid.

Therefore, despite Lithuania achieving an en route capacity performance level that would result in a bonus, no bonus will be paid due to the overall BALTIC FAB target for en route capacity not being achieved.

Observations regarding national capacity performance



En-route ATFM delay per flight (Lithuania)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The ANSP in Lithuania, Oro Navigacija, has once again provided zero en route ATFM delay in 2016, making 9 consecutive years of zero delay.

Planning and Effective Use of CDRs

Such data is not available at national level.

Observations on Planning and Effective Use of CDRs

It is noted that Lithuania, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations become more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 92%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

LITHUANIA

Monitoring of Airports Contribution to CAPACITY for 2016

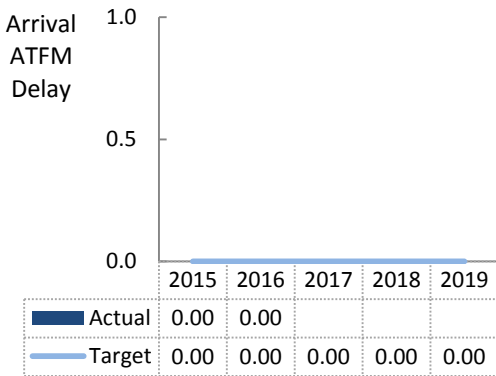
1. Overview

In Lithuania, air navigation services at a total of 4 airports are subject to RP2. Lithuania has established a national target on arrival ATFM delay that is commensurate with the level of traffic experienced. In particular no capacity constraints or congestion are observed.

Lithuania contributes adequately to the Baltic FAB and European performance.

The monitoring of the pre-departure delay indicator requires the establishment of the Airport Operator Data Flow. None of the Lithuanian airports have established this data flow. It is expected that Vilnius (EYVI) will implement the data flow during the course of the 2nd Reference Period. Lithuania is encouraged to consider the implementation of the data flow at other airports as well.

2. Arrival ATFM Delay



Lithuania has established a national target of 0 min/arr. on arrival ATFM delay.

Air navigation services at and around the Lithuanian airports have not accrued any ATFM delay in 2015 and 2016. The performance on the national level and the individual local level meets the target.

The actual performance is commensurate with the level of traffic observed in Lithuania.

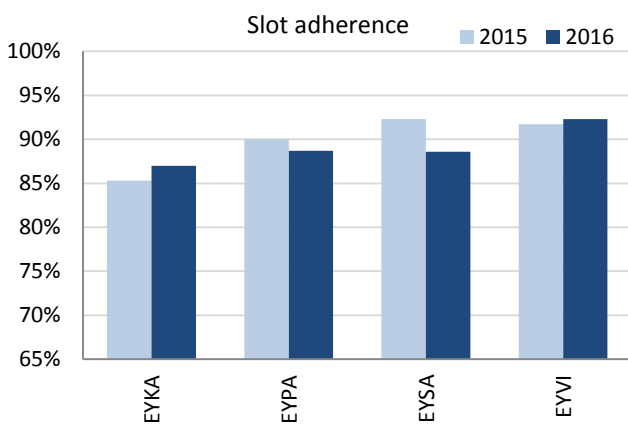
3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB performance plan refers to the fact that for all airports in Lithuania there is no risk of arrival ATFM delay identified or predicted for RP2. This is in line with the level of traffic observed.

Lithuania has established a national target on arrival ATFM delay of 0 min/arr. that is commensurate with the level of air traffic served.

Based on the achieved performance at the international airports in Lithuania, the national air traffic service provider is granted a bonus.

4. ATFM Slot Adherence



The slot adherence of Lithuania remained stable in 2016, and ranges between 87 and 92%. Slight improvements in slot adherence at Kaunas (EYKA) and Vilnius (EYVI) are offset by lower compliance rates at Palanga (EYPA) and Šiauliai (EYSA). In the case of Šiauliai (EYSA), the performance dropped by 4%.

Considering the level of traffic observed at Lithuanian airports, a higher level of compliance with ATFM slots seems attainable at all airports.

5. Pre-departure Delay

Given the level of traffic at Lithuanian airports no considerable share of pre-departure delay is expected nor reported by airspace users.

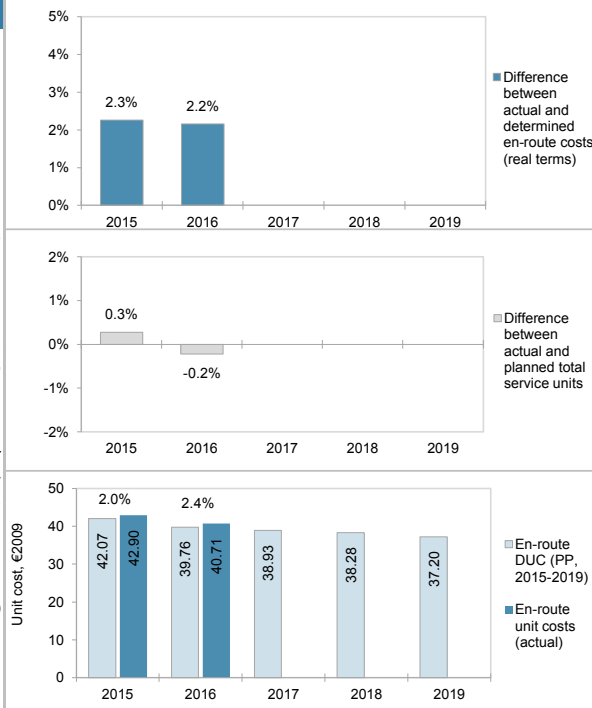
The monitoring of pre-departure delay requires the implementation of the Airport Operator Data Flow. As mentioned above, it is expected that Lithuania will establish the reporting (initially) for Vilnius. This will enable the monitoring of this performance indicator.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Kaunas	EYKA	0.00	0.00				85.3%	87.0%				n/a	n/a			
Palanga	EYPA	0.00	0.00				90.0%	88.7%				n/a	n/a			
Šiauliai	EYSA	0.00	0.00				92.3%	88.6%				n/a	n/a			
Vilnius	EYVI	0.00	0.00				91.7%	92.3%				n/a	n/a			

LITHUANIA: En-route charging zone

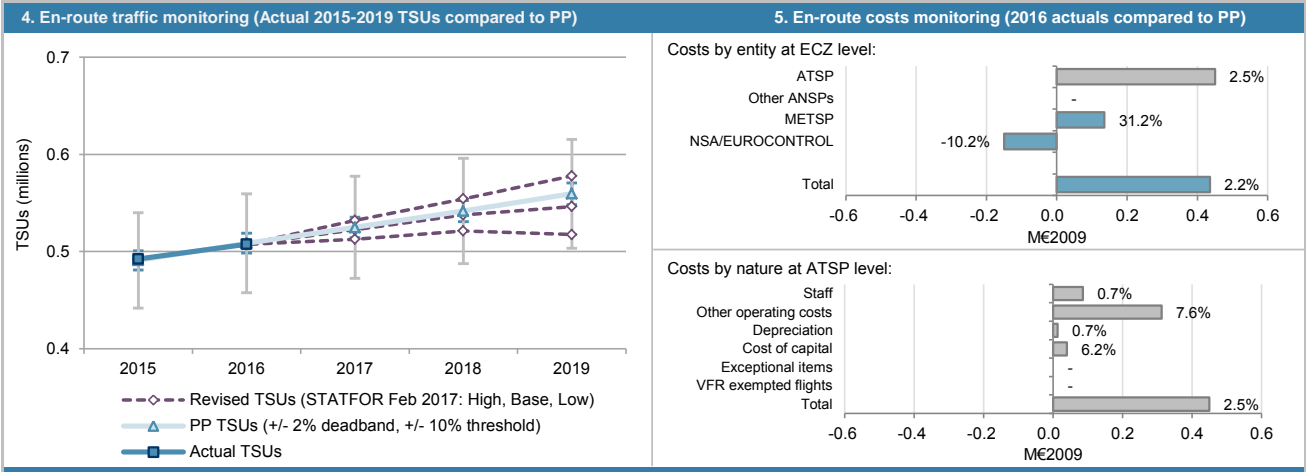
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Lithuania ECZ represents 0.3% of the SES en-route ANS determined costs in 2016 ATSP: Oro Navigacija FAB: Baltic FAB National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Lithuania: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		23 316 993	23 342 321	24 186 978	25 093 574	25 748 766
Inflation %		1.7%	2.2%	2.5%	2.2%	2.2%
Inflation index (100 in 2009)		112.9	115.4	118.4	121.0	123.7
Real en-route costs (EUR2009)		20 652 919	20 223 855	20 434 886	20 737 566	20 814 037
Total en-route Service Units		490 928	508 601	524 877	541 672	559 548
Real en-route unit cost per Service Unit (EUR2009)		42.07	39.76	38.93	38.28	37.20
Lithuania: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		23 121 075	22 775 398			
Inflation %		-0.7%	0.7%			
Inflation index (100 in 2009)		109.5	110.2			
Real en-route costs (EUR2009)		21 120 276	20 659 894			
Total en-route Service Units		492 283	507 472			
Real en-route unit cost per Service Unit (EUR2009)		42.90	40.71			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-195 918	-566 923			
	in %	-0.8%	-2.4%			
Inflation %	in p.p.	-2.4 p.p.	-1.5 p.p.			
Inflation index (100 in 2009)	in p.p.	-3.4 p.p.	-5.2 p.p.			
Real en-route costs (EUR2009)	in value	467 357	436 038			
	in %	2.3%	2.2%			
Total en-route Service Units	in value	1 355	-1 129			
	in %	0.3%	-0.2%			
Real en-route unit cost per Service Unit (EUR2009)	in value	0.83	0.95			
	in %	2.0%	2.4%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (40.71 €2009) is +2.4% higher than planned in the PP (39.76 €2009). This difference results from the combination of slightly lower than planned TSUs (-0.2%) and higher than planned en-route costs (+2.2%, or +0.4 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (-0.2%) falls inside the ±2% dead band foreseen in the traffic risk sharing mechanism. The resulting loss of en-route revenues (-0.04 M€2009) is therefore fully borne by the ATSP, Oro Navigacija.</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -2.4% lower than planned. However, since the actual inflation index is also lower than planned (-5.2 p.p.), actual en-route costs are +2.2% above the planned level when expressed in €2009.</p>						
<p>The higher than planned en-route costs, in real terms, are driven by higher costs for the ATSP, Oro Navigacija (+2.5% or +0.5 M€2009) and the MET Service Provider – LHMT (+31.2% or +0.1 M€2009). At the same time, the NSA/EUROCONTROL costs are lower than planned (-10.2% or -0.1 M€2009). Oro Navigacija being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.</p>						
<p>Costs exempt from cost-sharing are reported for a total amount of -0.2 M€2009 comprising EUROCONTROL costs (-0.2 M€2009) and new cost items required by law for LHMT (+0.01 M€2009). These costs will be eligible for carry-over (reducing costs charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						



LITHUANIA: En-route charging zone

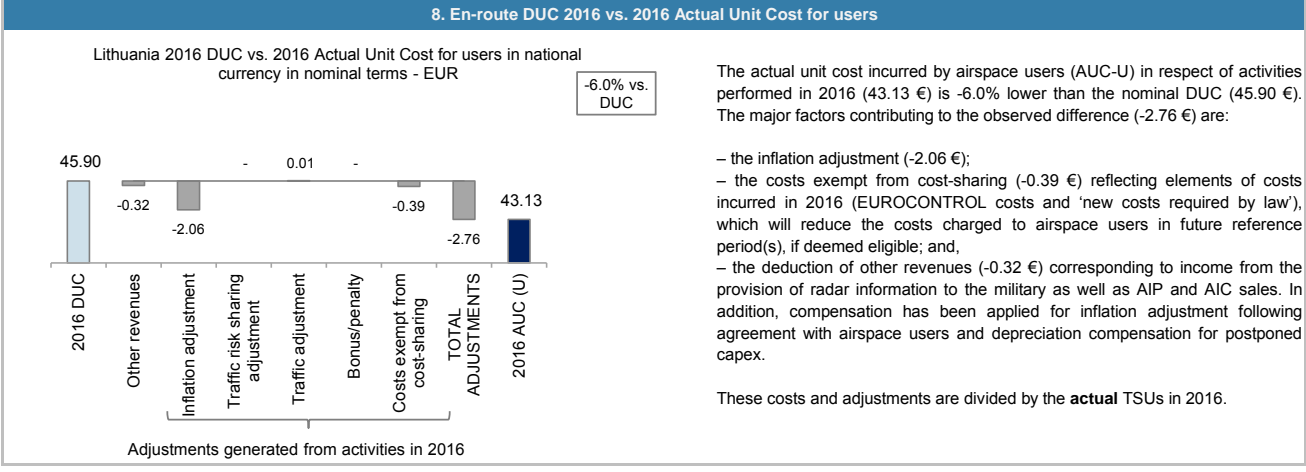
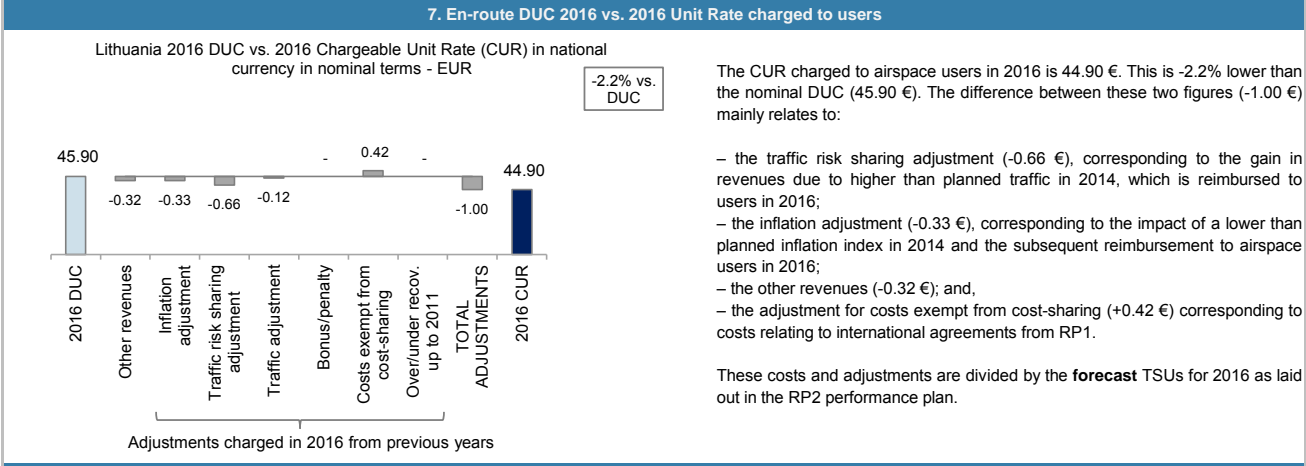
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	15			
	International agreements	54	-195			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	15			
	NSA/EUROCONTROL	54	-195			
Total costs exempt from cost sharing		54	-180			

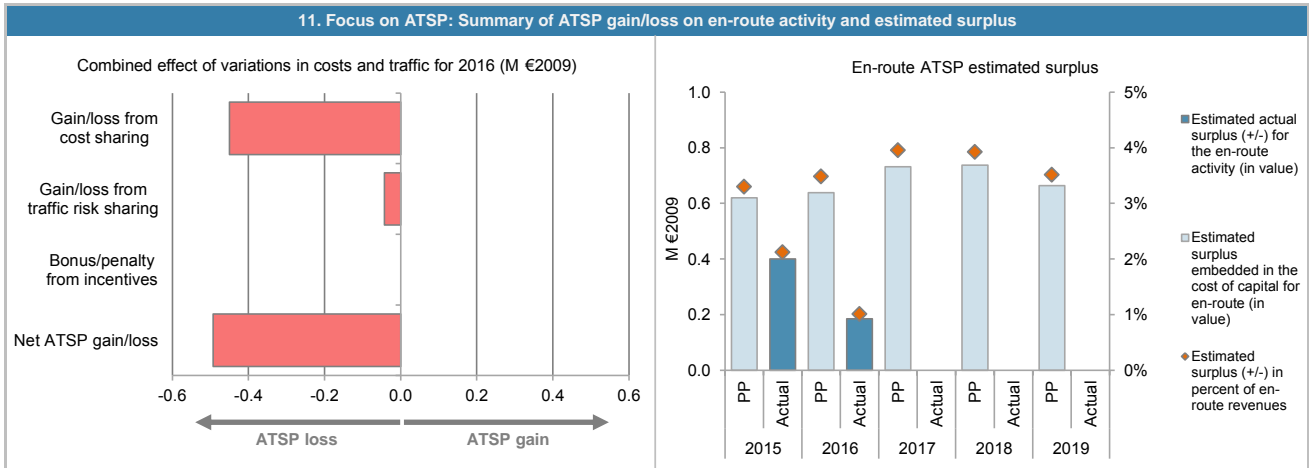
These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



LITHUANIA: En-route ATSP (Oro Navigacija)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	18 786	18 322			
Actual costs for the ATSP	19 066	18 772			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-280	-450			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-280	-450			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	0.3%	-0.2%			
Determined costs for the ATSP (PP) - based on actual inflation	19 374	19 183			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	53	-43			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-227	-493			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	20 679	21 294	24 384	24 592	22 124
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	20 679	21 294	24 384	24 592	22 124
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	620	639	732	738	664
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	3.0%	3.0%	3.0%	3.0%	3.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	620	639	732	738	664
Overall estimated surplus (+/-) for the en-route activity	620	639	732	738	664
Revenue/costs for the en-route activity	18 786	18 322	18 493	18 794	18 877
Estimated surplus (+/-) in percent of en-route revenues	3.3%	3.5%	4.0%	3.9%	3.5%
Estimated ex-ante RoE pre-tax rate (in %)	3.0%	3.0%	3.0%	3.0%	3.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	20 901	22 610			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	20 901	22 610			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	627	678			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	3.0%	3.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	627	678			
Net ATSP gain(+)/loss(-) on en-route activity	-227	-493			
Overall estimated surplus (+/-) for the en-route activity	401	185			
Revenue/costs for the en-route activity	18 839	18 280			
Estimated surplus (+/-) in percent of en-route revenues	2.1%	1.0%			
Estimated ex-post RoE pre-tax rate (in %)	1.9%	0.8%			



12. Focus on en-route ATSP: General conclusions

Actual 2016 Oro Navigacija en-route costs vs. PP

In 2016, Oro Navigacija actual en-route costs are +2.5% (+0.5 M€2009) higher, in real terms, than planned in the PP. Based on the Additional Information provided within the en-route Reporting Tables, the main drivers for this deviation are:

- Staff costs (+0.7% or +0.1 M€2009). However, as highlighted in box 3, the lower actual inflation index for the year 2016 is affecting the comparison of costs in real terms. When considering nominal terms, actual staff costs are -3.8% lower than planned, essentially due to a reallocation of some staff costs from en-route to terminal ANS.
- Higher other operating costs (+7.6% or +0.3 M€2009), mainly due to additional costs in relation with the construction of the road to the new ACC and administration building.
- Slightly higher depreciation costs (+0.7% or +0.01 M€2009).
- Higher cost of capital (+6.2% or +0.04 M€2009), mainly due to a reallocation of projects to the en-route assets base after their completion.

Oro Navigacija net gain/loss on en-route activity in 2016

As shown in box 9, the en-route activity generated a net loss of -0.5 M€2009 in 2016. This is a combination of the following elements:

- a loss of -0.5 M€2009 as a result of the cost-sharing mechanism;
- a loss of -0.04 M€2009 arising from the traffic risk-sharing mechanism.

In 2016, Oro Navigacija earned no bonus in respect of incentives as the capacity target was not met at FAB level. It is also noteworthy that Lithuania decided not to charge to airspace users the bonus earned in 2015.

Oro Navigacija overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-0.5 M€2009) and the surplus embedded in the actual cost of capital (+0.7 M€2009) amounts to +0.2 M€2009 (1.0% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 0.8%, which is lower than the 3.0% planned in the PP.

LITHUANIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
Lithuania TCZ represents 0.4% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		No	
ATSP:	Oro Navigacija	Airports with fewer than 70,000 IFRs ATMs:		4	
National currency:	EUR	Airports with between 70,000 and 225,000 IFRs ATMs:		0	
Number of airports in charging zone in 2016:	4,	of which:		Airports with more than 225,000 IFRs ATMs: 0	
2. Terminal DUC monitoring at Charging Zone level					
Lithuania: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	5 076 489	5 140 161	5 156 643	5 318 264	5 429 702
Inflation %	1.7%	2.2%	2.5%	2.2%	2.2%
Inflation index (100 in 2009)	112.9	115.4	118.4	121.0	123.7
Real terminal costs (EUR2009)	4 496 476	4 453 450	4 356 700	4 395 064	4 389 104
Total terminal Service Units	23 873	24 589	25 498	26 569	27 606
Real terminal unit cost per Service Unit (EUR2009)	188.35	181.12	170.86	165.42	158.99
Lithuania: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	5 075 325	5 185 040			
Inflation %	-0.7%	0.7%			
Inflation index (100 in 2009)	109.5	110.2			
Real terminal costs (EUR2009)	4 636 128	4 703 425			
Total terminal Service Units	25 346	27 269			
Real terminal unit cost per Service Unit (EUR2009)	182.91	172.48			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -1 164	44 879			
	in % -0.0%	0.9%			
Inflation %	in p.p. -2.4 p.p.	-1.5 p.p.			
Inflation index (100 in 2009)	in p.p. -3.4 p.p.	-5.2 p.p.			
Real terminal costs (EUR2009)	in value 139 651	249 975			
	in % 3.1%	5.6%			
Total terminal Service Units	in value 1 474	2 680			
	in % 6.2%	10.9%			
Real terminal unit cost per Service Unit (EUR2009)	in value -5.44	-8.64			
	in % -2.9%	-4.8%			
3. Focus on terminal at State/Charging Zone level					
There is only one TCZ in Lithuania comprising 4 airports: Vilnius, Kaunas, Palanga and Siauliai.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (172.48 €2009) is -4.8% lower than planned in the PP (181.12 €2009). This difference results from the combination of higher than planned TNSUs (+10.9%) and higher actual terminal costs (+5.6%, or +250.0 K€2009).					
Terminal service units					
Traffic risk sharing does not apply in the TCZ. The difference between actual and planned TNSUs (+10.9%) therefore generates additional revenues, which will be fully reimbursed to airspace users.					
Terminal costs					
In nominal terms, actual terminal costs are +0.9% higher than planned. However, since the actual inflation index is lower than planned (-5.2 p.p.), the actual terminal costs are +5.6% above the planned level when expressed in €2009.					
The deviation between actual and planned terminal costs in real terms reflects a combination of higher costs for the ATSP – Oro Navigacija (+5.3%), the MET Service Provider – LHMT (+31.0%) and lower costs for the NSA (-2.6%). Oro Navigacija being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.					
Costs exempt from cost-sharing are reported for a total amount of +2.3 K€2009 corresponding to 'new cost items required by law' for the MET Service Provider. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.					

Year	Difference (%)
2015	3.1%
2016	5.6%
2017	0%
2018	0%
2019	0%

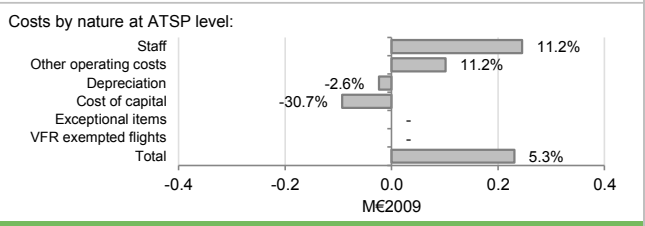
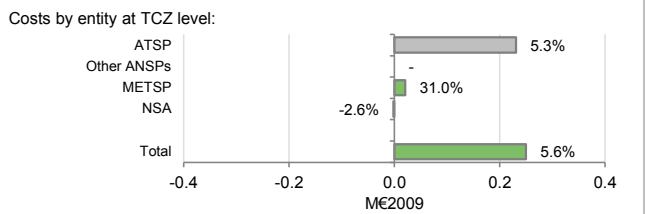
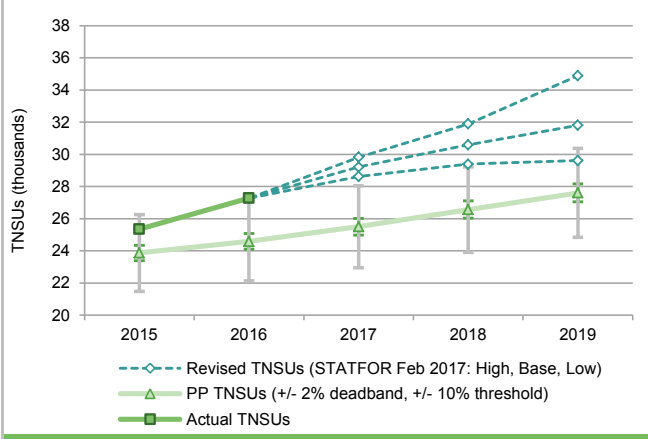
Year	Difference (%)
2015	6.2%
2016	10.9%
2017	0%
2018	0%
2019	0%

Year	Terminal DUC (PP, €2009)	Terminal unit costs (actual, €2009)	Difference (%)
2015	188.35	182.91	-2.9%
2016	181.12	172.48	-4.8%
2017	170.86	170.86	0%
2018	165.42	165.42	0%
2019	158.99	158.99	0%

LITHUANIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)



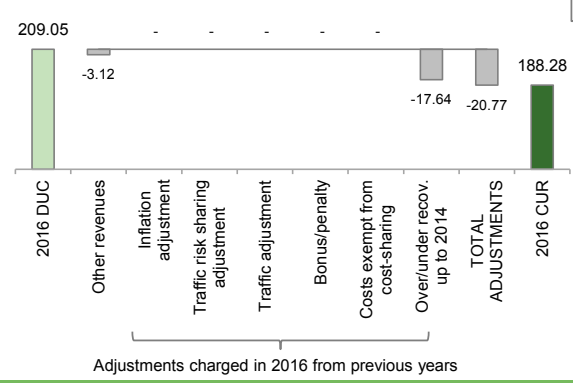
6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	2			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	2			
	NSA	0	0			
Total costs exempt from cost sharing		0	2			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Lithuania 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR



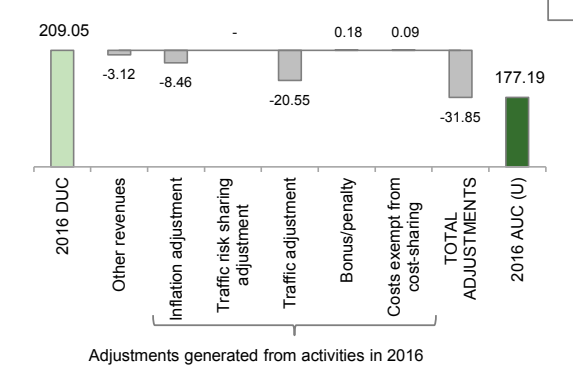
The CUR charged to airspace users in 2016 is 188.28 €. This is -9.9% lower than the nominal DUC (209.05 €).

The difference between these two figures (-20.77 €) relates to an over recovery from 2014 reflected in the 2016 unit rate (-17.64 €) and to other revenues (-3.12 €) corresponding to income from the provision of radar information to the military as well as AIP and AIC sales. In addition, compensation has been applied for inflation adjustment following agreement with airspace users and depreciation compensation for postponed capex.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the RP2 performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Lithuania 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (177.19 €) is -15.2% lower than the nominal DUC (209.05 €). The two most important factors contributing to the observed difference are the traffic adjustment (-20.55 €) and the inflation adjustment (-8.46 €). The traffic adjustment reflects the over recoveries arising from higher than planned traffic in 2016, which will be fully reimbursed to airspace users in 2018. The inflation adjustment reflects the impact of a lower than planned inflation index for 2016, which will also be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

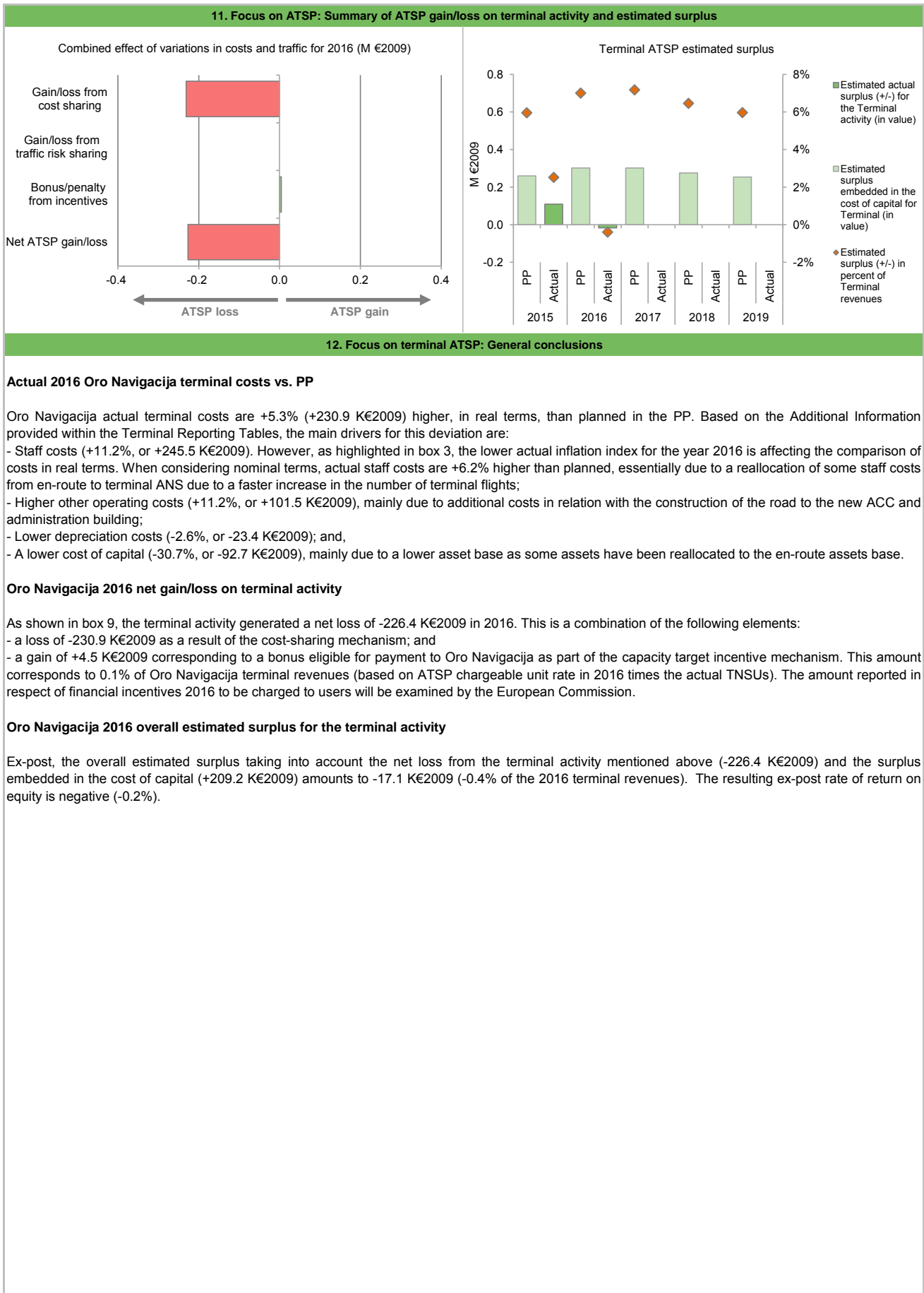
LITHUANIA: Terminal ATSP (Oro Navigacija)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	4 364	4 317			
Actual costs for the ATSP	4 484	4 548			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-119	-231			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-119	-231			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	5	4			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-115	-226			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	8 651	10 065	10 076	9 166	8 452
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	8 651	10 065	10 076	9 166	8 452
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	260	302	302	275	254
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	3.0%	3.0%	3.0%	3.0%	3.0%
Estimated surplus embedded in the cost of capital for terminal (in value)	260	302	302	275	254
Overall estimated surplus (+/-) for the terminal activity	260	302	302	275	254
Revenue/costs for the terminal activity	4 364	4 317	4 218	4 258	4 255
Estimated surplus (+/-) in percent of terminal revenues	5.9%	7.0%	7.2%	6.5%	6.0%
Estimated ex-ante RoE pre-tax rate (in %)	3.0%	3.0%	3.0%	3.0%	3.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	7 487	6 974			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	7 487	6 974			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	225	209			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	3.0%	3.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	225	209			
Net ATSP gain(+)/loss(-) on terminal activity	-115	-226			
Overall estimated surplus (+/-) for the terminal activity	110	-17			
Revenue/costs for the terminal activity	4 369	4 322			
Estimated surplus (+/-) in percent of terminal revenues	2.5%	-0.4%			
Estimated ex-post RoE pre-tax rate (in %)	1.5%	-0.2%			

LITHUANIA: Terminal ATSP (Oro Navigacija)

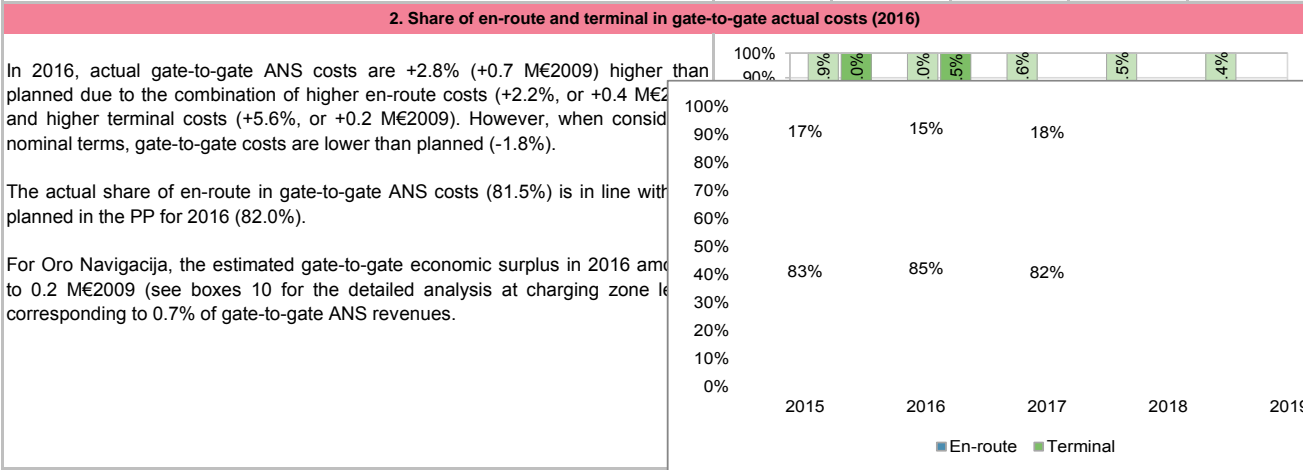
Monitoring of terminal COST-EFFICIENCY for 2016



LITHUANIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Lithuania: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	20 652 919	20 223 855	20 434 886	20 737 566	20 814 037
Real terminal costs (EUR2009)	4 496 476	4 453 450	4 356 700	4 395 064	4 389 104
Real gate-to-gate costs (EUR2009)	25 149 396	24 677 305	24 791 586	25 132 629	25 203 141
En-route share (%)	82.1%	82.0%	82.4%	82.5%	82.6%
Lithuania: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	21 120 276	20 659 894			
Real terminal costs (EUR2009)	4 636 128	4 703 425			
Real gate-to-gate costs (EUR2009)	25 756 404	25 363 319			
En-route share (%)	82.0%	81.5%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	607 008	686 013			
in %	2.4%	2.8%			
En-route share					
in p.p.	-0.1%	-0.5%			



3. Technical notes on en-route and terminal information reported by Lithuania

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Poland

Version: 1.1

Date: 9 October 2017

POLAND

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	54	C	B	C	C	B
PANSA	29	A	B	A	C	A

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	34%	0%
Runway Incursions (RIs)	41%	0%
ATM Specific Occurrences (ATM-S)		31%
Source of RAT data:	CAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	4	3
Occurrence reporting and Investigation	0	2
TOTAL	11	7
PANSA	Number of questions answered	
	YES	NO
Policy and its implementation	9	4
Legal/Judiciary	1	2
Occurrence reporting and Investigation	3	5
TOTAL	13	11

Observations

One out of the four reviewed EoSM Components/areas of the State is below the 2019 EoSM target level (Safety Culture excluded). In addition, after verification some answers above the Level "C" were downgraded either in order to correspond with EASA audit results to the end of 2015 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 1 is below Level C.

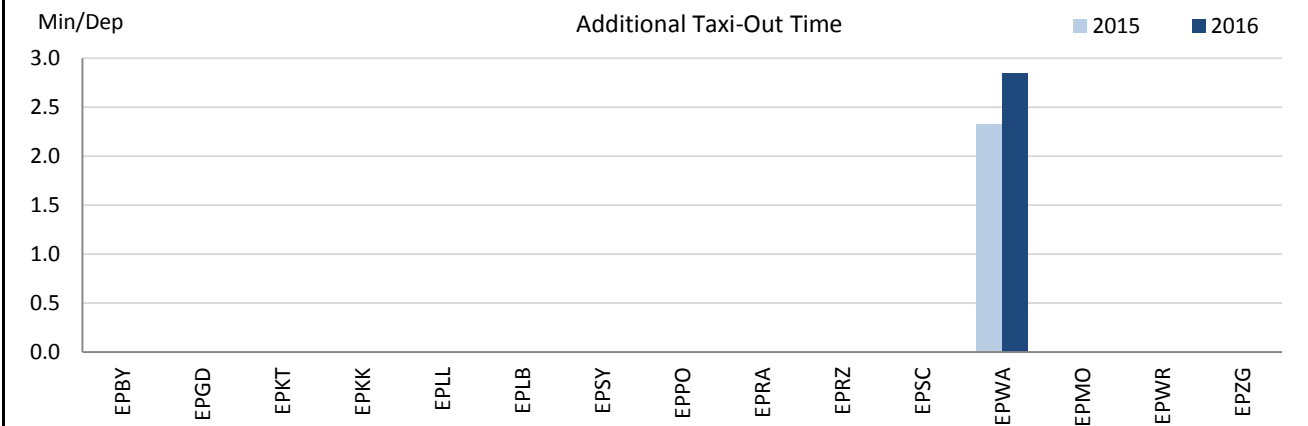
POLAND

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Poland as a member of the Baltic FAB identified fifteen airports as subject to RP2, with the last addition of EPSY in 2016 (due to inclusion in the charging zone). However, EPWA is the only airport for which the Airport Operator Data Flow is established. It is strongly recommended to establish the APDF for EPKK, EPGD, EPKT, EPWR, EPPO, EPMO and EPRZ. Implementation of the APDF at EPLL, EPSC, EPBY, EPLB, EPZG, EPSY and EPRA should be considered.

2. Additional Taxi-Out Time

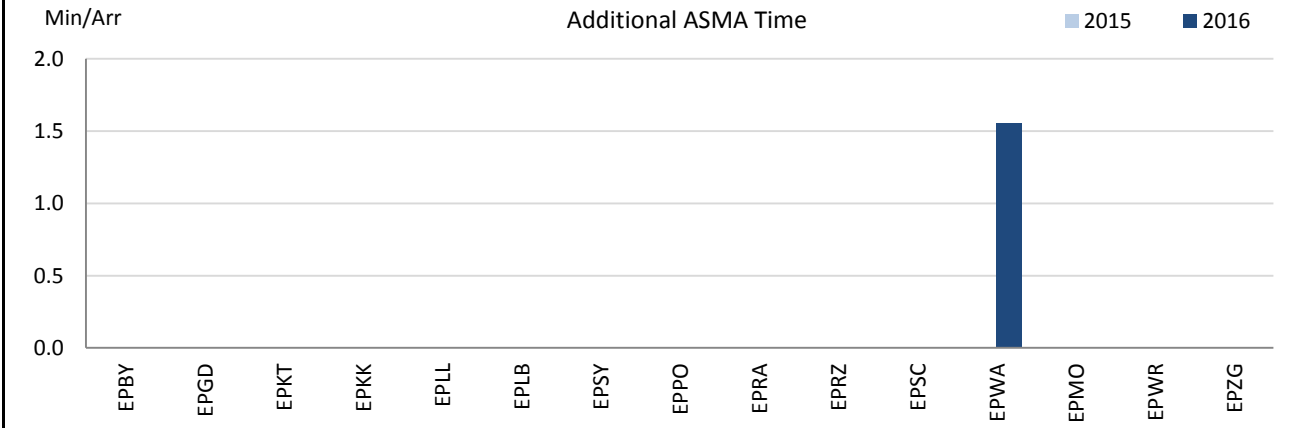


Warsaw shows an additional TXOT half a minute higher than in 2015. This increase happens parallel to the 10% increase in traffic in 2016.

The average additional taxi-out time in Warsaw for 2016 is 2.84 min/dep., half a minute below the European average (RP2 airports). This figure is commensurate with the level of traffic at EPWA and in line with the trend showed by the rest of European airports.

The additional TXOT at the rest of Polish airports cannot be monitored at the time being due to the lack of data.

3. Additional ASMA Time



The additional ASMA time at Warsaw in 2016 is 1.55 min/arr., slightly below the average of the airports in RP2.

No evolution with respect to 2015 can be analysed as last year the required CPR data was not available to calculate the time in the 40NM radius of the airport.

The additional time in the terminal airspace at the rest of Polish airports cannot be monitored at the time being due to the lack of data.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bydgoszcz	EPBY	n/a	n/a				n/a	n/a			
Gdansk	EPGD	n/a	n/a				n/a	n/a			
Katowice - Pyrzowice	EPKT	n/a	n/a				n/a	n/a			
Krakow - Balice	EPKK	n/a	n/a				n/a	n/a			
Lodz - Lublinek	EPLL	n/a	n/a				n/a	n/a			

Lublin	EPLB	n/a	n/a				n/a	n/a			
Olsztyn-Mazury	EPSY	n/a	n/a				n/a	n/a			
Poznan - Lawica	EPPO	n/a	n/a				n/a	n/a			
Radom	EPRA	n/a	n/a				n/a	n/a			
Rzeszow - Jasionka	EPRZ	n/a	n/a				n/a	n/a			
Szczecin - Goleniów	EPSC	n/a	n/a				n/a	n/a			
Warszawa/ Chopina	EPWA	2.32	2.84				n/a	1.55			
Warszawa/ Modlin	EPMO	n/a	n/a				n/a	n/a			
Wroclaw/ Strachowice	EPWR	n/a	n/a				n/a	n/a			
Zielona Gora - Babimost	EPZG	n/a	n/a				n/a	n/a			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.26	0.23	0.23	0.23	0.23	
Deadband +/-	0.15 - 0.4	0.15 - 0.3				
Actual performance	0.18	0.39				

National capacity incentive scheme

The actual en-route ATFM delay in FIR Warszawa was 0,39 min/flight. Polish incentive scheme for en-route ATFM delay 2016-2019 years provides three thresholds for penalties of ATFM delays and respective values of financial penalties. The value 0,39 min ATFM delay per flight means that threshold of 0,3 min ATFM delay per flight has been exceeded, hence penalty of 0,025% revenues of en-route services provided by PANSAs will have been imposed.

This figure equates to 151 824,68 PLN according to the BALTIC FAB monitoring report, compiled by the Polish Civil Aviation Authority.

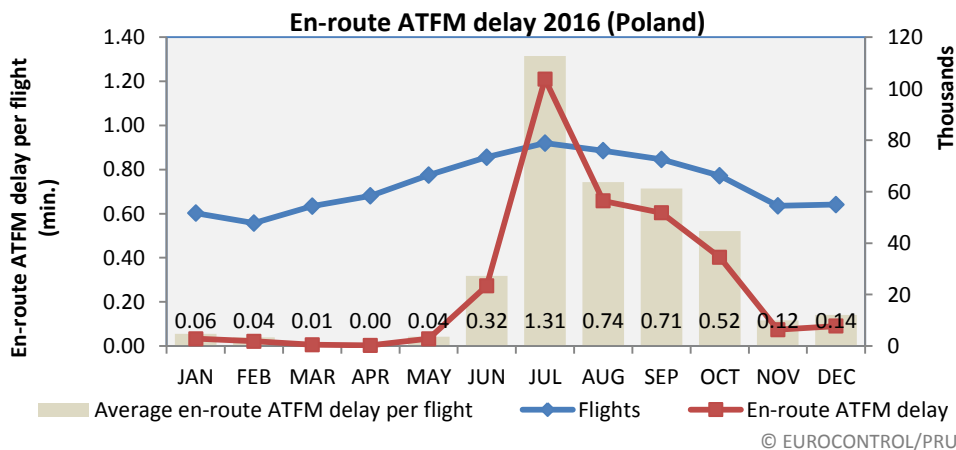
Compliance issues relating to national capacity incentive scheme

The PRB had previously noted several compliance issues relating to the en route capacity incentive schemes proposed by BALTIC FAB, in the assessment of the RP2 FAB Performance Plans - Baltic FAB. For Poland’s national en route capacity scheme the following issues were highlighted:

1. The FAB performance was not considered;
2. When aggregated, the Polish national targets and the Lithuanian national targets are not consistent with the FAB targets. (Subsequently resolved in the corrigendum dated November 2014)

The Annual Monitoring Report for BALTIC FAB indicates that the overall FAB performance is now a criterion for determining whether or not a bonus / malus should be paid, hence resolving the outstanding compliance issue.

Observations regarding national capacity performance



En-route ATFM delay per flight (Poland)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
2.00	1.63	1.13	0.66	0.52	0.51	0.79	0.18	0.39

There was a significant deterioration in en route capacity performance in Poland from 2015. Traffic levels increased by 7.2% on 2015 but delays more than doubled. Despite the increase in traffic, the main reason for delays, as determined by the ANSP when requesting the ATFM regulations, was staffing issues at more than 70% of the total delay. An absence / unavailability of ATC staff resulted in an inability to open the maximum number of sectors during sustained periods of high demand, or even at all. It is noted that the Network Manager, expects a capacity gap in Warsaw ACC if traffic continues to fly on current routes during the planning period.

Planning and Effective Use of CDRs
The data provided in the FAB monitoring report is inconsistent since the number of aircraft that could have planned using CDRs differs by more than ten thousand between the two PIs. Therefore the figures cannot be produced with any assurance of accuracy.
Observations on Planning and Effective Use of CDRs
It is noted that Poland, like many other States, is having difficulties in monitoring the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.
Effective booking procedures
The data provided in the FAB monitoring report is inconsistent, since almost four times as many hours were recorded as being used than were still allocated for use three hours before time of activation. Furthermore, Poland states that it does not allocate hours for segregation or restriction of airspace after issuance of the AUP.
Observations on Effective booking procedures
No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

POLAND

Monitoring of Airports Contribution to CAPACITY for 2016

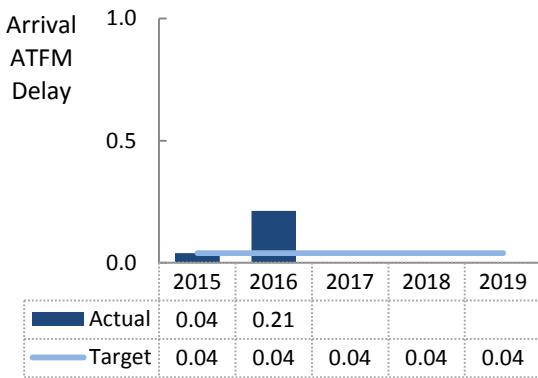
1. Overview

In the Baltic FAB performance plan, Poland has originally identified air navigation services at 14 airports as subject to RP2. With the monitoring of 2016, performance at Olsztyn-Mazury (EPSY) is additionally monitored. Poland has established a constant national target on arrival ATFM delay of 0,04 min/arr. for RP2. Though, no specific risk of occurrence of arrival ATFM delays during RP2 has been identified, the observed performance in 2016 has significantly deteriorated (2015: 0,04 min/arr. vs 2016: 0,21 min/arr.)

Poland contributes adequately to the Baltic FAB and European performance.

The monitoring of the pre-departure delay indicator requires the establishment of the Airport Operator Data Flow. At the time being the data flow is only established for Warszawa/ Chopina (EPWA). Poland is encouraged to consider the implementation of the data flow at other airports to improve the operational performance monitoring.

2. Arrival ATFM Delay



Poland has established a constant national target on arrival ATFM delay of 0.04 min/arr. for the whole reference period.

The observed performance in 2016 has substantially deteriorated. The national value of 0.21 min/arr. is primarily driven by the performance at Warszawa/Chopin (EPWA). As the major hub in Poland, arrival ATFM delays at EPWA increased significantly from 0.03 min/arr. in 2015 to 0.48 min/arr. in 2016 (c.f. appendix) due to runway maintenance work in June and August.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Poland has established a constant national target on arrival ATFM delay of 0.04 min/arr. for the whole reference period. This observed performance ranges at 0.21 min/arr. and signals that no to limited measures have been implemented to cater for the runway maintenance work related reduction in runway capacity at EPWA.

Another cause for arrival ATFM delay in 2016 were the weather regulations mainly in November and December.

Poland has established a financial incentive scheme for terminal ATFM delay with reference to the arrival ATFM performance at airport level. This comprises an individual scheme for EPWA and a separate scheme for the five bigger regional airports [i.e. EPGD, EPKT, EPWR, EPPD and EPKT] and EPKK. The other airports are not substantially contributing to arrival ATFM delay.

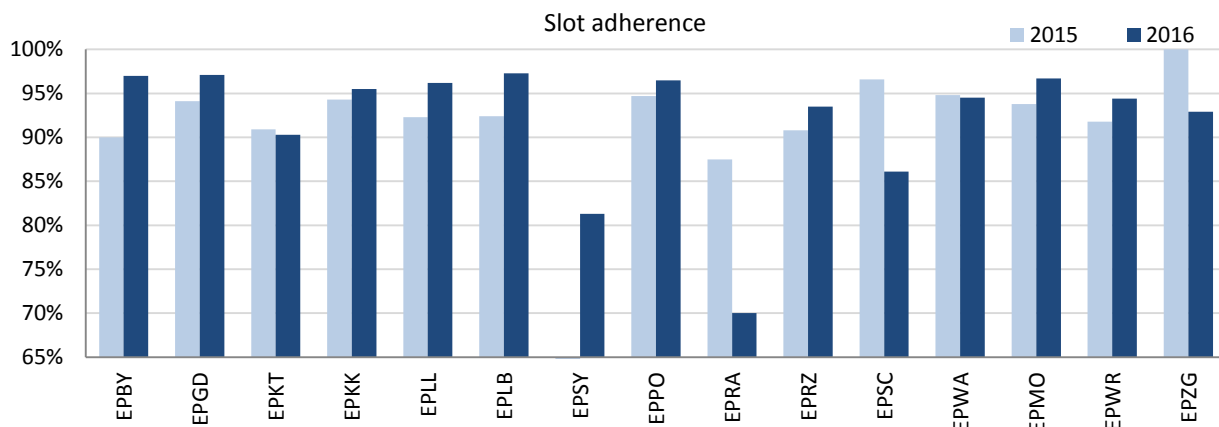
For the schemes the penalty threshold apply, i.e. at EPWA: 0.18 min/arr., and EPKK: 0.04 min/arr., resulting in penalties of 0,1% of the revenues.

For the group of regional airports (i.e. EPGD, EPKT, EPWR, EPPD and EPKT), the actual observed performance ranges at 0 min/arr. below the penalty threshold of 0.04 min/arr.

No bonus is applied for these other airports, as the overall national target on arrival ATFM delay was not met.

The remaining airports are not considered within the incentive scheme due to their limited impact on the European network.

4. ATFM Slot Adherence



In 2016, the compliance rate with ATFM slots at 7 airports ranges above 95%. These airports also show an increase in the observed performance in comparison to 2015. Notable exceptions are EPSY, EPRA, and EPSC which range significantly below 90%.

5. Pre-departure Delay

For the time being, only Warszawa/ Chopina (EPWA) has established the Airport Operator Data Flow required to monitor the pre-departure delay indicator. The observed performance in 2016 has significantly worsened by a factor of almost 2 (2015: 0.26 min/dep. vs 2016: 0.45 min/dep.).

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bydgoszcz	EPBY	0.00	0.00				90.0%	97.0%				n/a	n/a			
Gdansk	EPGD	0.00	0.00				94.1%	97.1%				n/a	n/a			
Katowice - Pyrzowice	EPKT	0.01	0.00				90.9%	90.3%				n/a	n/a			
Krakow - Balice	EPKK	0.21	0.05				94.3%	95.5%				n/a	n/a			
Lodz - Lublinek	EPLL	0.00	0.04				92.3%	96.2%				n/a	n/a			
Lublin	EPLB	0.00	0.00				92.4%	97.3%				n/a	n/a			
Olsztyn-Mazury	EPSY		0.00				n/a	81.3%				n/a	n/a			
Poznan - Lawica	EPPO	0.00	0.00				94.7%	96.5%				n/a	n/a			
Radom	EPRA	0.00	0.00				87.5%	70.0%				n/a	n/a			
Rzeszow - Jasionka	EPRZ	0.00	0.00				90.8%	93.5%				n/a	n/a			
Szczecin - Goleniów	EPSC	0.00	0.00				96.6%	86.1%				n/a	n/a			
Warszawa/ Chopina	EPWA	0.03	0.48				94.8%	94.5%				0.26	0.45			
Warszawa/ Modlin	EPMO	0.00	0.00				93.8%	96.7%				n/a	n/a			
Wroclaw/ Strachowice	EPWR	0.00	0.00				91.8%	94.4%				n/a	n/a			
Zielona Gora - Babimost	EPZG	0.00	0.00				100.0%	92.9%				n/a	n/a			

POLAND: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services								
Poland ECZ represents 2.2% of the SES en-route ANS determined costs in 2016								
· ATSP: PANSA								
· FAB: Baltic FAB								
· National currency: PLN Exchange rate 2009: 1 EUR = 4.32383 PLN								
2. En-route DUC monitoring at Charging Zone level								
Poland: Data from RP2 Performance Plan		(*See Note 1)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal PLN)				658 592 342	687 375 337	807 874 605	840 660 505	795 098 157
Inflation %				2.4%	2.5%	1.1%	1.9%	2.4%
Inflation index (100 in 2009)				115.9	118.7	111.3	113.4	116.1
Real en-route costs (PLN2009)				568 474 758	578 848 069	725 678 008	741 339 221	685 060 982
Total en-route Service Units				4 362 840	4 544 000	4 299 929	4 419 000	4 560 000
Real en-route unit cost per Service Unit (PLN2009)				130.30	127.39	168.77	167.76	150.23
Real en-route unit cost per Service Unit (EUR2009)				30.14	29.46	39.03	38.80	34.75
Poland: Actual data from Reporting Tables				2015A	2016A	2017A	2018A	2019A
En-route costs (nominal PLN)				614 155 894	650 495 550			
Inflation %				-0.7%	-0.2%			
Inflation index (100 in 2009)				110.9	110.6			
Real en-route costs (PLN2009)				553 949 301	587 902 332			
Total en-route Service Units				3 880 013	4 174 735			
Real en-route unit cost per Service Unit (PLN2009)				142.77	140.82			
Real en-route unit cost per Service Unit (EUR2009)				33.02	32.57			
Difference between Actuals and Planned				2015	2016	2017	2018	2019
En-route costs (nominal PLN)		in value		-44 436 448	-36 879 787			
		in %		-6.7%	-5.4%			
Inflation %		in p.p.		-3.1 p.p.	-2.7 p.p.			
Inflation index (100 in 2009)		in p.p.		-5.0 p.p.	-8.1 p.p.			
Real en-route costs (PLN2009)		in value		-14 525 457	9 054 263			
		in %		-2.6%	1.6%			
Total en-route Service Units		in value		-482 827	-369 265			
		in %		-11.1%	-8.1%			
Real en-route unit cost per Service Unit (PLN2009)		in value		12.47	13.44			
		in %		9.6%	10.5%			
Real en-route unit cost per Service Unit (EUR2009)		in value		2.88	3.11			
		in %		9.6%	10.5%			
3. Focus on en-route at State/Charging Zone level								
En-route unit cost								
In 2016, the actual en-route unit cost in real terms (32.57 €2009) is +10.5% higher than planned in the PP (29.46 €2009). This difference results from the combination of lower than planned TSUs (-8.1%) and higher than planned en-route costs (+1.6%, or +2.1 M€2009).								
En-route service units								
Actual TSUs are -8.1% lower than planned as air traffic over Poland was still negatively affected by the situation in the Ukrainian airspace. The difference in TSUs falls outside the ±2% dead-band but inside the ±10% alert threshold foreseen in the traffic risk sharing mechanism. The resulting loss of revenues is therefore shared between the ATSP (PANSA) and airspace users with the loss borne by the ATSP amounting to -4.9 M€2009.								
En-route costs								
In nominal terms, actual en-route costs are -5.4% lower than planned. However, since the actual inflation index is also lower than planned (-8.1 p.p.), actual en-route costs are +1.6% above the planned level when expressed in €2009.								
The higher than planned en-route costs in real terms are driven by higher costs for the ATSP, PANSA (+0.4% or +0.5 M€2009) and for the NSA/EUROCONTROL (+17.9% or +1.8 M€2009) while the costs reported for the MET Service Providers (-2.9% or -0.1 M€2009) are below plans. PANSA being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.								
Costs exempt from cost-sharing are reported for a total amount of +1.2 M€2009 corresponding to EUROCONTROL costs and new cost item required by law. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.								

Year	Difference (%)
2015	-2.6%
2016	1.6%
2017	0%
2018	0%
2019	0%

Year	Difference (%)
2015	-11.1%
2016	-8.1%
2017	0%
2018	0%
2019	0%

Year	En-route DUC (PP, €2009)	En-route unit costs (actual, €2009)
2015	30.14	33.02
2016	29.46	32.57
2017	39.03	
2018	38.80	
2019		34.75

POLAND: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

4. En-route traffic monitoring (Actual 2015-2019 TSUs compared to PP)

5. En-route costs monitoring (2016 actuals compared to PP)

Costs by entity at ECZ level:

ATSP	0.4%
Other ANSPs	-
METSP	-2.9%
NSA/EUROCONTROL	17.9%
Total	1.6%

Costs by nature at ATSP level:

Staff	1.5%
Other operating costs	-16.3%
Depreciation	7.5%
Cost of capital	15.2%
Exceptional items	-
VFR exempted flights	9.3%
Total	0.4%

6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	526	102			
	International agreements	125	1 101			
by entity	ATSP	526	102			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	125	1 101			
Total costs exempt from cost sharing		651	1 202			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Poland 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - PLN

The CUR charged to airspace users in 2016 is 145.47 PLN. This is -3.8% lower than the nominal DUC (151.27 PLN). The difference between these two figures (-5.80 PLN) mainly relates to:

- an adjustment for over recoveries from 2010 and 2011 (-6.15 PLN) reimbursed to airspace users in 2016;
- an inflation adjustment (-5.03 PLN) corresponding to the impact of a lower than planned inflation index for the year 2014 and the subsequent reimbursement to airspace users in 2016; and,
- a traffic risk sharing adjustment (+3.24 PLN) which reflects the loss in revenues due to lower than planned traffic in 2014 which is also charged to airspace users in 2016.

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the RP2 performance plan.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Poland 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - PLN

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (147.88 PLN) is -2.2% (-3.39 PLN) lower than the nominal DUC (151.27 PLN). The two most important factors contributing to the observed difference are:

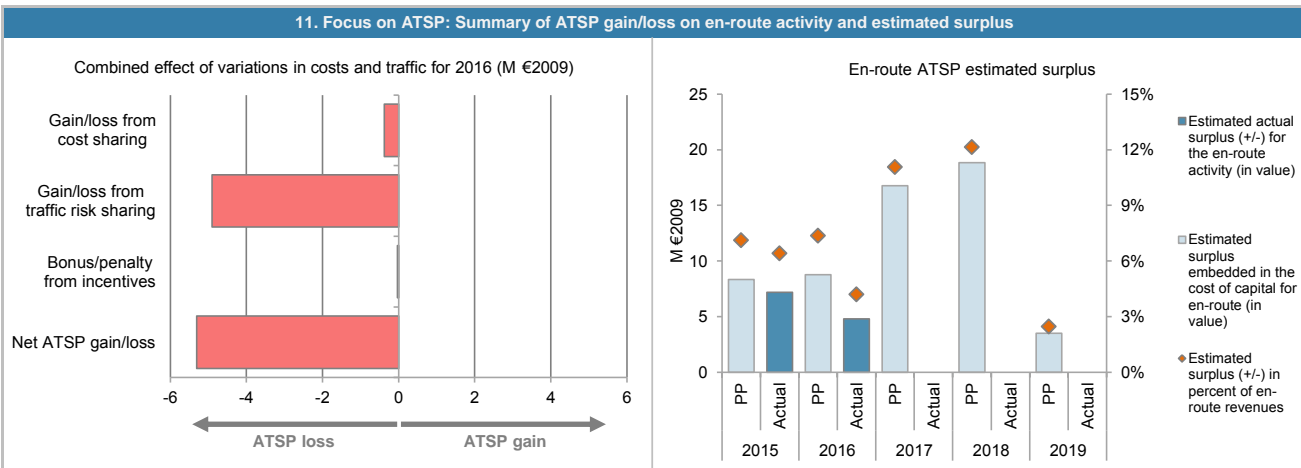
- an inflation adjustment (-11.23 PLN) which reflects the impact of a lower than planned inflation index in 2016 which will be reimbursed to airspace users in 2018; and,
- a traffic risk sharing adjustment (+6.28 PLN) corresponding to the loss in revenues due to lower than planned traffic in 2016 which will be charged to airspace users in 2018.

These costs and adjustments are divided by the **actual** TSUs in 2016.

POLAND: En-route ATSP (PANSÁ)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	116 939	118 981			
Actual costs for the ATSP	113 577	119 455			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	3 361	-474			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	526	102			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	3 888	-373			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-11.1%	-8.1%			
Determined costs for the ATSP (PP) - based on actual inflation	122 165	127 693			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-5 375	-4 901			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	-32			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-1 488	-5 305			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	140 047	147 467	214 796	241 099	254 476
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	140 047	147 467	214 796	241 099	254 476
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	8 333	8 774	16 776	18 830	3 514
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.0%	6.0%	7.8%	7.8%	1.4%
Estimated surplus embedded in the cost of capital for en-route (in value)	8 333	8 774	16 776	18 830	3 514
Overall estimated surplus (+/-) for the en-route activity	8 333	8 774	16 776	18 830	3 514
Revenue/costs for the en-route activity	116 939	118 981	151 522	155 060	141 971
Estimated surplus (+/-) in percent of en-route revenues	7.1%	7.4%	11.1%	12.1%	2.5%
Estimated ex-ante RoE pre-tax rate (in %)	6.0%	6.0%	7.8%	7.8%	1.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	145 940	169 815			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	145 940	169 815			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	8 683	10 104			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.0%	6.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	8 683	10 104			
Net ATSP gain(+)/loss(-) on en-route activity	-1 488	-5 305			
Overall estimated surplus (+/-) for the en-route activity	7 196	4 799			
Revenue/costs for the en-route activity	112 090	114 150			
Estimated surplus (+/-) in percent of en-route revenues	6.4%	4.2%			
Estimated ex-post RoE pre-tax rate (in %)	4.9%	2.8%			



12. Focus on en-route ATSP: General conclusions

Actual 2016 PANSa en-route costs vs. PP

In 2016, PANSa actual en-route costs are +0.4% (+0.5 M€2009) higher, in real terms, than planned in the PP. Based on the Additional Information provided with the en-route Reporting Tables, the main drivers for the observed difference are:

- Higher staff costs (+1.5% or +1.2 M€2009). However, as highlighted in box 3, the lower actual inflation index for the year 2016 is affecting the comparison of costs in real terms. When considering nominal terms, actual staff costs are -5.4% lower than planned, mainly due to a lower number of FTEs following the introduction of an early retirement programme in 2015.
- Lower other operating costs (-16.3% or -2.9 M€2009), mainly due to lower provisions for bad debt, savings across a range of expenses (rent and lease fees, materials and energy), and the netting of actual costs by non-ANS revenues while gross costs were reported in the PP.
- Higher depreciation costs (+7.5% or +0.8 M€2009).
- Higher cost of capital (+15.2% or +1.3 M€2009) due to a higher asset base.

PANSa net gain/loss on en-route activity in 2016

As shown in box 9, PANSa generated a net loss of -5.3 M€2009 on the en-route activity. This is a combination of the following elements:

- a loss of -0.4 M€2009 arising from the cost sharing mechanism;
- a loss of -4.9 M€2009 arising from the traffic risk sharing mechanism; and,
- a loss of -0.03 M€2009 corresponding to a penalty incurred as part of the capacity target incentive mechanism. This amount corresponds to -0.03% of PANSa en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TNSUs). The inclusion of this penalty in the chargeable cost base will be examined by the European Commission.

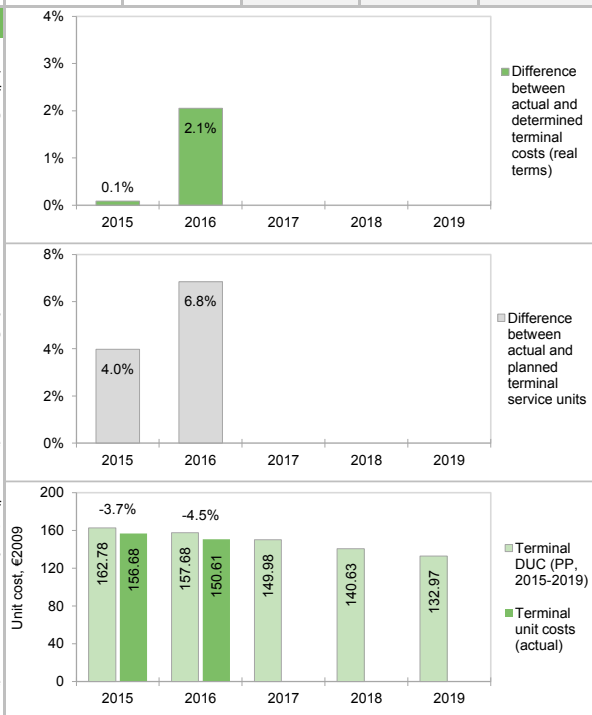
PANSa overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-5.3 M€2009) and the surplus embedded in the actual cost of capital (+10.1 M€2009) amounts to +4.8 M€2009 (4.2% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 2.8%, which is lower than the 6.0% planned in the PP.

POLAND: Terminal charging zone

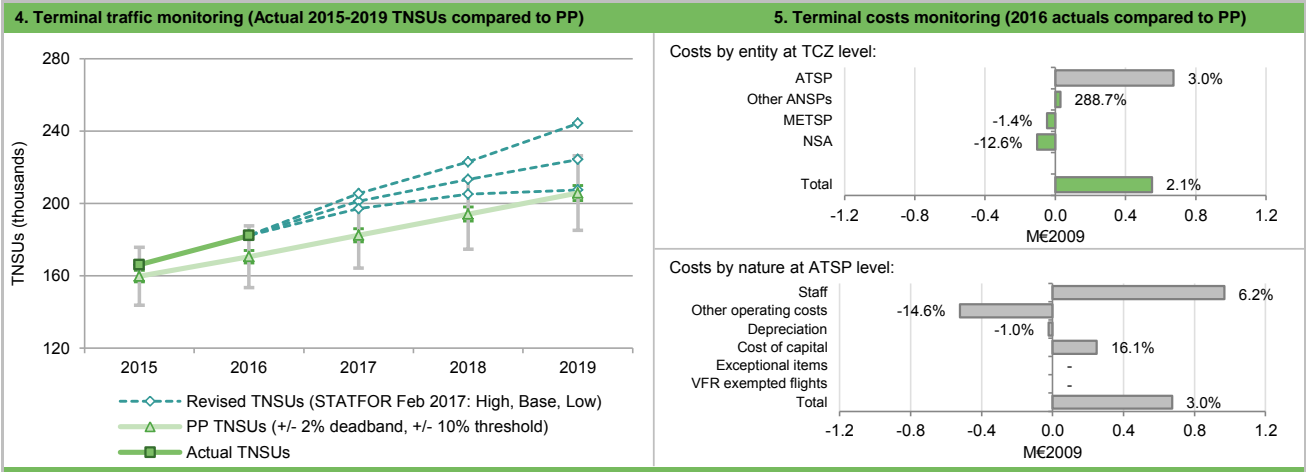
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
Poland TCZ represents 2.4% of the SES terminal ANS determined costs in 2016	Is this TCZ applying traffic risk sharing?				No
ATSP: PANSAs	Airports with fewer than 70,000 IFRs ATMs:				14
National currency: PLN	Airports with between 70,000 and 225,000 IFRs ATMs:				1
Number of airports in charging zone in 2016: 15, of which:	Airports with more than 225,000 IFRs ATMs:				0
2. Terminal DUC monitoring at Charging Zone level					
Poland: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal PLN)	130 300 488	138 094 703	144 015 701	147 246 621	151 273 277
Inflation %	2.4%	2.5%	2.5%	2.5%	2.5%
Inflation index (100 in 2009)	115.9	118.7	121.7	124.8	127.9
Real terminal costs (PLN2009)	112 470 999	116 291 417	118 319 581	118 023 435	118 293 604
Total terminal Service Units	159 800	170 574	182 449	194 101	205 744
Real terminal unit cost per Service Unit (PLN2009)	703.82	681.76	648.51	608.05	574.96
Real terminal unit cost per Service Unit (EUR2009)	162.78	157.68	149.98	140.63	132.97
Poland: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal PLN)	124 797 744	131 310 779			
Inflation %	-0.7%	-0.2%			
Inflation index (100 in 2009)	110.9	110.6			
Real terminal costs (PLN2009)	112 563 640	118 675 544			
Total terminal Service Units	166 156	182 241			
Real terminal unit cost per Service Unit (PLN2009)	677.46	651.20			
Real terminal unit cost per Service Unit (EUR2009)	156.68	150.61			
Difference between Actuals and Planned	2015	2016	2017	2018	2019
Terminal costs (nominal PLN) in value	-5 502 744	-6 783 923			
Terminal costs (nominal PLN) in %	-4.2%	-4.9%			
Inflation % in p.p.	-3.1 p.p.	-2.7 p.p.			
Inflation index (100 in 2009) in p.p.	-5.0 p.p.	-8.1 p.p.			
Real terminal costs (PLN2009) in value	92 642	2 384 127			
Real terminal costs (PLN2009) in %	0.1%	2.1%			
Total terminal Service Units in value	6 356	11 666			
Total terminal Service Units in %	4.0%	6.8%			
Real terminal unit cost per Service Unit (PLN2009) in value	-26.36	-30.56			
Real terminal unit cost per Service Unit (PLN2009) in %	-3.7%	-4.5%			
Real terminal unit cost per Service Unit (EUR2009) in value	-6.10	-7.07			
Real terminal unit cost per Service Unit (EUR2009) in %	-3.7%	-4.5%			
3. Focus on terminal at State/Charging Zone level					
<p>For the year 2016, Poland reported only one TCZ comprising 15 airports: Warsaw Chopin, Bydgoszcz, Gdansk, Krakow, Katowice, Lublin, Lodz, Warszawa Modlin, Poznan, Radom-Sadkow, Rzeszow, Szczecin, Wroclaw, Zielona Gora and Olsztyn-Mazury (which was not part of the TCZ in 2015). From 2017 onwards, there will be two Polish TCZs, with one dedicated to Warsaw Chopin airport.</p>					
<p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (150.61 €2009) is -4.5% lower than planned in the PP (157.68 €2009). This difference results from the combination of higher than planned TNSUs (+6.8%) and higher than planned terminal costs (+2.1%, or +0.6 M€2009).</p>					
<p>Terminal service units Traffic risk sharing does not apply in the TCZ. The difference between actual and planned TSUs (+6.8%) therefore generates a gain of terminal revenues which will be fully reimbursed to airspace users.</p>					
<p>Terminal costs In nominal terms, actual terminal costs are -4.9% lower than planned. However, since the actual inflation index is also lower than planned (-8.1 p.p.), the actual terminal costs are +2.1% above the planned level when expressed in €2009.</p>					
<p>The deviation between actual and planned terminal costs in real terms reflects a combination of higher costs for PANSAs (+3.0% or +0.7 M€2009) and Modlin AFIS (the other terminal ANSP operating in Poland, +288.7% or +0.03 M€2009); and lower costs for the MET Service Providers (-1.4% or -0.05 M€2009) and the NSA (-12.6% or -0.1 M€2009). PANSAs being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.</p>					
<p>Costs exempt from cost-sharing are reported for a total amount of +0.02 M€2009 corresponding to new cost item required by law for PANSAs. These costs will be eligible for carry-over (reducing costs charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>					



POLAND: Terminal charging zone

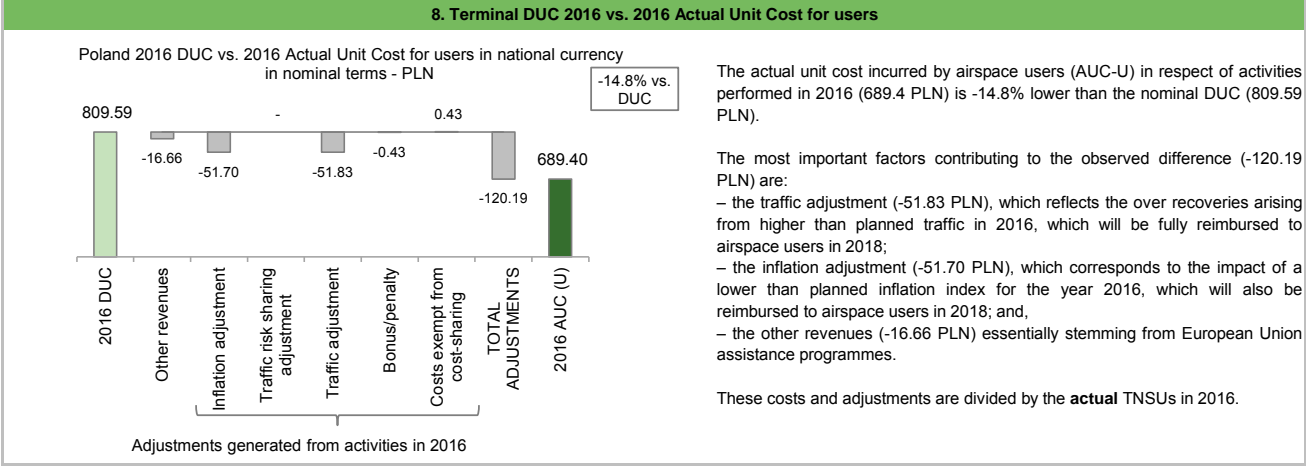
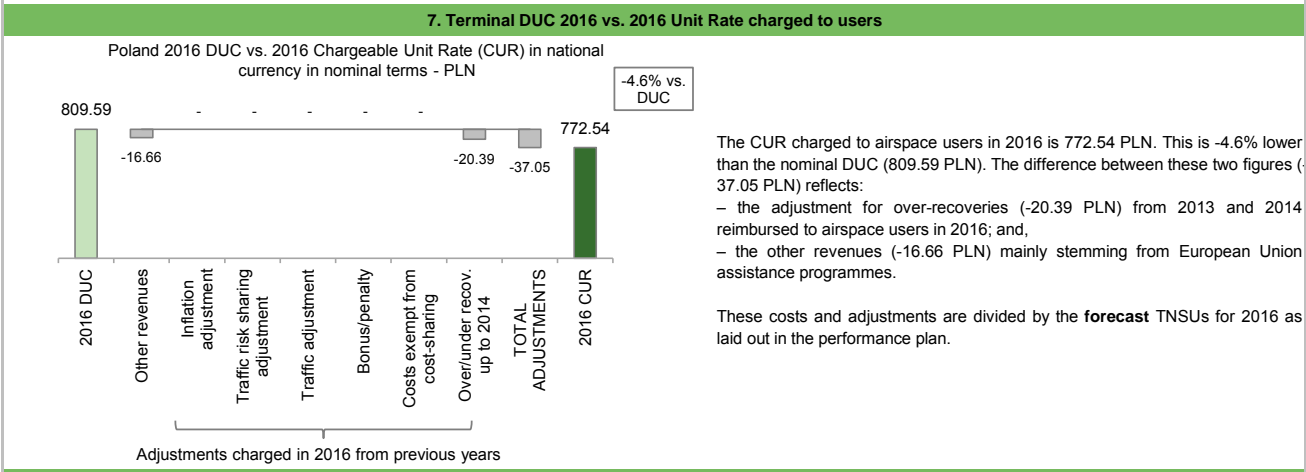
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	115	16			
	International agreements	0	0			
by entity	ATSP	115	16			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		115	16			

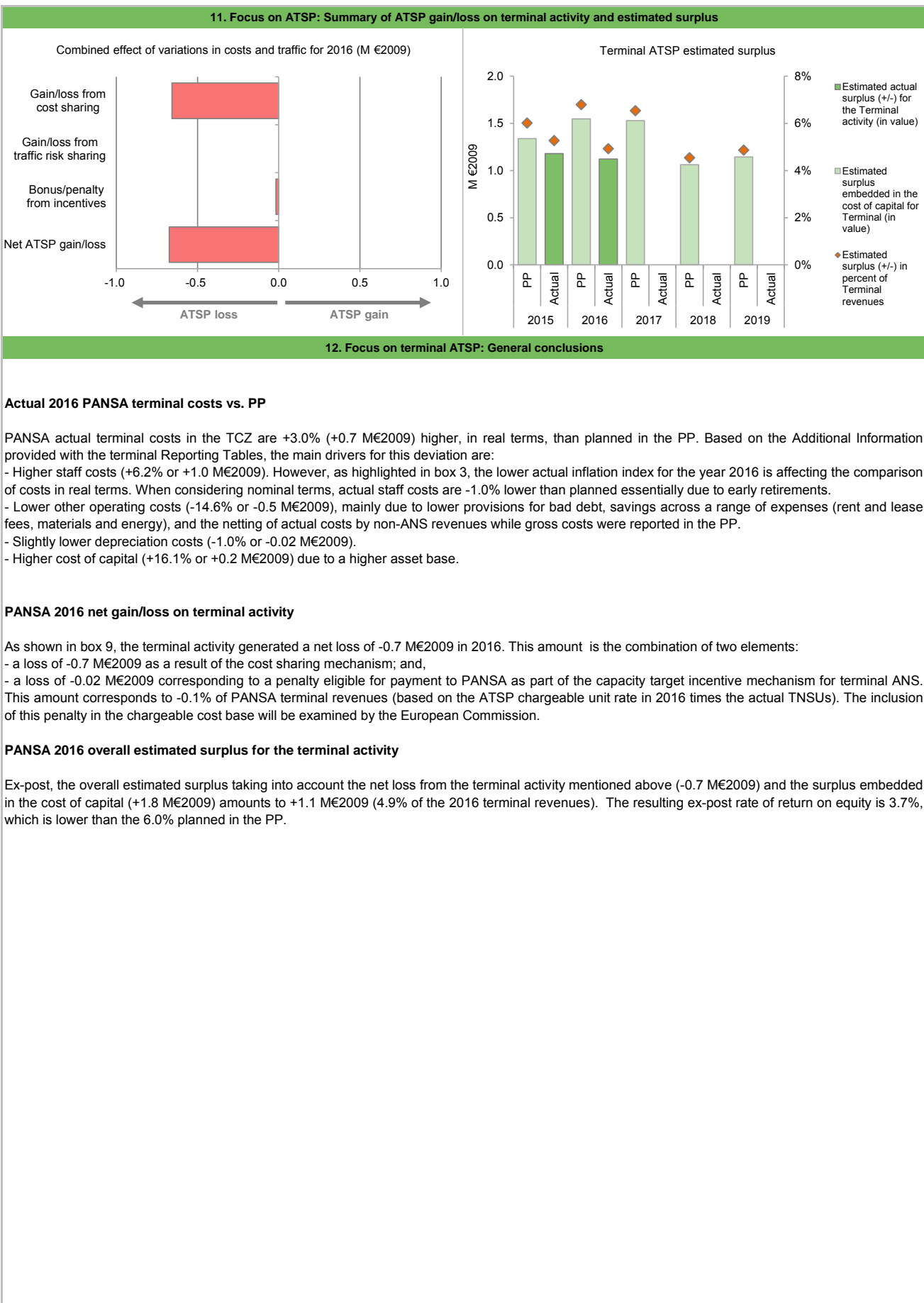
These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



POLAND: Terminal ATSP (PANSa)

Monitoring of terminal COST-EFFICIENCY for 2016

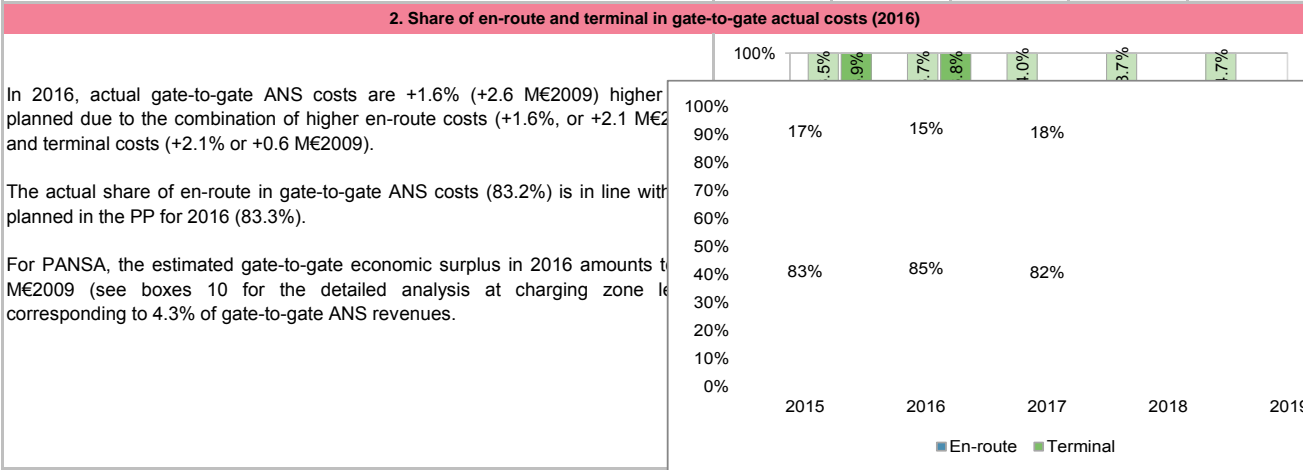
9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	22 279	22 785			
Actual costs for the ATSP	22 725	23 459			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-445	-674			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	115	16			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-330	-658			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	3	-17			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-327	-674			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	22 504	25 990	28 178	30 583	32 419
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	22 504	25 990	28 178	30 583	32 419
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	1 339	1 546	1 529	1 063	1 143
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.0%	6.0%	5.4%	3.5%	3.5%
Estimated surplus embedded in the cost of capital for terminal (in value)	1 339	1 546	1 529	1 063	1 143
Overall estimated surplus (+/-) for the terminal activity	1 339	1 546	1 529	1 063	1 143
Revenue/costs for the terminal activity	22 279	22 785	23 405	23 433	23 517
Estimated surplus (+/-) in percent of terminal revenues	6.0%	6.8%	6.5%	4.5%	4.9%
Estimated ex-ante RoE pre-tax rate (in %)	6.0%	6.0%	5.4%	3.5%	3.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	25 319	30 172			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	25 319	30 172			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	1 506	1 795			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.0%	6.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	1 506	1 795			
Net ATSP gain(+)/loss(-) on terminal activity	-327	-674			
Overall estimated surplus (+/-) for the terminal activity	1 179	1 121			
Revenue/costs for the terminal activity	22 397	22 785			
Estimated surplus (+/-) in percent of terminal revenues	5.3%	4.9%			
Estimated ex-post RoE pre-tax rate (in %)	4.7%	3.7%			



POLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Poland: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	131 474 817	133 873 919	167 832 225	171 454 294	158 438 464
Real terminal costs (EUR2009)	26 011 892	26 895 465	27 364 531	27 296 040	27 358 523
Real gate-to-gate costs (EUR2009)	157 486 709	160 769 384	195 196 756	198 750 334	185 796 987
En-route share (%)	83.5%	83.3%	86.0%	86.3%	85.3%
Poland: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	128 115 421	135 967 957			
Real terminal costs (EUR2009)	26 033 318	27 446 857			
Real gate-to-gate costs (EUR2009)	154 148 739	163 414 814			
En-route share (%)	83.1%	83.2%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-3 337 970	2 645 430			
in %	-2.1%	1.6%			
En-route share					
in p.p.	-0.4%	-0.1%			



3. Technical notes on en-route and terminal information reported by Poland

Note 1: Poland has submitted a request to the European Commission to revise their RP2 en-route cost-efficiency targets for the years 2017 to 2019. The figures shown in this report reflect: i) the adopted Performance Plan (EC Decision 2015/348 of 2 March 2015) for the years 2015 and 2016; and ii) the revised performance targets (approved by the SSC but waiting the publication of the final decision by the EC) for the years 2017 to 2019.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

BLUE MED FAB

Version: 1.1

Date: 9 October 2017

BLUE MED FAB

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	A	B			
	ANSPs	For Safety Culture MO	C	C			
	ANSPs	For all other MOs	C	B			

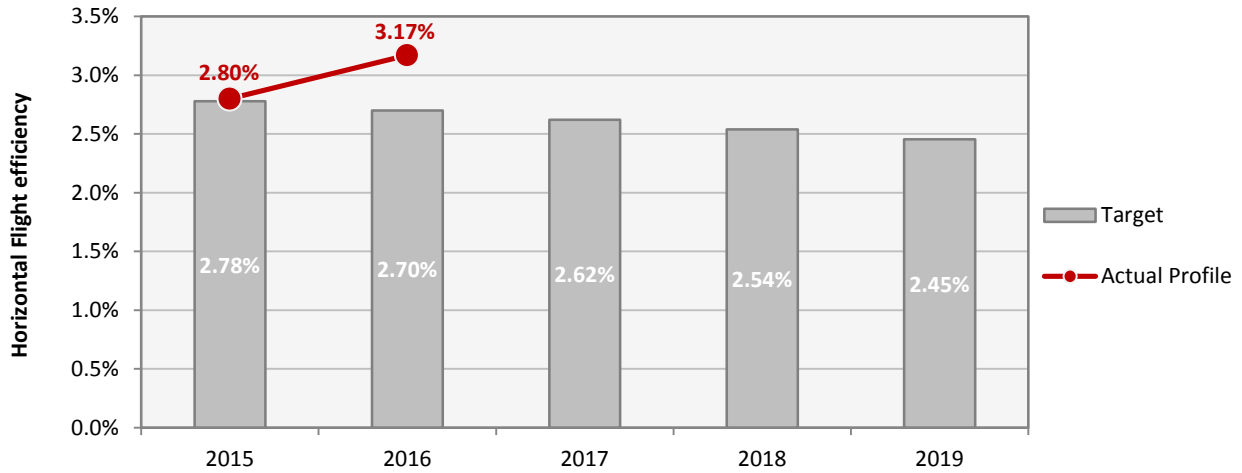
Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		88%	99%			
	Runway Incursions (RIs)		95%	91%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		12%	98%			
	Runway Incursions (RIs)		26%	85%			
	ATM Specific Occurences (ATM-S)		51%	65%			

Observations	
<p>The lowest answer in all EoSM Components/areas of the States is Level "B" which is below the 2019 EoSM target level. Safety Risk Management and Safety Assurance are already at the 2019 EoSM target level.</p>	

BLUE MED FAB

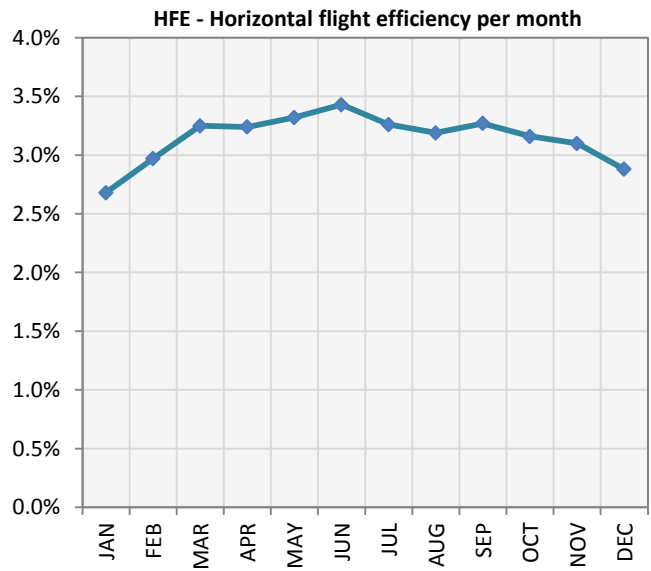
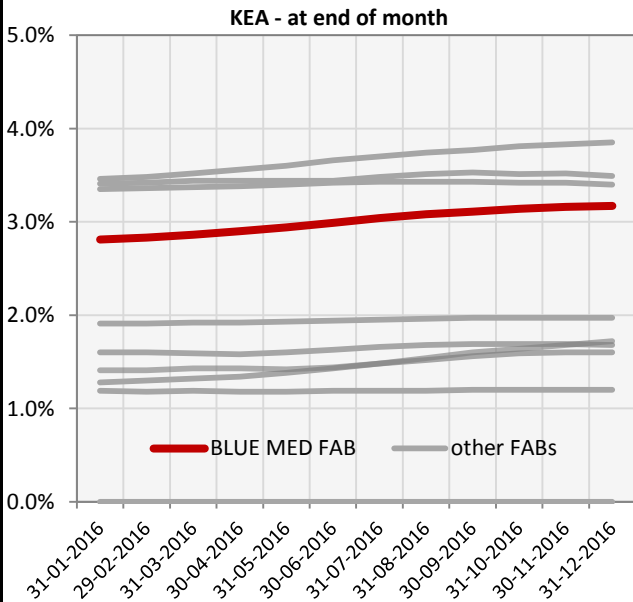
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	2.78%	2.70%	2.62%	2.54%	2.45%
Actual performance	2.80%	3.17%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	2.81%	2.83%	2.86%	2.90%	2.94%	2.99%	3.04%	3.08%	3.11%	3.14%	3.16%	3.17%
HFE	2.68%	2.97%	3.25%	3.24%	3.32%	3.43%	3.26%	3.19%	3.27%	3.16%	3.10%	2.88%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

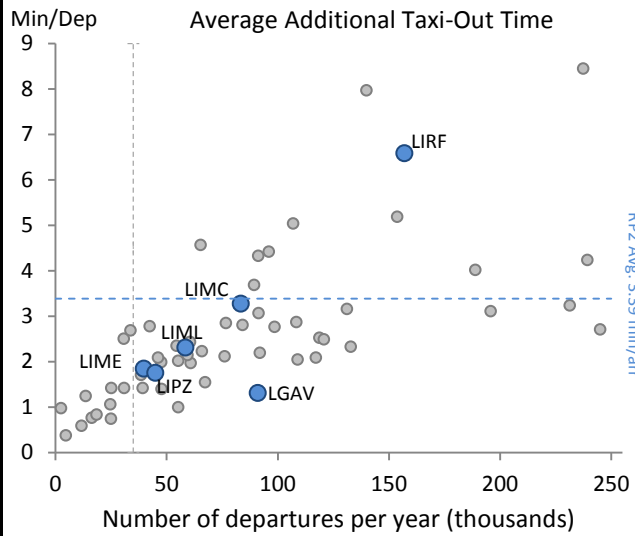
Observations

NM proposed measures: Cross-border FRA projects implementation must be considered for the entire Blue Med FAB starting with FRA projects for Greece together with lowering down of the FRA FL for the entire FAB. The interface between Blue Med FAB and FABEC or with other neighbouring areas needs to be addressed with priority.

1. Overview

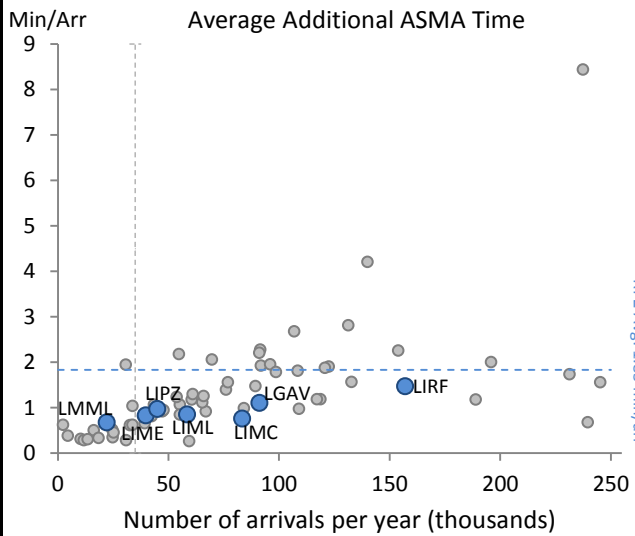
The Airport Operator Data Flow (APDF) is established for 7 out of the 9 airports subject to RP2 in the Blue Med FAB. The monitoring is done on the basis of the airports submitting data. BLUE MED member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues.

2. Additional Taxi-Out Time



According to the available data, the additional taxi out times of most airports within Blue Med FAB area are well below the average of airports in RP2 (3.39 min/dep.) At Rome Fiumicino, with more than 150000 departures, the additional TXOT is around 7 min/dep. Although Malta has established the Airport Operator Data Flow, the additional TXOT at this airport is not available due to missing data concerning the runway indicator.

3. Additional ASMA Time



The observed additional ASMA times at available airports within the Blue Med FAB area range well below the 2 minutes per arrival, even for the busier airports. While the airports under 50000 arrivals per year show a performance commensurate with the level of traffic, the busier airports show best in class performance for their traffic levels.

BLUE MED FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.17	0.18	0.18	0.18	0.18	
FAB Target	0.35	0.36	0.37	0.37	0.38	
Actual performance	0.64	0.13				
BLUE MED FAB assessment of capacity performance						
No direct assessment of FAB capacity performance was provided. However, it was stated that even though FAB traffic growth was in line with the STATFOR baseline forecast, there was a considerable difference in national traffic growth with Italy losing traffic but Malta, Cyprus and Greece seeing a rise in traffic numbers that off-sets the overall figure.						
Monitoring process for capacity performance						
The BLUEMED FAB monitoring report only made reference to the monitoring process in Greece, stating "The monitoring process at National level involved the EUROCONTROL, NMIR tool which is permanently used by the corresponding local expert of HANSP for that particular reason."						
Application of Corrective Measures for Capacity						
No corrective measures required.						
Capacity Planning						
No information provided in BLUEMED FAB monitoring report.						
Assessment of capacity performance						
Overall BLUEMED FAB surpassed their adopted FAB target (0,36) and even provided a positive contribution to network performance by surpassing the BLUEMED FAB reference value of 0,18 minutes per flight, by achieving a FAB performance of 0,13 minutes average ATFM delay per flight in 2016..						
En route Capacity Incentive Scheme						
No FAB wide incentive scheme is in place. Several of the Member States have adopted national incentive schemes which are covered in the national sections.						
Result of FAB Capacity Incentive Scheme						
N/A						
Update on Military dimension of the plan						
<p>A document "Harmonization of procedures for military operations over high seas of Blue Med Airspace" is believed to have reached a sufficient level of maturity for the Civil Military Cooperation Committee (CMCC) approval after a final discussion, for the subsequent endorsement in the BM FAB.</p> <p>Concerning the Greek FUA Working group in particular, amongst the several meetings that it has joined up so far for the subject, it is worthwhile to be mentioned that in the meeting of 16-3-2017 where all the subject experts (from civil – military domain) participated the following had been decided:</p> <ol style="list-style-type: none"> 1)Creation of TANAGRA TSA for supersonic flights 2)Agreement in FUA ANNUAL REPORT to be addressed to EC (via STATE –D4) 3)Procedure agreement for installation of LARA TOOL. 4) Preparation of agreement between ATH-MAK ACCs and MILITARY Authorities . <p>All the above have been addressed to HCAA Regulatory Division (D4- State entity) on 29-3-2017 for further actions and according to the procedures of FUA as defined in the agreement between HCAA and MILITARY (HIGH LEVEL MEETING -LEVEL 1).</p> <p>According to the Minutes of Meeting held all the above adopted and corresponding actions from all involved, are ongoing.</p>						
Observations on Military dimension of the plan						
The update of information regarding civil military coordination is welcomed, however it is noted that no information is provided on how civil military coordination will provide additional capacity for GAT traffic.						

Application of FUA

GREECE : The ASM-FUA system has been implemented and its operation is ensured in combination with the AMC-FUA. The latter is in close cooperation with the HANSP/D17 division, which has the overall responsibility of ASM/ATFM functions. Furthermore, in the section HANSP/D17/C the so called CIAM tool of Eurocontrol is in operation supporting every day activities, like the issuance of AUP/UUP at level 2 and 3, meaning the level of pre-tactical and tactical planning. For the CIAM system (AMC-FUA) reference is also made in the mutual agreement between N.M. and HANSP (Annex 1, page 4, code number CC0000001710) as well as in para 3.2 of Annex 3 to the same agreement, where the maintenance process of the system in question is mentioned .

For the FUA function the State, within the frame of agreement between HCAA and Hellenic Air Force (HAF), has established appropriate FUA mechanisms:

1. At Strategic Level 1.

- High Level Airspace Policy Body which is a High Level Council consisting of the HCAA Governor and the Hellenic Air Force Deputy Chief of Staff. The High Level Council meets once a year and whenever it is deemed necessary and amongst others is responsible for updating and/or monitoring the implementation of the civil-military Agreement. It also deals with matters concerning airspace structure and the flexible use of airspace by civil and military traffic.

2. At Pre-tactical Airspace Management Level 2

- Coordinating Body for ATM, consisting of the HCAA Regulator (D4), the Hellenic Air Force ATS Director (HAF/A4), the ASM-ATFCM Director (D17) and experts as deemed necessary.
- The Airspace management Work Group, staffed by teams from the Hellenic Air Force Section (A3), the HCAA(D4/B) Section, the (D17/C) Section, the (D17/ST) Section is responsible for processing requests and management of the existing CDRs and TSAs.

3. At Tactical Airspace Management Level 3 :

- The Airspace Management Cell -AMC, with established coordination procedures and communication facilities which allow the real-time activation, deactivation or reallocation of airspace allocated at pre-tactical level.

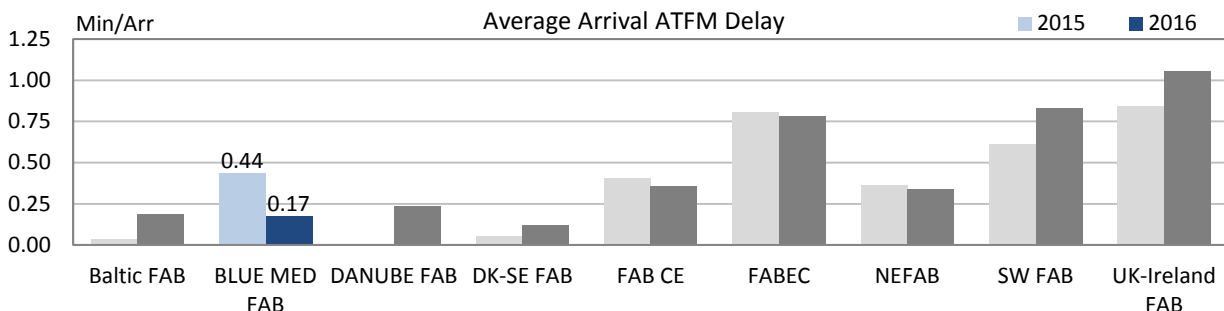
Observations of the Application of FUA

The information from Greece regarding the application of FUA is welcomed. Information on how the BLUE MED FAB authorities determine whether or not the optimum benefit has been provided to both civil and military airspace users would be appreciated.

1. Overview

BLUE MED FAB contributes adequately to the airport-related ANS Capacity performance in Europe. In 2016, the aggregated average arrival ATFM delay per flight reduced by more than 60% in comparison to 2015. This improvement is strongly linked with the significant reduction of arrival ATFM delay at Rome Fiumicino, the busiest airport in the FAB.

2. Arrival ATFM Delay



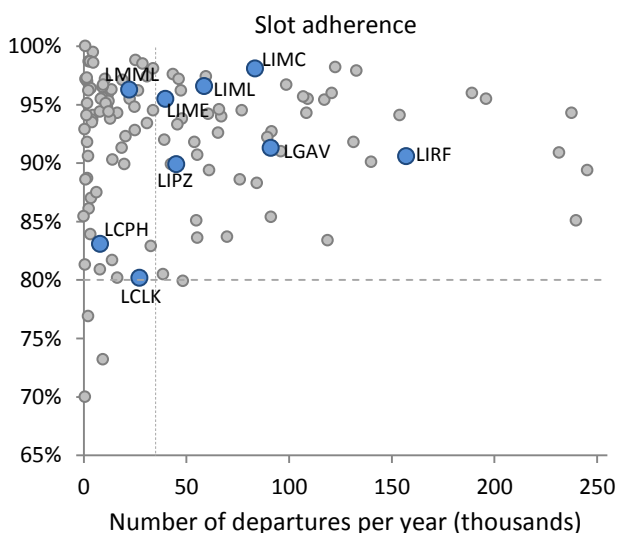
In 2016, BLUE MED FAB achieves a performance of 0.17 min/arr. and ranges next to BALTIC FAB and DK-SE FAB within the best-in-class performance well below the European average (0.67 min/arr.). This reflects a significant improvement in comparison with 2015 (i.e. 61.4%).

3. Arrival ATFM Delay – National Targets and Incentive Schemes

Greece, Italy and Malta have established a national target on arrival ATFM delay, while Cyprus only establishes local reference values.

Malta and Greece have not established an incentive scheme. Italy applies its incentive scheme resulting in a bonus while Cyprus does not apply the incentive scheme that would result in a penalty as the actual performance does not meet the target.

4. ATFM Slot Adherence



The overall performance in terms of adherence to ATFM slots is largely unchanged for BLUE MED FAB. In particular, slot compliance in Cyprus (i.e. LCLK: 80.2% and LCPH: 83.1%) ranges well below 90%. Noteworthy is the high level of compliance with ATFM slots at Milan/Malpensa (LIMC: 98.1%).

5. Pre-departure Delay

Italy is the main contributor to average pre-departure delay performance within BLUE MED FAB.

Greece and Malta show a minor increase in average pre-departure delay per flight.

The monitoring of pre-departure delay requires the implementation of the Airport Operator Data Flow. This data flow is not yet established for Cyprus.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Cyprus

Version: 1.1

Date: 9 October 2017

CYPRUS

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	55	B	C	C	C	C
CYATS	58	C	C	B	C	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	0%
Runway Incursions (RIs)	100%	0%
ATM Specific Occurrences (ATM-S)		0%
Source of RAT data:	DCA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	16	2
CYATS	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	0
Occurrence reporting and Investigation	5	3
TOTAL	18	5

Observations

One out of the four reviewed EoS M Components/areas of the State is below the 2019 EoS M target level (Safety Culture excluded). After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 3 are below Level C.

CYPRUS

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Cyprus identified two airports, Larnaca and Paphos, as subject to RP2. However the airport operator data flow is not established for any of them and therefore the monitoring of operational ANS performance at airports in Cyprus does not cover any of the environment indicators.

Cyprus' NSA considers Paphos should be excluded from the PP monitoring process as it has less than 70000 movements and is not the airport with the highest number of IFR air transport movements. However, being part of the Charging Zone, and as the list of monitored airports must be aligned with it, it must be included in the monitoring.

Member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues.

2. Additional Taxi-Out Time

Due to the lack of data, the additional taxi-out time indicator is not monitored at LCLK and LCPH at the time being.

3. Additional ASMA Time

The additional time in terminal airspace (ASMA) indicator cannot be monitored at LCLK and LCPH at the time being.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Larnaca	LCLK	n/a	n/a				n/a	n/a			
Paphos	LCPH	n/a	n/a				n/a	n/a			

CYPRUS

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	1.50	1.50	1.50	1.50	1.50	
Deadband +/-	?	?	?	?	?	
Actual performance	2.47	0.63				

National capacity incentive scheme

The BLUEMED FAB 2016 monitoring report contains information regarding a national en route capacity incentive scheme applied in Cyprus.

It reports a national target of 1.5 minutes delay per flight although it states that this figure has not been agreed with the EC.

It registers an actual achieved national performance value of 0.6 minutes per flight and reports that this entitles the ANSP to a bonus of 1% of the ATS turnover, equivalent to €380,000.

No details were provided about a national incentive scheme for Cyprus in the BLUEMED FAB performance plan, only vague reference to an incentive scheme being in accordance with Cyprus national law.

No financial penalties were listed in the 2015 annual monitoring report when national performance did not satisfy the adopted national target. (2015 Actual delay of 2.47 minutes per flight compared to 1.5 minutes as national target).

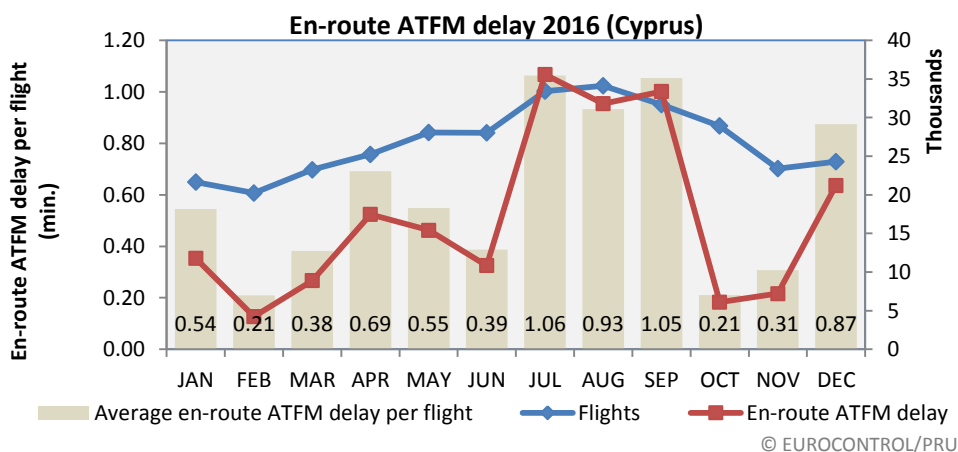
Compliance issues relating to national capacity incentive scheme

In the 2015 Annual Monitoring Report, the PRB flagged several compliance issues regarding a national incentive scheme in Cyprus:

"In the assessment report of the BLUEMED FAB RP2 performance plan, the PRB noted that the incentive scheme for Cyprus is non-transparent; it is not proportional or effective, and it does not foster a high-level of capacity performance at either FAB or national level. None of these issues were addressed in the FAB monitoring report."

The PRB notes that no further information regarding a national incentive scheme for Cyprus has been received since the original BLUEMED FAB performance plan.

Observations regarding national capacity performance



En-route ATFM delay per flight (Cyprus)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
2.65	2.32	3.54	1.62	1.59	2.16	1.91	2.47	0.63

The improvement in en route capacity performance in Cyprus for 2016 compared to 2015 is noted. However, Cyprus remains a capacity bottleneck and, based on the current capacity plans, the Network Manager expects Cyprus to continue to create significant delays for airspace users each year of RP2. The continued failure of Cyprus to implement planned and published capacity improvements and the inability of Cyprus to open the maximum number of ATC sectors during peak traffic demand is noted.

Planning and Effective Use of CDRs

Cyprus reports that there are no CDRs within the national airspace.

Observations on Planning and Effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 98%.

Procedure 3 is applicable within the State. Despite airspace reservations, via the UUP process, the airspace was only actually used for 5% of the period for which it was reserved.

Observations on Effective booking procedures

It is noted that Cyprus reports that effective coordination was made with a single military entity to ensure minimal adverse impact for en route general air traffic. However, it is also noted that Cyprus reports the frequent military activity of third parties as a hindrance to capacity performance.

CYPRUS

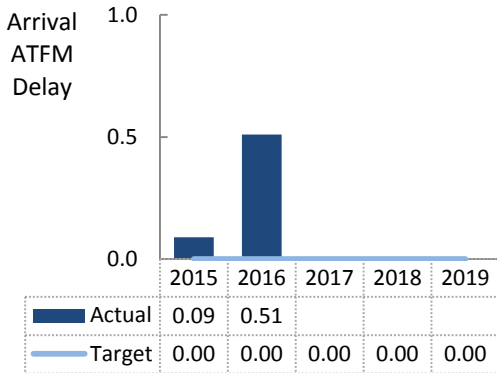
Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Cyprus, Larnaca (LCLK) and Paphos (LCPH) are the two airports subject to RP2. In 2016, the average arrival ATFM delay performance decreased by almost one minute per arrival at LCPH. At LCLK, the decrease of performance results in an average of 0.3 min/arr. in 2016 in comparison to negligible delay of 0.03 min/arr. in 2015. Slot adherence at both airports decreased by about 3% at LCPH and 4% at LCLK.

The monitoring of pre-departure delay is not yet feasible, as for neither of the airports the Airport Operator Data Flow is established.

2. Arrival ATFM Delay



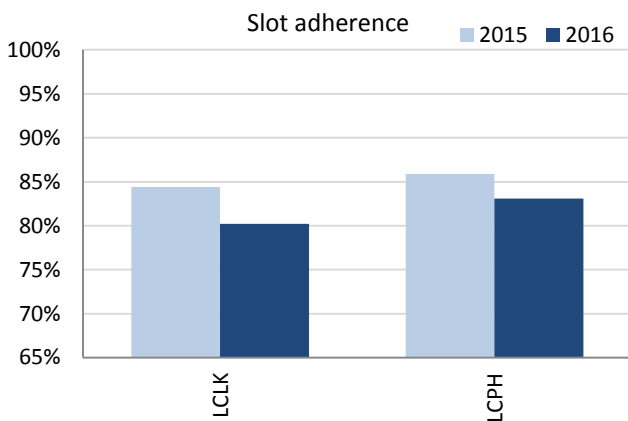
2016 shows a significant increase of arrival ATFM delay at airports in Cyprus (2015: 0.09 min/arr. vs 2016: 0.51 min/arr.). This increase is driven by the sharp increase of average arrival ATFM delay at LCPH of about one minute per flight, and the increase at LCLK ranging at 0.3 min/arr. in 2016. Arrival ATFM delay correlates with the reported airport-capacity (non ATC) constraints peaking in the summer season (approx. 30% traffic growth at LCLK, and approx. 10% traffic growth at LCPH).

3. Arrival ATFM Delay – National Target and Incentive Scheme

Cyprus has not established a national target on arrival ATFM delay, however, local reference values for the two airports, Larnaka (LCLK) and Paphos (LCPH) are provided. These local values are not met in 2016 for any of the two airports. The BLUE MED performance plan refers to the aim that zero delays for arriving aircraft are envisaged.

An associated incentive scheme is established but it is not applied in accordance with the reached values.

4. ATFM Slot Adherence



Both airports show an adherence to ATFM slots ranging below the 90% threshold. In 2016 the slot adherence decreased further by about 4% (2015: 84.4%, 2016: 80.2%) at LCLK, and just under 3% for LCPH (2015: 85.9%, 2016: 83.1%).

5. Pre-departure Delay

The monitoring of pre-departure delay is not yet feasible, as for neither of the airports the Airport Operator Data Flow is established.

Given the level of traffic observed at Larnaka (LCLK) and Paphos (LCPH), no considerable share of pre-departure delay is expected nor reported by airspace users.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Larnaca	LCLK	0.03	0.30				84.4%	80.2%				n/a	n/a			
Paphos	LCPH	0.26	1.22				85.9%	83.1%				n/a	n/a			

CYPRUS: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services					
<ul style="list-style-type: none"> · Cyprus ECZ represents 0.8% of the SES en-route ANS determined costs in 2016 · ATSP: DCAC Cyprus · FAB: BLUE MED FAB · National currency: EUR 					
2. En-route DUC monitoring at Charging Zone level					
Cyprus: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)	2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)	52 708 045	53 598 493	55 916 691	57 610 277	59 360 816
Inflation %	1.6%	1.7%	1.7%	1.8%	2.0%
Inflation index (100 in 2009)	112.9	114.8	116.8	118.9	121.3
Real en-route costs (EUR2009)	46 681 639	46 676 772	47 881 610	48 459 560	48 952 987
Total en-route Service Units	1 395 081	1 425 773	1 457 140	1 489 197	1 521 959
Real en-route unit cost per Service Unit (EUR2009)	33.46	32.74	32.86	32.54	32.16
Cyprus: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)	51 048 657	49 919 678			
Inflation %	-1.5%	-1.2%			
Inflation index (100 in 2009)	107.8	106.5			
Real en-route costs (EUR2009)	47 336 521	46 851 861			
Total en-route Service Units	1 547 646	1 540 071			
Real en-route unit cost per Service Unit (EUR2009)	30.59	30.42			
Difference between Actuals and Planned	2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value -1 659 388	in value -3 678 816			
	in % -3.1%	in % -6.9%			
Inflation %	in p.p. -3.1 p.p.	in p.p. -2.9 p.p.			
Inflation index (100 in 2009)	in p.p. -5.1 p.p.	in p.p. -8.3 p.p.			
Real en-route costs (EUR2009)	in value 654 882	in value 175 089			
	in % 1.4%	in % 0.4%			
Total en-route Service Units	in value 152 565	in value 114 298			
	in % 10.9%	in % 8.0%			
Real en-route unit cost per Service Unit (EUR2009)	in value -2.88	in value -2.32			
	in % -8.6%	in % -7.1%			
3. Focus on en-route at State/Charging Zone level					
<p>En-route unit cost In 2016, the actual en-route unit cost in real terms (30.42 €2009) is -7.1% lower than planned in the PP (32.74 €2009). This results from a combination of significantly higher than planned TSUs (+8.0%), and slightly higher than planned en-route costs in real terms (+0.4%, or +0.2 M€2009), although in nominal terms the costs are lower than planned (-6.9%, or -3.8 M€).</p>					
<p>En-route service units The difference between actual and planned TSUs (+8.0%) falls outside the ±2% dead band, but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues is therefore shared between the airspace users and the ATSP, the latter retaining a gain of +1.4 M€2009.</p> <p>Based on the STATFOR February 2017 base TSU growth scenario, Cyprus en-route TSUs deviation from the RP2 forecasts is expected to exceed the +10% threshold for the rest of RP2 (2017-2019). It is noted that the determined TSUs underpinning the adopted RP2 cost-efficiency targets were below STATFOR February 2014 low TSU growth scenario for all years of RP2 (2015-2019) at the time of PP adoption. According to additional information to June 2017 en-route reporting tables, due to the uncertainty concerning traffic forecasts as a result of the political instability affecting the neighbourhood countries, Cyprus decided to remain prudent when choosing the traffic forecast for the PP.</p>					
<p>En-route costs In nominal terms, actual en-route costs are -6.9% (-3.7 M€) lower than planned. However, since the actual inflation index is also significantly lower than planned (-8.3 p.p.), actual en-route costs are +0.4% (+0.2 M€2009) higher than planned when expressed in real terms.</p> <p>Higher than planned en-route costs in real terms are driven by the NSA/EUROCONTROL costs (+13.1%, or +1.3 M€2009), according to the additional information to the June 2017 en-route reporting tables, this is mainly a result of the "recruitment of additional staff" and the "upgrading of SAR infrastructure and additional outsourcing costs". Differently, the costs incurred by the DCAC (-1.7%, or -0.6 M€2009) and by the MET service provider (-14.7%, or -0.5 M€2009) are lower than planned, due to the "continuing austerity measures implemented in the entire Public Sector domain and the postponement of certain planned investments". A detailed analysis at ATSP level is provided in Box 12.</p> <p>Costs exempt from cost sharing are reported for a total amount of -0.1 M€2009 comprising the variation in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>					

Difference between actual and determined en-route costs (real terms)

Difference between actual and planned total service units

Unit cost, €2009

En-route DUC (PP, 2015-2019)

En-route unit costs (actual)

CYPRUS: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



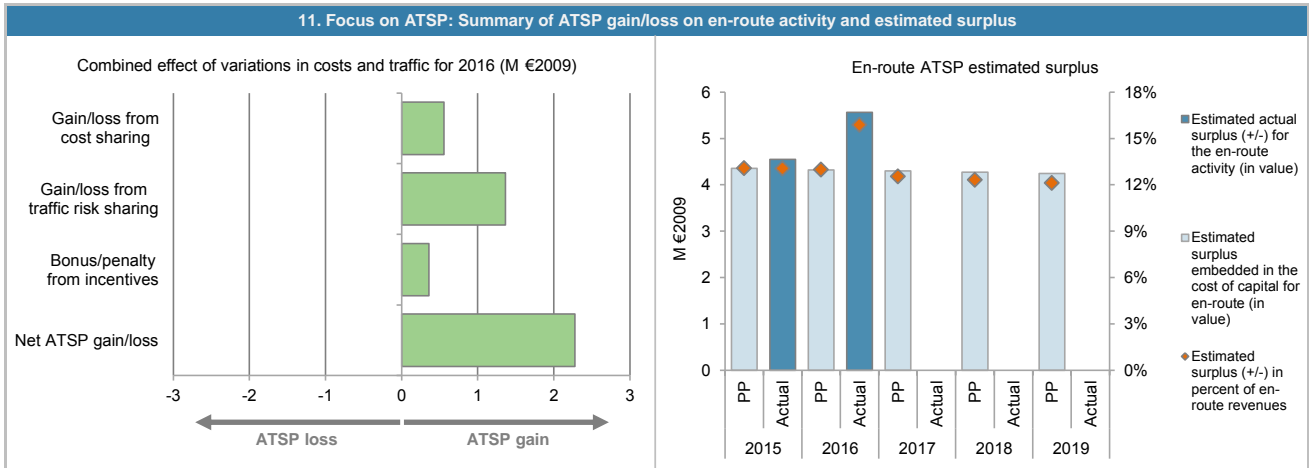
CYPRUS: En-route ATSP (DCAC Cyprus)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	33 286	33 298			
Actual costs for the ATSP	33 990	32 741			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-704	556			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-704	556			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	10.9%	8.0%			
Determined costs for the ATSP (PP) - based on actual inflation	34 850	35 886			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 533	1 365			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	357			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	830	2 278			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	32 241	32 252	33 222	33 594	33 907
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	32 241	32 252	33 222	33 594	33 907
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	4 353	4 323	4 301	4 276	4 242
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	13.5%	13.4%	12.9%	12.7%	12.5%
Estimated surplus embedded in the cost of capital for en-route (in value)	4 353	4 323	4 301	4 276	4 242
Overall estimated surplus (+/-) for the en-route activity	4 353	4 323	4 301	4 276	4 242
Revenue/costs for the en-route activity	33 286	33 298	34 299	34 683	35 006
Estimated surplus (+/-) in percent of en-route revenues	13.1%	13.0%	12.5%	12.3%	12.1%
Estimated ex-ante RoE pre-tax rate (in %)	13.5%	13.4%	12.9%	12.7%	12.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	27 553	24 508			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	27 553	24 508			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	3 720	3 285			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	13.5%	13.4%			
Estimated surplus embedded in the cost of capital for en-route (in value)	3 720	3 285			
Net ATSP gain(+)/loss(-) on en-route activity	830	2 278			
Overall estimated surplus (+/-) for the en-route activity	4 549	5 563			
Revenue/costs for the en-route activity	34 820	35 020			
Estimated surplus (+/-) in percent of en-route revenues	13.1%	15.9%			
Estimated ex-post RoE pre-tax rate (in %)	16.5%	22.7%			

CYPRUS: En-route ATSP (DCAC Cyprus)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 DCAC en-route costs vs. PP

In 2016, DCAC actual en-route costs, in real terms, are -1.7% (-0.6 M€2009) lower than planned. According to the additional information to the June 2017 en-route reporting tables, this results from the combination of:

- higher staff costs in real terms (+2.4%, or +0.3 M€2009). However, in nominal terms, the staff costs are lower than planned (-5.0%, or -0.7 M€) due to the “*continuing austerity measures implemented in the entire Public Sector domain*”.
- higher other operating costs in real terms (+4.6%, or +0.6 M€2009). However, in nominal terms, the other operating costs are lower than planned (-3.0%, or -0.4 M€).
- lower depreciation costs in real (-8.3%, or -0.4 M€2009) and nominal (-14.9%, or -0.8 M€) terms due to the postponement of some planned investments. Based on the information provided in the 2016 BLUE MED FAB Monitoring Report, actual capital expenditure in nominal terms is much lower than planned (-51.9%) in nominal terms.
- a lower cost of capital in real (-24.0%, or -1.0 M€2009) and nominal (-29.5%, or -1.5 M€) terms as a result of the factors outlined above.

DCAC net gain/loss on en-route activity in 2016

As shown in Box 9, DCAC generated a net gain of +2.3 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +0.6 M€2009 arising from the cost sharing mechanism;
- a gain of +1.4 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +0.4 M€, corresponding to a bonus of 380 '000€ for DCAC as part of the en-route capacity target incentive mechanism reported in the 2016 BLUE MED FAB monitoring report. This amount corresponds to 1.02% of DCAC en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this bonus in the chargeable cost-base will be examined by the European Commission.

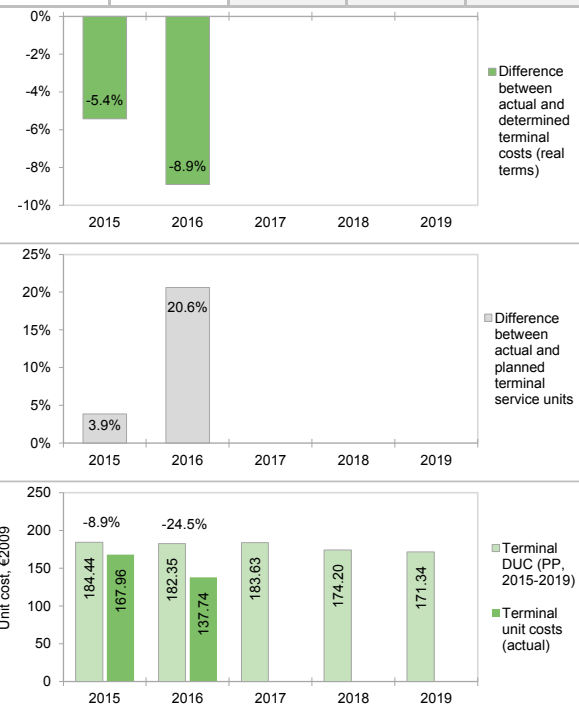
DCAC overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+2.3 M€2009) and the surplus embedded in the actual cost of capital (+3.3 M€2009) amounts to +5.6 M€2009 (15.9% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 22.7%, which is higher than the 13.4% planned in the PP. It is noted, that the actual asset base reported for DCAC in real terms (24.5 M€2009) is -24.0% lower than planned (32.3 M€2009).

CYPRUS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
Cyprus TCZ represents 0.6% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		No	
ATSP:	DCAC Cyprus	Airports with fewer than 70,000 IFRs ATMs:		2	
National currency:	EUR	Airports with between 70,000 and 225,000 IFRs ATMs:		0	
Number of airports in charging zone in 2016:	2,	of which:	Airports with more than 225,000 IFRs ATMs:		0
2. Terminal DUC monitoring at Charging Zone level					
Cyprus: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	8 100 923	8 207 992	8 448 984	8 697 839	8 954 830
Inflation %	1.6%	1.7%	1.7%	1.8%	2.0%
Inflation index (100 in 2009)	112.9	114.8	116.8	118.9	121.3
Real terminal costs (EUR2009)	7 174 699	7 148 010	7 234 887	7 316 289	7 384 765
Total terminal Service Units	38 900	39 200	39 400	42 000	43 100
Real terminal unit cost per Service Unit (EUR2009)	184.44	182.35	183.63	174.20	171.34
Cyprus: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	7 317 736	6 937 913			
Inflation %	-1.5%	-1.2%			
Inflation index (100 in 2009)	107.8	106.5			
Real terminal costs (EUR2009)	6 785 608	6 511 543			
Total terminal Service Units	40 399	47 274			
Real terminal unit cost per Service Unit (EUR2009)	167.96	137.74			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -783 187	in value -1 270 080			
	in % -9.7%	in % -15.5%			
Inflation %	in p.p. -3.1 p.p.	in p.p. -2.9 p.p.			
Inflation index (100 in 2009)	in p.p. -5.1 p.p.	in p.p. -8.3 p.p.			
Real terminal costs (EUR2009)	in value -389 091	in value -636 467			
	in % -5.4%	in % -8.9%			
Total terminal Service Units	in value 1 499	in value 8 074			
	in % 3.9%	in % 20.6%			
Real terminal unit cost per Service Unit (EUR2009)	in value -16.48	in value -44.61			
	in % -8.9%	in % -24.5%			
3. Focus on terminal at State/Charging Zone level					
This analysis focuses on Cyprus Terminal Charging Zone (TCZ) comprising Larnaka (LCLK) and Pafos (LCPH) international airports. See also Note 1 at the end of this Report.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (137.74 €2009) is -24.5% lower than planned in the PP (182.35 €2009). The difference results from significantly higher than planned TNSUs (+20.6%) and lower than planned terminal costs in real terms (-8.9%, or -0.6 M€2009).					
Terminal service units					
Traffic risk sharing mechanism does not apply in Cyprus TCZ. In 2016, the actual TNSUs in TCZ are +20.6% higher than planned in the PP. Based on the STATFOR February 2017 <u>base</u> TNSU growth scenario, Cyprus TNSUs are expected to abundantly exceed the TNSUs planned in the PP for the remainder of RP2. It should be noted that the forecast TNSUs selected in the RP2 PP are in line with the STATFOR February 2014 <u>low</u> case TNSU growth scenario at the time of PP adoption.					
Terminal costs					
In nominal terms, actual terminal costs are -15.5% (-1.3 M€) lower than planned. However, since the actual inflation index is also lower than planned (-8.3 p.p.), the actual terminal costs are -8.9% (-0.6 M€2009) below the plan when expressed in real terms.					
The difference between actual and planned terminal costs in real terms is mainly driven by lower than planned costs for DCAC (-17.6%, or -0.8 M€2009) and MET service provider (-14.6%, or -0.1 M€2009). Differently, the costs for NSA are higher (+14.0%, or +0.3 M€2009) than planned, which, according to the additional information to June 2017 terminal reporting tables, is due to the "recruitment of additional staff" and the "upgrading of SAR infrastructure and additional outsourcing costs". A detailed analysis at ATSP level is provided in Box 9.					
No costs exempt from cost sharing are reported for Cyprus TCZ.					



CYPRUS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-17.6%
Other ANSPs	-
METSP	-14.6%
NSA	14.0%
Total	-8.9%

Costs by nature at ATSP level:

Staff	-19.2%
Other operating costs	-8.6%
Depreciation	-22.6%
Cost of capital	-31.6%
Exceptional items	-
VFR exempted flights	-
Total	-17.6%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

In 2016, Cyprus did not implement a separate terminal navigation charge (TNC) unit rate for the Cyprus TCZ. See also **Note 1** at the end of this Report

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

In 2016, Cyprus did not implement a separate terminal navigation charge (TNC) unit rate for the Cyprus TCZ. See also **Note 1** at the end of this Report.

9. Focus on terminal ATSP: General conclusions (***See Note 1**)

Actual 2016 DCAC terminal costs in TCZ vs. PP

DCAC actual terminal costs in TCZ are -17.6% (-0.8 M€2009) lower, in real terms, than planned in the PP. According to the additional information to the June 2017 terminal reporting tables, this results from the combination of:

- lower staff costs (-19.2%, or -0.4 M€2009), mainly due to the "continuing austerity measures implemented in the entire Public Sector domain";
- lower other operating costs (-8.6%, or -0.1 M€2009);
- significantly lower depreciation costs (-22.6%, or -0.2 M€2009), mainly justified by the "postponement of planned investments for later years within the Reference Period"; and,
- a lower cost of capital (-31.6%, or -0.1 M€2009) as a result of the factors outlined above.

CYPRUS: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																	
Cyprus: Data from RP2 Performance Plan																	
	2015D	2016D	2017D	2018D	2019D												
Real en-route costs (EUR2009)	46 681 639	46 676 772	47 881 610	48 459 560	48 952 987												
Real terminal costs (EUR2009)	7 174 699	7 148 010	7 234 887	7 316 289	7 384 765												
Real gate-to-gate costs (EUR2009)	53 856 338	53 824 782	55 116 498	55 775 849	56 337 752												
En-route share (%)	86.7%	86.7%	86.9%	86.9%	86.9%												
Cyprus: Actual data from Reporting Tables																	
	2015A	2016A	2017A	2018A	2019A												
Real en-route costs (EUR2009)	47 336 521	46 851 861															
Real terminal costs (EUR2009)	6 785 608	6 511 543															
Real gate-to-gate costs (EUR2009)	54 122 129	53 363 404															
En-route share (%)	87.5%	87.8%															
Difference between Actuals and Planned (Actuals vs. PP)																	
	2015	2016	2017	2018	2019												
Real gate-to-gate costs (EUR2009)																	
in value	265 791	-461 379															
in %	0.5%	-0.9%															
En-route share																	
in p.p.	0.8%	1.1%															
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																	
<p>In 2016, actual gate-to-gate ANS costs are -0.9% (-0.5 M€2009) lower than planned due to the combination of higher en-route costs (+0.4%, or +0.2 M€2009) and lower terminal costs (-8.9%, or -0.6 M€2009) in real terms. However, in nominal terms, gate-to-gate ANS costs are -8.4.8 M€) lower than planned.</p> <p>As a result, the actual share of en-route in gate-to-gate ANS costs (87.8%) is slightly higher than planned in the PP for 2016 (86.7%).</p>																	
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%
Year	En-route (%)	Terminal (%)															
2015	83%	17%															
2016	85%	15%															
2017	82%	18%															
3. Technical notes on en-route and terminal information reported by Cyprus																	
<p>Note 1: According to the information provided in the additional information to the June 2017 terminal reporting tables - "Cyprus does not currently charge the Terminal Navigation Charge". As the TANS activities are therefore fully financed through "income from other sources", the analysis of the terminal economic surplus is void. Nevertheless, the analysis at Cyprus TCZ level still looks at the deviation between the terminal actual unit cost and the terminal DUC target reported for 2016 in the RP2 PP.</p>																	

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Greece

Version: 1.1

Date: 9 October 2017

GREECE

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	71	C	C	C	C	D
HANSP	75	D	D	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	97%	97%
Runway Incursions (RIs)	80%	80%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	HCAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	4	3
Occurrence reporting and Investigation	0	2
TOTAL	11	7
HANSP	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	8	0
TOTAL	21	3

Observations

All four reviewed EoS Components/areas are at the 2019 EoS target Level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

None of the 34 questions in Components 1-4 (not including Component - Safety Culture) are below Level C.

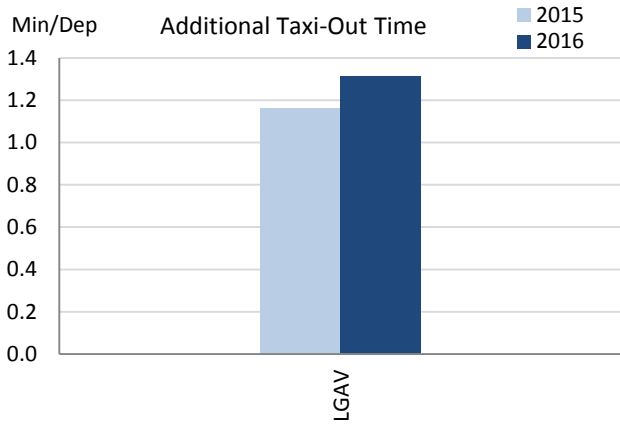
GREECE

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

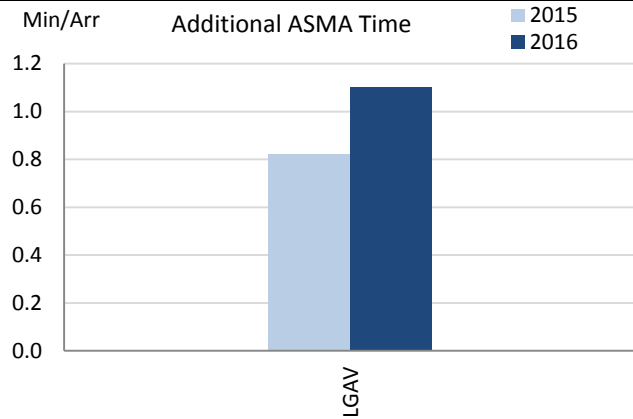
Operational ANS performance at airports is monitored for one airport in Greece (i.e. Athens, LGAV), the only airport subject to RP2. Athens shows lower additional times than other airports with the same levels of traffic, contributing adequately to the European performance.

2. Additional Taxi-Out Time



Despite the slight increase of additional taxi-out time in 2016, Athens still shows best in class behaviour when compared with airports with similar traffic. The seasonality does not affect this indicator, with a consistent performance throughout the year, even during the busiest periods.

3. Additional ASMA Time



The average additional ASMA time for Athens (1.10 min/arr.) is shorter than the one shown at airports with similar number of arrivals. However, this time has increased around 35% with respect to 2015, associated to an 8% increase in traffic.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Athens	LGAV	1.16	1.31				0.82	1.10			

GREECE

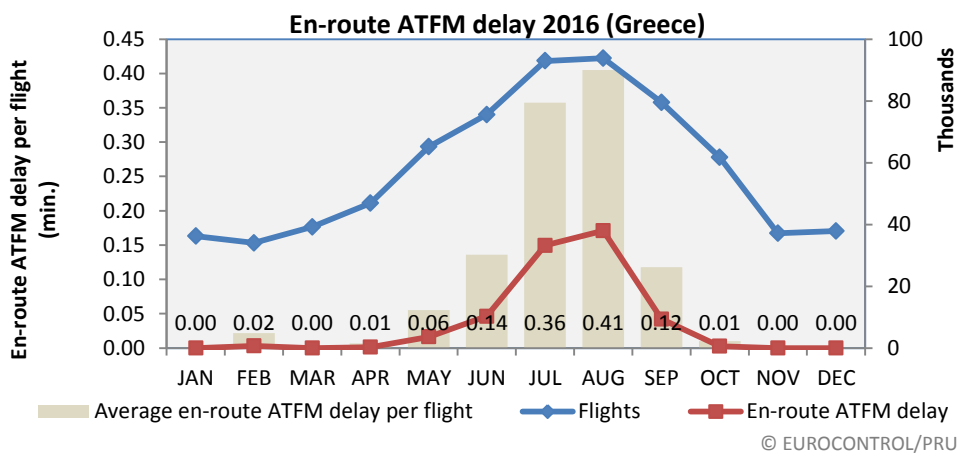
Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.70	1.40	1.00	0.60	0.50	
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.95	0.14				

National capacity incentive scheme
 No national incentive scheme

Compliance issues relating to national capacity incentive scheme
 Greece did not apply an incentive scheme for en route capacity. This was raised in the PRB assessment of the BLUEMED performance plan but was not addressed in the BLUE MED annual monitoring report.

Observations regarding national capacity performance



En-route ATFM delay per flight (Greece)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
1.47	1.12	1.00	2.95	0.15	0.06	0.41	0.95	0.14

En route capacity performance in Greece improved significantly during 2016 (0,14 min per flight) compared to 2015 (0,95 min per flight). This was in part due to additional sectors being available during peak periods (7 in Athens ACC in 2016 compared with 5 in 2015 and 4 in Makedonia ACC in 2016 compared with 3 in 2015). In the latest NOP 2017 -2021, the Network Manager expects capacity shortfalls during 2017 which will improve towards the end of RP2.

Planning and Effective Use of CDRs
 Greece did not provide any data on these indicators.

Observations on Planning and Effective Use of CDRs
 It is noted that Greece like many other States, is having difficulties in monitoring the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures
 The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 94%.
 Procedure 3 is applicable within the State with 100% usage of airspace booked via UUP process.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

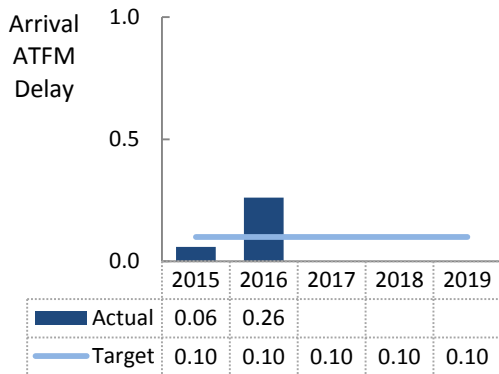
GREECE

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Greece, Athens (LGAV) is the only airport subject to RP2. The national target on arrival ATFM delay coincides with the local reference value of Athens airport. A significant increase of arrival ATFM delay (2015: 0.06 min/arr., 2016: 0.26 min/arr.) has been observed in 2016.

2. Arrival ATFM Delay



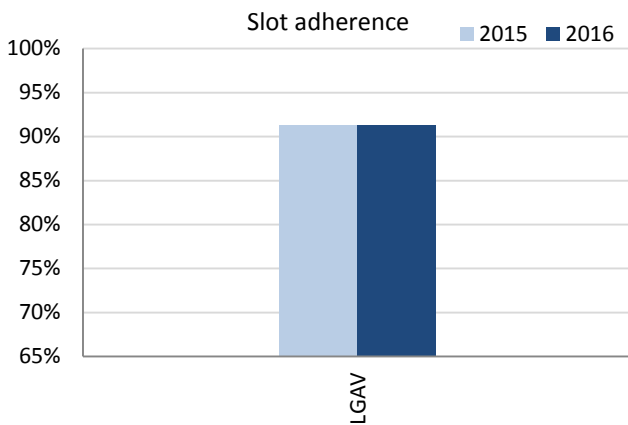
Average arrival ATFM delay increased significantly at Athens (LGAV) to 0.26 min/arr. in 2016. The main driver for this increase are the reported ATC capacity related constraints during the summer months (i.e. July, August, and to a lower level September). While a similar seasonal increase has been observed in 2015, the overall performance was significantly higher.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Greece has established an ambitious local value for Athens (LGAV) of 0.10 min/arr. which reflects the national target (LGAV being the only airport subject to RP2). With a performance of 0.26 min/arr., the target is not met.

Greece does not present an incentive scheme.

4. ATFM Slot Adherence



Athens (LGAV) shows a stable performance in terms of compliance with ATFM slots of 91.3% in 2015 and 2016. With this performance, LGAV ranges slightly above the 90% threshold.

5. Pre-departure Delay

The Airport Operator Data Flow has been established for LGAV during the course of 2015. The observed performance for the first full year of monitoring ranges on average 0.2 min/dep. higher in 2016.

There has been a significant increase in pre-departure delay at LGAV as of April 2016 for the rest of the year resulting in the yearly average of 0.75 min/dep. in 2016.

6. Appendix

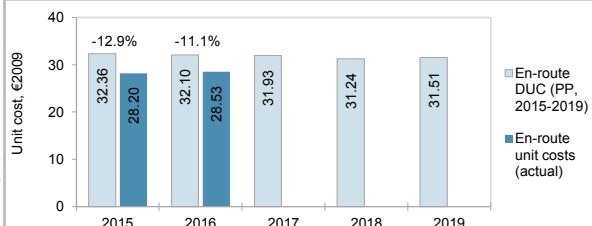
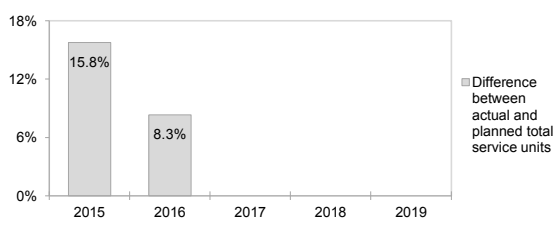
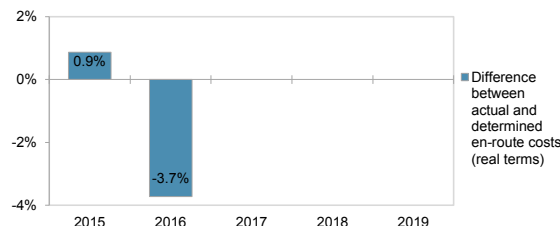
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Athens	LGAV	0.06	0.26				91.3%	91.3%				0.54	0.75			

GREECE: En-route charging zone

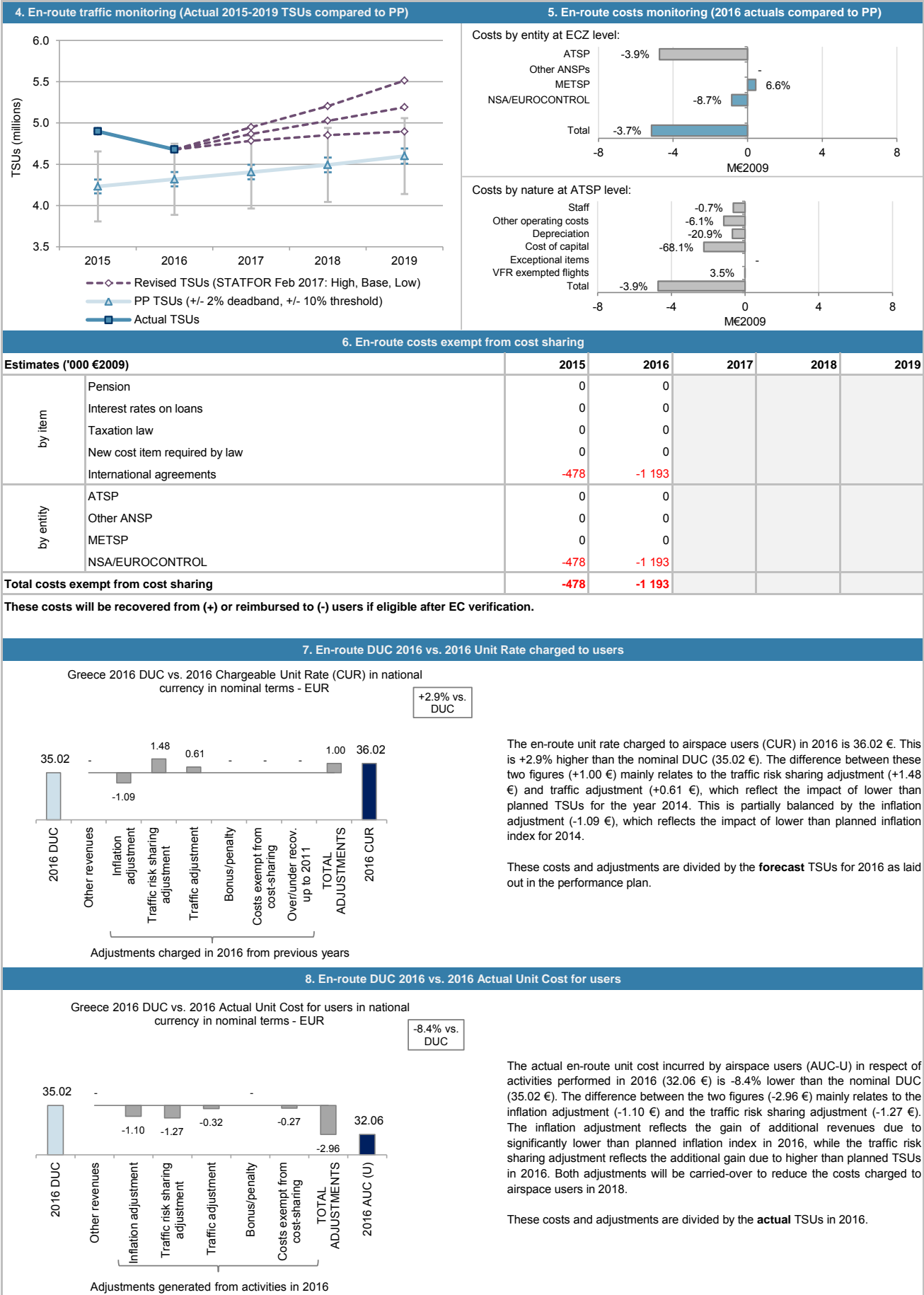
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Greece ECZ represents 2.2% of the SES en-route ANS determined costs in 2016						
· ATSP: HCAA						
· FAB: BLUE MED FAB						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Greece: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		147 841 464	151 226 557	155 317 991	156 939 780	164 629 376
Inflation %		0.3%	1.1%	1.2%	1.3%	1.6%
Inflation index (100 in 2009)		107.9	109.1	110.4	111.8	113.6
Real en-route costs (EUR2009)		136 958 572	138 630 543	140 635 901	140 350 008	144 936 752
Total en-route Service Units		4 231 888	4 318 281	4 404 929	4 492 622	4 599 834
Real en-route unit cost per Service Unit (EUR2009)		32.36	32.10	31.93	31.24	31.51
Greece: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		145 550 899	140 632 309			
Inflation %		-1.1%	0.0%			
Inflation index (100 in 2009)		105.4	105.4			
Real en-route costs (EUR2009)		138 146 953	133 478 564			
Total en-route Service Units		4 898 818	4 678 399			
Real en-route unit cost per Service Unit (EUR2009)		28.20	28.53			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-2 290 565	-10 594 248			
	in %	-1.5%	-7.0%			
Inflation %	in p.p.	-1.4 p.p.	-1.1 p.p.			
	in p.p.	-2.6 p.p.	-3.7 p.p.			
Real en-route costs (EUR2009)	in value	1 188 381	-5 151 979			
	in %	0.9%	-3.7%			
Total en-route Service Units	in value	666 930	360 118			
	in %	15.8%	8.3%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-4.16	-3.57			
	in %	-12.9%	-11.1%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (28.53 €2009) is -11.1% lower than planned in the PP (32.10 €2009). This difference results from the combination of higher than planned TSUs (+8.3%) and lower than planned en-route costs in real terms (-3.7%, or -5.2 M€2009).						
En-route service units						
The difference between actual and planned TSUs (+8.3%) falls outside the ±2% dead band, but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues is therefore shared between the ATSP and the airspace users, the former retaining a gain of 4.9 M€2009.						
Based on the STATFOR February 2017 <u>base</u> TSU growth scenario, Greece en-route TSUs deviation from the RP2 forecasts is expected to exceed the +10% threshold for the rest of RP2 (2017-2019). It is noted that the determined TSUs underpinning the adopted RP2 cost-efficiency targets were in line with STATFOR February 2014 <u>low</u> TSU growth scenario for all years of RP2 (2015-2019).						
En-route costs						
In nominal terms, actual en-route costs are -7.0% (-10.6 M€) lower than planned in the PP. However, since the actual inflation index is also lower than planned (-3.7 p.p.), actual en-route costs are -3.7% (-5.2 M€2009) lower than planned when expressed in real terms.						
Lower than planned en-route costs in real terms are mainly driven by HCAA costs (-3.9%, or -4.7 M€2009) and, to a lesser extent, by the NSA/EUROCONTROL costs (-8.7%, or -0.9 M€2009). Differently, the MET service provider costs are higher than planned in real terms (+6.6%, or +0.4 M€2009). A detailed analysis at ATSP level is provided in Box 12.						
Costs exempt from cost sharing are reported for a total amount of -1.2 M€2009 comprising the variation in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.						



GREECE: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



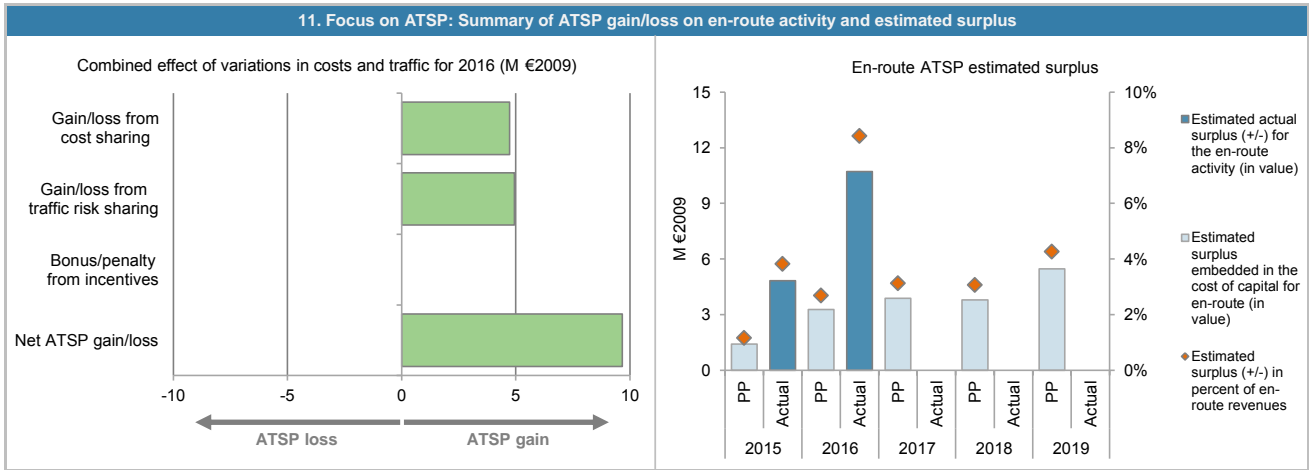
GREECE: En-route ATSP (HCAA)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	120 824	122 261			
Actual costs for the ATSP	121 884	117 535			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-1 060	4 727			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-1 060	4 727			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	15.8%	8.3%			
Determined costs for the ATSP (PP) - based on actual inflation	123 791	126 586			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	5 447	4 939			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 387	9 666			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	15 891	36 938	43 733	42 692	61 610
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	15 891	36 938	43 733	42 692	61 610
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	1 413	3 284	3 888	3 795	5 477
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 413	3 284	3 888	3 795	5 477
Overall estimated surplus (+/-) for the en-route activity	1 413	3 284	3 888	3 795	5 477
Revenue/costs for the en-route activity	120 824	122 261	124 133	123 747	128 286
Estimated surplus (+/-) in percent of en-route revenues	1.2%	2.7%	3.1%	3.1%	4.3%
Estimated ex-ante RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	4 983	11 770			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	4 983	11 770			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	443	1 046			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	8.9%	8.9%			
Estimated surplus embedded in the cost of capital for en-route (in value)	443	1 046			
Net ATSP gain(+)/loss(-) on en-route activity	4 387	9 666			
Overall estimated surplus (+/-) for the en-route activity	4 830	10 712			
Revenue/costs for the en-route activity	126 271	127 201			
Estimated surplus (+/-) in percent of en-route revenues	3.8%	8.4%			
Estimated ex-post RoE pre-tax rate (in %)	96.9%	91.0%			

GREECE: En-route ATSP (HCAA)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 HCAA en-route costs vs. PP

In 2016, HCAA actual en-route costs are -3.9% (-4.7 M€2009) lower, in real terms, than planned in the PP. According to the additional information to the June 2017 en-route reporting tables, this results from the combination of:

- slightly lower staff costs (-0.7%, or -0.6 M€2009) in real terms;
- lower other operating costs (-6.1%, or -1.2 M€2009) in real terms, mainly justified by lower costs related to travel expenses, repair and maintenance, utilities etc.;
- lower depreciation costs (-20.9%, or -0.7 M€2009) in real terms; and,
- a lower cost of capital (-68.1%, or -2.2 M€2009) in real terms, reflecting "the implementation of the investment plan". Based on the information provided in the BLUE MED FAB Monitoring Report 2016, the actual capex for 2016 in nominal terms is much lower (-72.7%) than planned in PP.

HCAA net gain/loss on en-route activity in 2015

As shown in Box 9, HCAA generated a net gain of +9.7 M€2009 on the en-route activity in 2016. This is a combination of two elements:

- a gain of +4.7 M€2009 arising from the cost sharing mechanism; and,
- a gain of +4.9 M€2009 arising from the traffic risk sharing mechanism.

HCAA overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity (+9.7 M€2009) and the surplus embedded in the actual cost of capital (+1.0 M€2009) amounts to +10.7 M€2009 (8.4% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is +91.0%, which is significantly higher than planned in the PP (+8.9%). It is noted, that the actual asset base reported for HCAA (11.8 M€2009) is -68.1% lower than planned (36.9 M€2009) in real terms.

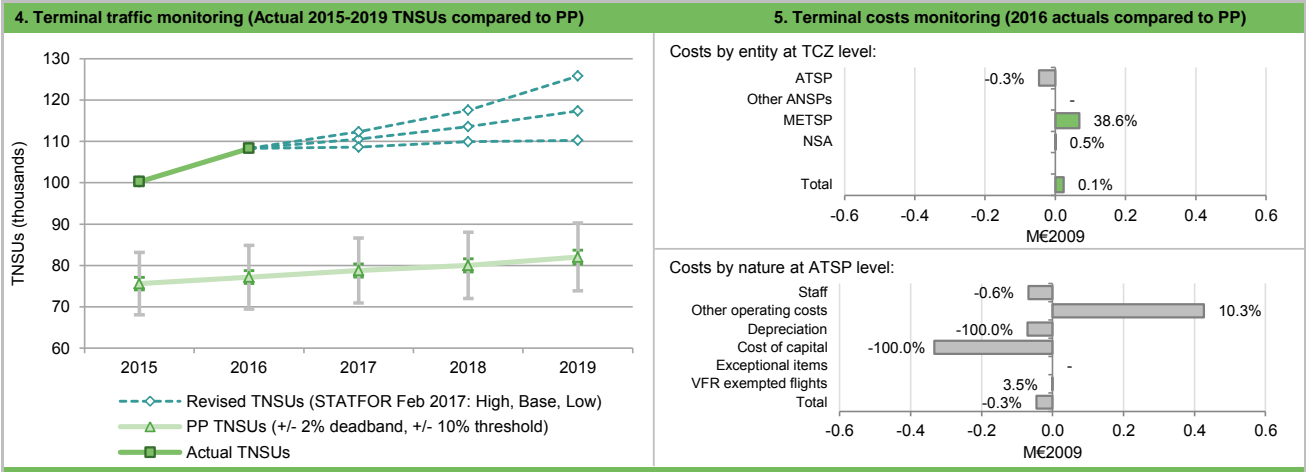
GREECE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
Greece TCZ represents 1.4% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		No		
ATSP:	HCAA	Airports with fewer than 70,000 IFRs ATMs:		0		
National currency:	EUR	Airports with between 70,000 and 225,000 IFRs ATMs:		1		
Number of airports in charging zone in 2016:	1,	of which:		Airports with more than 225,000 IFRs ATMs: 0		
2. Terminal DUC monitoring at Charging Zone level						
Greece: Data from RP2 Performance Plan						
		2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)		17 173 869	17 398 050	18 378 066	18 168 294	20 342 644
Inflation %		0.3%	1.1%	1.2%	1.3%	1.6%
Inflation index (100 in 2009)		107.9	109.1	110.4	111.8	113.6
Real terminal costs (EUR2009)		15 909 668	15 948 926	16 640 801	16 247 762	17 909 299
Total terminal Service Units		75 618	77 174	78 781	80 031	82 050
Real terminal unit cost per Service Unit (EUR2009)		210.40	206.66	211.23	203.02	218.27
Greece: Actual data from Reporting Tables						
		2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)		17 209 550	16 828 787			
Inflation %		-1.1%	0.0%			
Inflation index (100 in 2009)		105.4	105.4			
Real terminal costs (EUR2009)		16 334 127	15 972 733			
Total terminal Service Units		100 249	108 300			
Real terminal unit cost per Service Unit (EUR2009)		162.94	147.49			
Difference between Actuals and Planned						
		2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value	35 681	-569 263			
	in %	0.2%	-3.3%			
Inflation %	in p.p.	-1.4 p.p.	-1.1 p.p.			
Inflation index (100 in 2009)	in p.p.	-2.6 p.p.	-3.7 p.p.			
Real terminal costs (EUR2009)	in value	424 460	23 808			
	in %	2.7%	0.1%			
Total terminal Service Units	in value	24 631	31 126			
	in %	32.6%	40.3%			
Real terminal unit cost per Service Unit (EUR2009)	in value	-47.46	-59.18			
	in %	-22.6%	-28.6%			
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Greece Terminal Charging Zone (TCZ) comprising only Athinaï / Eleftherios Venizelos (LGAV) airport.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (147.49 €2009) is -28.6% lower than planned in the RP2 PP (206.66 €2009). The difference results from the combination of significantly higher than planned TNSUs (+40.3%) and slightly higher than planned terminal costs in real terms (+0.1%, or +0.02 M€2009), although the costs are lower than planned in nominal terms (-3.3%, or -0.6 M€).</p> <p>Terminal service units Greece does not apply the traffic risk sharing mechanism in its TCZ. The actual TNSUs in Greece TCZ are significantly higher (+40.3%) than planned in the RP2 PP. Based on the STATFOR February 2017 base TNSU growth scenario, Greece TNSUs are expected to abundantly exceed the TNSUs planned in the PP for the remainder of RP2. It should be noted that the forecast TNSUs selected in the RP2 PP are in line with the STATFOR February 2014 base case TNSU growth scenario. According to EUROCONTROL seven-year forecast of September 2016, the potential driver for this increase is the adverse travel advice for North-African States (Egypt and Tunisia) and Turkey which are shifting tourism overall towards Iberia and Greece.</p> <p>Terminal costs In nominal terms, the actual terminal costs are lower than planned in the PP (-3.3%, or -0.6 M€). However, since the actual inflation index is also lower than planned (-3.7 p.p.), the actual terminal costs are +0.1% (+0.02 €2009) above planned, when expressed in real terms.</p> <p>The lower than planned inflation index implies a change of sign from lower costs in nominal terms to higher costs in real terms as compared to the PP. This is true for NSA costs (+0.5% in real terms, but -2.9% in nominal). For HCAA the actual costs are lower than planned (-0.3%, or -0.05 M€2009) in both, real and nominal terms. Similarly, costs for MET service provider are higher than planned (+38.6%, or +0.07 M€2009) in both, real and nominal terms. A detailed analysis at ATSP level is provided in Box 12.</p> <p>It is noted that Greece did not report actual depreciation costs or actual cost of capital for 2016, while such costs were included in their 2016 determined cost-base for RP2 (see also Note 1 at the end of this Report).</p> <p>No costs exempt from cost sharing are reported for Greece TCZ.</p>						

GREECE: Terminal charging zone

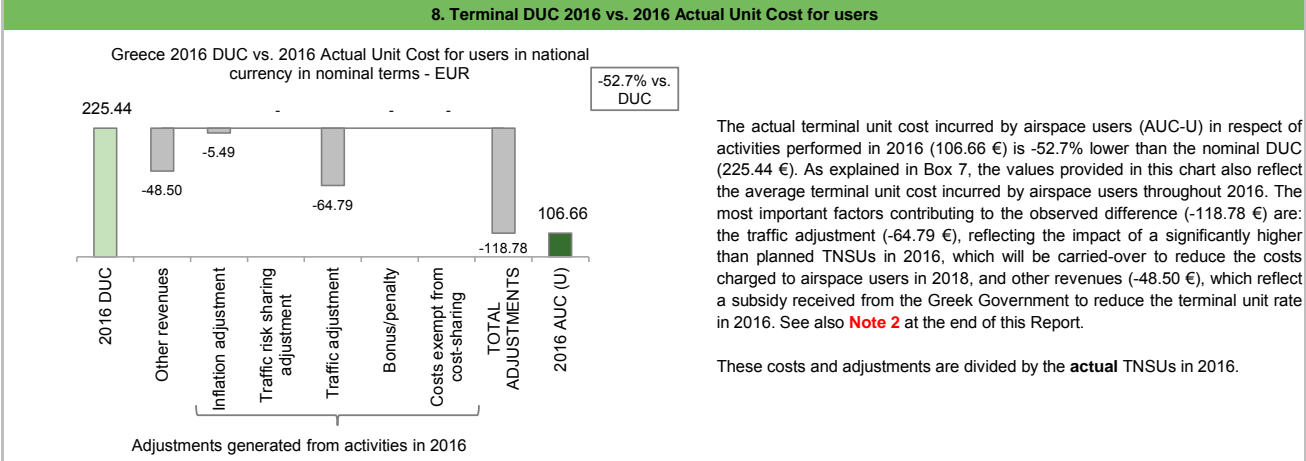
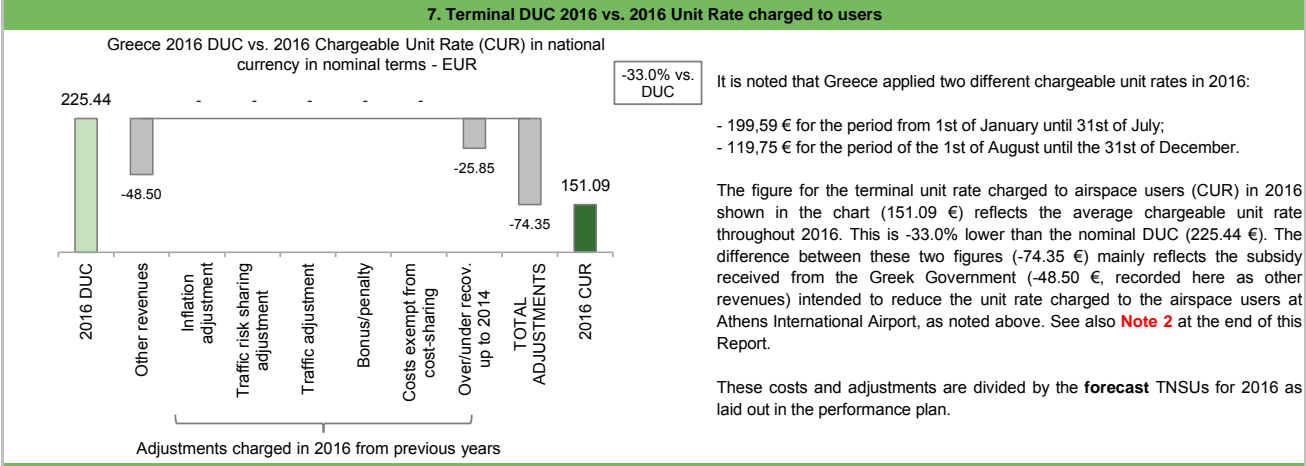
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



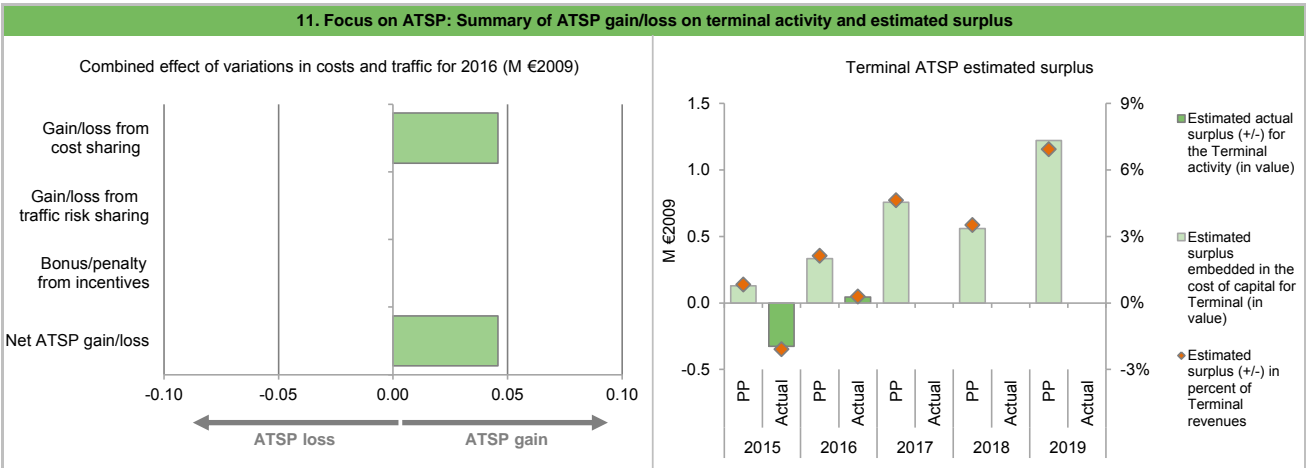
GREECE: Terminal ATSP (HCAA)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	15 602	15 645			
Actual costs for the ATSP	15 928	15 599			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-326	46			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-326	46			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-326	46			
10. Focus on ATSP: Terminal ATSP estimated surplus* (See Note 1)					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 448	3 745	8 513	6 297	13 724
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	1 448	3 745	8 513	6 297	13 724
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	129	333	757	560	1 220
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
Estimated surplus embedded in the cost of capital for terminal (in value)	129	333	757	560	1 220
Overall estimated surplus (+/-) for the terminal activity	129	333	757	560	1 220
Revenue/costs for the terminal activity	15 602	15 645	16 340	15 951	17 617
Estimated surplus (+/-) in percent of terminal revenues	0.8%	2.1%	4.6%	3.5%	6.9%
Estimated ex-ante RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	0	0			
Estimated proportion of financing through equity (in %)	-	-			
Estimated proportion of financing through equity (in value)	0	0			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	0	0			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	-	-			
Estimated surplus embedded in the cost of capital for terminal (in value)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity	-326	46			
Overall estimated surplus (+/-) for the terminal activity	-326	46			
Revenue/costs for the terminal activity	15 602	15 645			
Estimated surplus (+/-) in percent of terminal revenues	-2.1%	0.3%			
Estimated ex-post RoE pre-tax rate (in %)					

GREECE: Terminal ATSP (HCAA)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 HCAA terminal costs vs. PP

The HCAA actual terminal cost, when expressed in real terms, are mostly in line (-0.3%, or -0.05 M€2009) with the planned values. However, this is mainly due to a lower than planned inflation index (-3.7 p.p.), as actual terminal costs are lower than planned in nominal terms (-3.7%, or -0.6 M€). This results from a combination of:

- slightly lower staff costs (-0.6%, or -0.1 M€2009); and,
- higher other operating costs (+10.3%, or +0.4 M€2009).

No drivers underlying the deviation of costs outlined above are provided in the additional information to the June 2017 terminal reporting tables or the BLUE MED FAB 2016 Monitoring Report.

It is noted that Greece did not report any actual terminal depreciation costs or cost of capital for 2016, while such costs were included in the RP2 PP (see also **Note 1** at the end of this Report).

HCAA 2016 net gain/loss on terminal activity

As shown in Box 9, the terminal activity generated a net gain of +0.05 M€2009 in 2016 as a result of the cost sharing mechanism.

HCAA 2015 overall estimated surplus for the terminal activity

As Greece did not report any asset base or cost of capital for the terminal activity in 2016, no surplus could be computed (see also **Note 1** at the end of this Report).

GREECE: Gate-to-gate

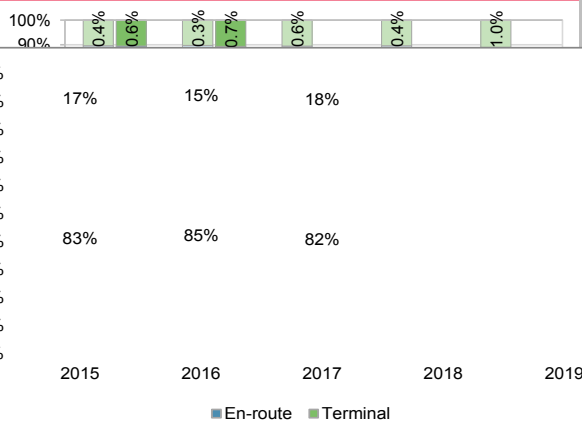
Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Greece: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	136 958 572	138 630 543	140 635 901	140 350 008	144 936 752
Real terminal costs (EUR2009)	15 909 668	15 948 926	16 640 801	16 247 762	17 909 299
Real gate-to-gate costs (EUR2009)	152 868 239	154 579 468	157 276 702	156 597 770	162 846 051
En-route share (%)	89.6%	89.7%	89.4%	89.6%	89.0%
Greece: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	138 146 953	133 478 564			
Real terminal costs (EUR2009)	16 334 127	15 972 733			
Real gate-to-gate costs (EUR2009)	154 481 080	149 451 297			
En-route share (%)	89.4%	89.3%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	1 612 840	-5 128 172			
in %	1.1%	-3.3%			
En-route share					
in p.p.	-0.2%	-0.4%			

2. Share of en-route and terminal in gate-to-gate actual costs (2016)

In 2016, actual gate-to-gate ANS costs are -3.3% lower (-5.1 M€2009) than planned in real terms, due to the combination of lower en-route costs (-3.7%, or -5.2 M€2009) and slightly higher terminal costs (+0.1%, or +0.02 M€2009).

The actual share of en-route in gate-to-gate ANS costs (89.3%) is slightly lower than planned in the PP for 2016 (89.7%).



3. Technical notes on en-route and terminal information reported by Greece

Note 1: for the 2016 terminal actual costs, Greece reported zero actual costs for depreciation, cost of capital and the ATSP’s asset base (HCAA) in the June 2017 submission of terminal reporting tables. Based on the additional information provided with the terminal reporting tables this is due to:

“Regarding year 2016, no asset base and related depreciation costs are reported since all fixed assets in operation which are used for the provision of ATS in the terminal navigation charging zone have been fully depreciated and the implementation of the investment plan has been delayed due to the austerity measures and the unstable economic situation in Greece. In addition to that, HCAA does not report any net current assets for the calculation of the total asset base. Moreover, since planned cost of capital regarding the terminal charging zone reflects the investment plan implementation as well as the CAPEX of 2016 and since no cost of capital is calculated on already depreciated assets, actual cost of capital for the year 2016 is reported as Zero.”

Note 2: the additional information to the June 2017 terminal reporting tables indicates that in 2016 the Greek Government decided to apply “a subsidization of the terminal unit rate has also been decided by the Greek Government for 2016 which resulted in a discounted unit rate of € 119,75 for the period of the 1st of August until the 31st of December 2016 in comparison to the unit rate of €199,59, a rate which was applied for the first seven months of 2016.”

This subsidy resulted in a reduced terminal unit rate charged to the airspace users at Athens International Airport.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Italy

Version: 1.1

Date: 9 October 2017

ITALY

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	63	C	C	C	C	B
ENAV	77	D	D	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	ENAV	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	3	6
Legal/Judiciary	4	3
Occurrence reporting and Investigation	2	0
TOTAL	9	9
ENAV	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	21	3

Observations

All four reviewed EoSM Components/areas achieved the 2019 EoSM target Level "C". The only component below the target is Safety Culture, which is not verified by EASA. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

None of the 34 questions in Components 1-4 (not including Component - Safety Culture) are below Level C.

ITALY

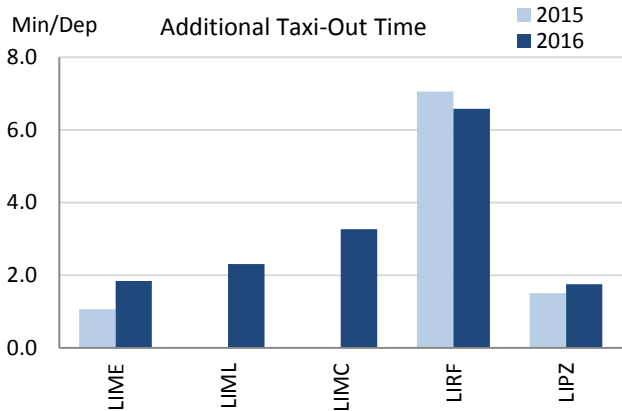
Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Italy identified five airports as subject to RP2. In 2016 the APDF was finally correctly established and the environmental indicators can be analysed for all five airports.

In a similar way to last year, Italian airports contribute to the European performance with additional times below the European averages, except for additional taxi-out times at Rome Fiumicino ranging above 6 minutes.

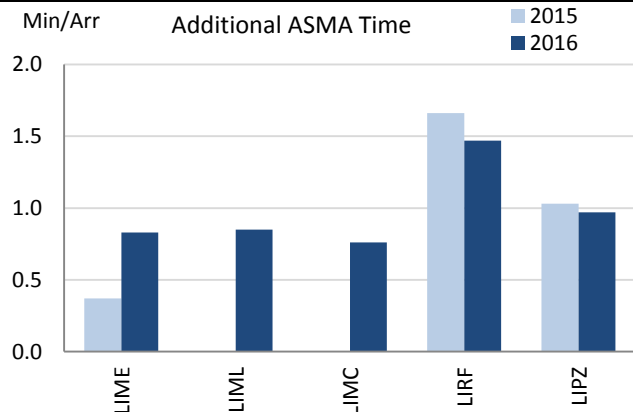
2. Additional Taxi-Out Time



Bergamo and Venice show an increase in the additional taxi-out times with respect to 2015, although still below the 2 min/dep. At Bergamo airport, and although the departures only increased 5% in 2016, Italian NSA reports a strong increase in morning peak traffic and associated pushback manoeuvres. Milan airports show a performance commensurate with their level of traffic. Rome Fiumicino has marginally reduced the additional TXOT with respect to 2015, but it is still the third highest in Europe.

Italian NSA reports that many works were carried out at the Fiumicino movement area and these did not adversely affect the overall performance of the airport, in fact there was a clear recovery compared to the poor performance of the previous year, when two fires (in Terminal 3 and in the pinewood outside the airport) affected significantly the normal operations.

3. Additional ASMA Time



Additional ASMA times at Italian airports are consistently well below the average for RP2 airports and in Fiumicino case, show best in class performance. In addition, the additional times in the terminal area have been reduced at LIRF and LIPZ in 2016. On the other hand, LIME has experienced a drastic increase, resulting in more than double of the additional ASMA times in 2015.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bergamo	LIME	1.06	1.84				0.37	0.83			
Milan/ Linate	LIML	n/a	2.31				n/a	0.85			
Milan/ Malpensa	LIMC	n/a	3.27				n/a	0.76			
Rome/Fiumicino	LIRF	7.06	6.58				1.66	1.47			
Venice	LIPZ	1.50	1.75				1.03	0.97			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.09	0.10	0.11	0.11	0.11	
Deadband +/-	Nil	Nil	Nil	Nil	Nil	
Actual performance	0.01	0.00				

National capacity incentive scheme

Nothing was provided in the initial BLUEMED monitoring report, however the update to this report on 16/06 contained the following information:

For what concerns en route, the incentive scheme relates to the Capacity KPI “The average minutes of en route ATFM delay per flight”. It takes into consideration the reference values provided by NM and PRB as adequate contribution (based on NOP, LSSIP Italy, Capacity Plans), specifically 0,10 min/flight in 2016 and is symmetrical and incremental. It takes into account all en-route ATFM delay causes excluding exceptional events and has a maximum level at 1% of the revenue from en route ANS.

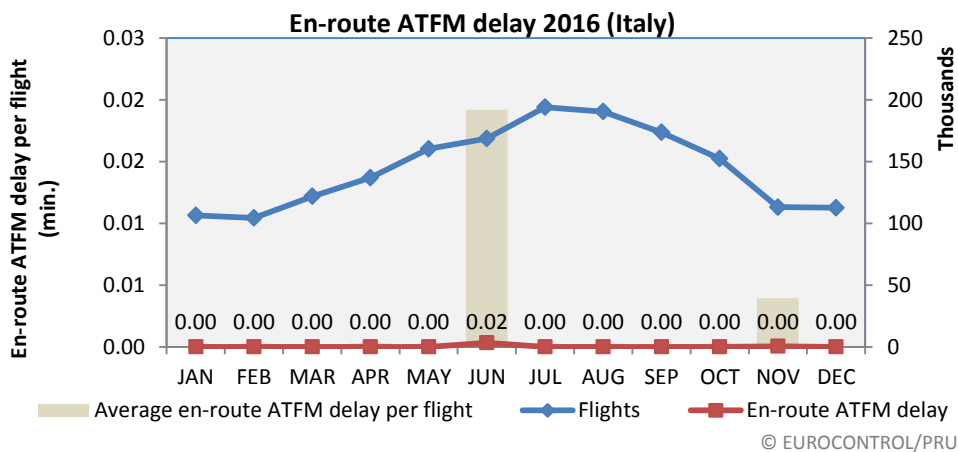
For 2016, ENAV has achieved a level of delay of 0,002 min/flight. According to the applied scheme the level of bonus recognised to ENAV is of 5,9 mln€ in the measure of the 1% of en route revenues.

Compliance issues relating to national capacity incentive scheme

Previously, the PRB noted several compliance issues relating to the en route capacity incentive schemes proposed in the BLUEMED revised performance plan, some relating directly to Italy, in the assessment of the RP2 FAB Performance Plans - BLUEMED. One compliance issue concerned the fact that FAB performance was not a specific criterion and another referred to the fact that the incentive scheme proposed by Italy uses capacity targets without supporting evidence to show how they are consistent with the required FAB performance, and therefore they could not be considered as fostering a high level of FAB performance.

The BLUEMED monitoring report contained no information as to how the previous raised compliance issues had been addressed.

Observations regarding national capacity performance



En-route ATFM delay per flight (Italy)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.05	0.01	0.01	0.01	0.00	0.00	0.02	0.01	0.00

En route capacity performance in Italy in 2016 resulted in effectively zero ATFM delay for airspace users in 2016, continuing the excellent performance for previous years. It is expected that similar capacity performance can continue for the rest of RP2.

Planning and Effective Use of CDRs

Italy did not provide any data on this indicator.

Observations on Planning and effective Use of CDRs

It is noted that Italy, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

No data was provided by Italy on this indicator.

Observations on Effective booking procedures

Italy is reminded that Regulation 2150/2005 Article 4 (n) obliges Member States to “establish mechanisms to archive data on the requests, allocation and actual use of airspace structures for further analysis and planning activities.”

ITALY

Monitoring of Airports Contribution to CAPACITY for 2016

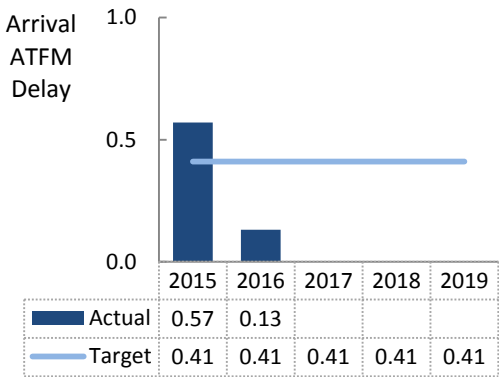
1. Overview

In Italy, a total of 5 airports are subject to RP2. A national target is set for all causes with local breakdown for all the airports.

The national performance is strongly driven by the performance of ANS at Rome/Fiumicino (LIRF). Significant improvements in terms of average arrival ATFM delay (2015: 1.22 min/arr., 2016: 0.23 min/arr.) and average pre-departure delay (2015: 3.03 min/dep., 2016: 2.35 min/dep.) have been observed in LIRF. Average arrival ATFM delay also improved at Venice (LIPZ; 2015: 0,39 min/arr., 2016: 0,27 min/arr.).

These changes positively impact the national averages.

2. Arrival ATFM Delay



Arrival ATFM delay at Rome/Fiumicino improved significantly in 2016 by one minute per flight (2015: 1.22 min/arr., 2016: 0.23 min/arr.). Being the major hub in Italy and driver for the national average, the overall performance in terms of arrival ATFM delay respectively decreased in 2016 by 77% (2015: 0.57 min/arr., 2016: 0.13 min/arr.)

LIRF shows a best in class performance for an airport with more than 300000 movements per year.

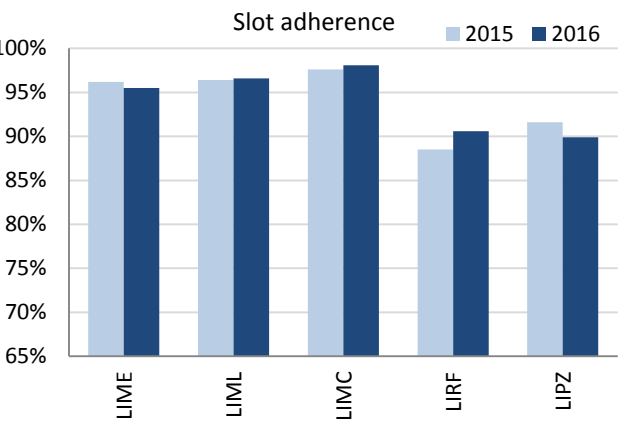
The actual average arrival ATFM delay of 0.13 min/arr. for Italy ranges well below the established national target (all causes) of 0.41 min/arr.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The actual national performance on arrival ATFM delay (0.13 min/arr.) ranges well below the established national target of 0.41 min/arr. in 2016.

Italy presents an incentive scheme based on the arrival ATFM delay per flight including only CRSTMP causes. The target for reasons attributable to ENAV is 0.02 minutes/flight, which was met with a result of 0.00 min/flight. Accordingly, ENAV will receive a bonus.

4. ATFM Slot Adherence



On average, adherence to ATFM slots in Italy remained unchanged in 2016.

Slot adherence improved at Rome/Fiumicino (2015: 88.5%, 2016: 90.5%) by approximately 2% while a slightly lower decrease of compliance with the ATFM slot has been observed at Venice (2015: 91.6%, 2016: 89.9%).

5. Pre-departure Delay

Following the establishment of the Airport Operator Data Flow at Milan/Linate (LIML) and Milan/Malpensa (LIMC) in 2016, the monitoring of pre-departure delay is enabled at all Italian airports. Nonetheless there is a high share of unreported delay at LIML which requires further validation.

On average, the pre-departure delay performance at Bergamo (LIME) and Venice (LIPZ) remained constant. Pre-departure delay at Rome/Fiumicino improved significantly (i.e. 23%) from 3.03 min./arr. in 2015 to 1.54 min/arr. in 2016.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bergamo	LIME	0.03	0.01				96.2%	95.5%				0.73	0.74			
Milan/ Linate	LIML	0.06	0.02				96.4%	96.6%				n/a	0.36			
Milan/ Malpensa	LIMC	0.02	0.02				97.6%	98.1%				n/a	0.48			
Rome/Fiumicino	LIRF	1.22	0.23				88.5%	90.6%				3.03	2.35			
Venice	LIPZ	0.39	0.27				91.6%	89.9%				1.57	1.54			

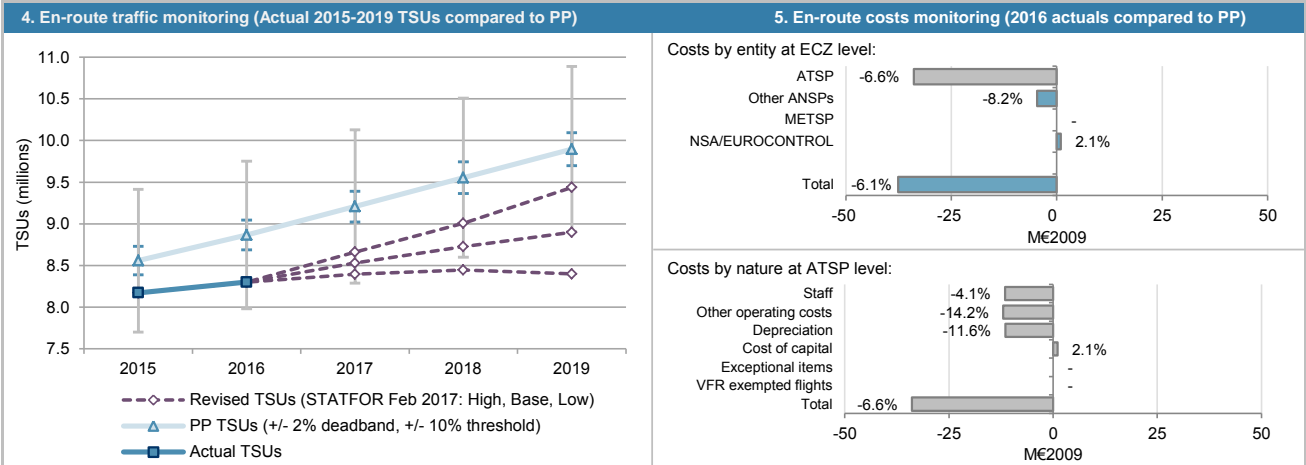
ITALY: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Italy ECZ represents 10.0% of the SES en-route ANS determined costs in 2016 ATSP: ENAV FAB: BLUE MED FAB National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Italy: Data from RP2 Performance Plan (EC Decision 2016/599 of 15 April 2016)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		674 742 285	693 557 255	711 992 044	710 883 664	707 016 612
Inflation %		1.0%	1.1%	1.3%	1.5%	1.6%
Inflation index (100 in 2009)		110.8	112.0	113.5	115.2	117.0
Real en-route costs (EUR2009)		609 005 804	619 176 790	627 477 336	617 241 895	604 216 765
Total en-route Service Units		8 557 964	8 866 051	9 207 393	9 553 591	9 897 521
Real en-route unit cost per Service Unit (EUR2009)		71.16	69.84	68.15	64.61	61.05
Italy: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		644 872 816	637 727 794			
Inflation %		0.1%	-0.1%			
Inflation index (100 in 2009)		109.8	109.7			
Real en-route costs (EUR2009)		587 471 424	581 543 938			
Total en-route Service Units		8 171 509	8 299 670			
Real en-route unit cost per Service Unit (EUR2009)		71.89	70.07			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-29 869 469	-55 829 462			
	in %	-4.4%	-8.0%			
Inflation %	in p.p.	-0.9 p.p.	-1.2 p.p.			
Inflation index (100 in 2009)	in p.p.	-1.0 p.p.	-2.4 p.p.			
Real en-route costs (EUR2009)	in value	-21 534 381	-37 632 852			
	in %	-3.5%	-6.1%			
Total en-route Service Units	in value	-386 455	-566 380			
	in %	-4.5%	-6.4%			
Real en-route unit cost per Service Unit (EUR2009)	in value	0.73	0.23			
	in %	1.0%	0.3%			
3. Focus on en-route at State/Charging Zone level						
<p>En-route unit cost In 2016, the actual en-route unit cost in real terms (70.07 €2009) is +0.3% higher than planned in the PP (69.84 €2009). This difference results from the combination of lower than planned TSUs (-6.4%) and lower than planned en-route costs in real terms (-6.1%, or -37.6 M€2009). In terms of corrective measures, the BLUE MED FAB 2016 Monitoring Report indicates that Italy has implemented "significant efforts in terms of cost containment actions [...] has allowed to absorb the inflation effect [...], and the traffic effect [...] Therefore Italy has achieved a result that is in line (+0,3%) with the target."</p> <p>En-route service units The difference between actual and planned TSUs (-6.4%) falls outside the ±2% dead band, but is inside the -10% threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of en-route revenues is therefore shared between the ATSP and the airspace users, with the loss borne by the ATSP amounting to -17.1 M€2009. According to the additional information provided in June 2017 en-route reporting tables, the lower than planned TSUs were primarily driven by "socio-political situation in the North African area, characterized by the enduring of the closure of Libyan airspace" and "socio-political instability of countries such as Egypt, Tunisia and Turkey, which has led to the shift of traffic flows to other areas that do not foresee the overflow of the Italian airspace". According to STATFOR February 2017 base TSU growth scenario, the en-route TSUs for Italy are expected to be significantly below planned for the remainder of RP2, but still within the -10% threshold. It is noted that the determined TSUs underpinning the adopted RP2 cost-efficiency targets were slightly above the STATFOR February 2015 base TSU growth scenario for all years of RP2 (2015-2019) at the time of PP adoption.</p> <p>En-route costs In nominal terms, actual en-route costs are -8.0% (-55.8 M€) lower than planned. However, since the actual inflation index is also lower than planned (-2.4 p.p.), actual en-route costs are -6.1% (-37.6 M€2009) below plans when expressed in real terms. Lower than planned en-route costs in real terms are primarily driven by lower costs for ENAV (-6.6%, or -33.9 M€2009) and ITAF (-8.2%, or -4.7 M€2009). Differently, higher than planned costs were reported for NSAEUROCONTROL (+2.1%, or +1.0 M€2009). It is noted, that in nominal terms, actual costs for NSAEUROCONTROL are actually in line with planned values, however, are higher when expressed in real terms due to the lower than planned inflation index. A detailed analysis at ATSP level is provided in Box 12. Costs exempt from cost-sharing are reported for a total amount of -0.002 M€2009 comprising the variation in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						

ITALY: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



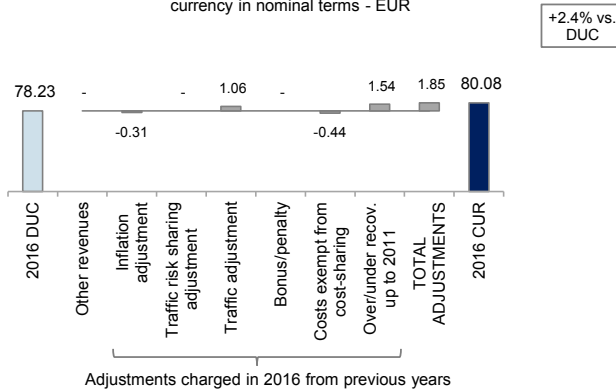
6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-169	-2			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-169	-2			
Total costs exempt from cost sharing		-169	-2			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Italy 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

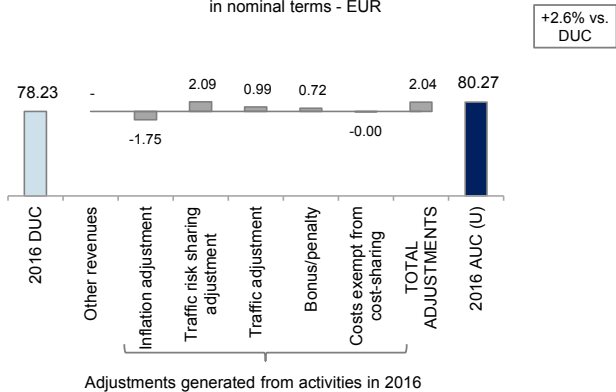


The en-route unit rate charged to airspace users (CUR) in 2016 is 80.08 €. This is +2.4% higher than the nominal DUC (78.23 €). The difference between these two figures (+1.85 €) mainly relates to the under-recovery generated in 2015 due to temporary application of a lower unit rate, which was retroactively revised in application of the EC Implementing Decision No. 2016/599 (+1.54 €, reported as "over/under recov. up to 2011" in the chart), and traffic adjustment (+1.06 €), which reflects the impact of lower than planned TSUs for the year 2014. This is slightly balanced by inflation adjustment (-0.31 €), reflecting lower than planned inflation index for 2014, and costs exempt from cost-sharing (-0.44 €).

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the performance plan.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Italy 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



The actual en-route unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (80.27 €) is +2.6% (or +2.04€) higher than the nominal DUC (78.23 €). The most important factors contributing to the observed difference are: the traffic risk sharing adjustment (+2.09 €) and traffic adjustment (+0.99 €), which are partly offset by the inflation adjustment (-1.75 €). Traffic risk sharing and traffic adjustments reflect the loss in revenues due to lower than planned TSUs in 2016, while the inflation adjustment reflects the impact of lower than planned inflation index in 2016.

It is also noted that Italy has reported a performance bonus for capacity under the capacity incentive scheme for en-route activity in 2016. See also **Note 1** at the end of this Report.

These costs and adjustments are divided by the **actual** TSUs in 2016.

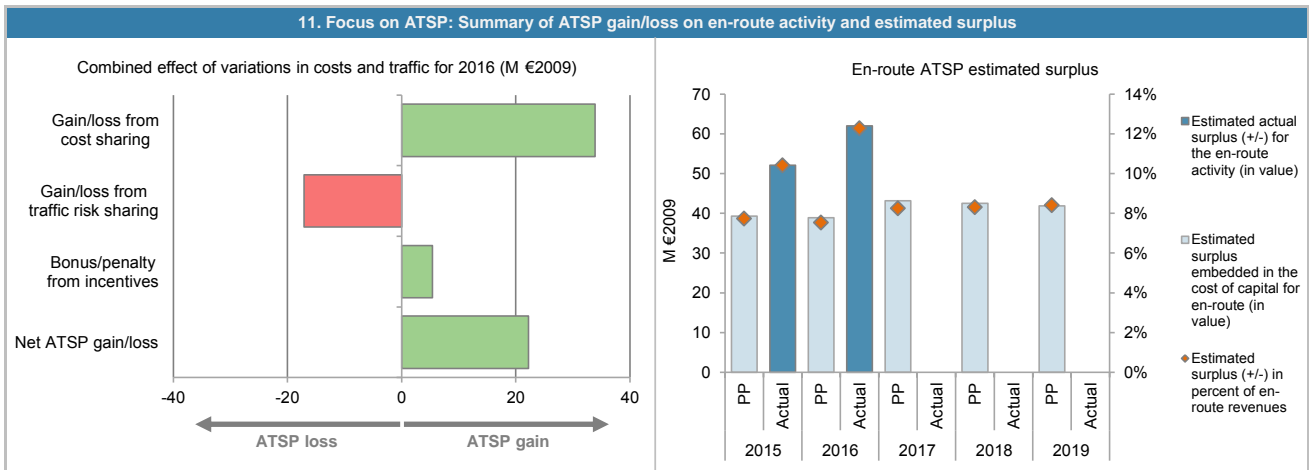
ITALY: En-route ATSP (ENAV)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	508 717	516 644			
Actual costs for the ATSP	487 764	482 739			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	20 953	33 905			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	20 953	33 905			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-4.5%	-6.4%			
Determined costs for the ATSP (PP) - based on actual inflation	500 771	514 683			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-13 795	-17 069			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	5 260	5 418			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	12 418	22 253			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	973 075	962 488	950 136	936 095	921 353
Estimated proportion of financing through equity (in %)	70.0%	70.0%	70.0%	70.0%	70.0%
Estimated proportion of financing through equity (in value)	681 153	673 742	665 095	655 266	644 947
Estimated proportion of financing through debt (in %)	30.0%	30.0%	30.0%	30.0%	30.0%
Estimated proportion of financing through debt (in value)	291 923	288 746	285 041	280 828	276 406
Cost of capital pre-tax (in value)	49 984	49 440	53 558	52 766	51 935
Average interest on debt (in %)	3.7%	3.7%	3.7%	3.7%	3.7%
Interest on debt (in value)	10 655	10 539	10 404	10 250	10 089
Determined RoE pre-tax rate (in %)	5.8%	5.8%	6.5%	6.5%	6.5%
Estimated surplus embedded in the cost of capital for en-route (in value)	39 329	38 901	43 154	42 516	41 846
Overall estimated surplus (+/-) for the en-route activity	39 329	38 901	43 154	42 516	41 846
Revenue/costs for the en-route activity	508 717	516 644	523 252	511 500	497 949
Estimated surplus (+/-) in percent of en-route revenues	7.7%	7.5%	8.2%	8.3%	8.4%
Estimated ex-ante RoE pre-tax rate (in %)	5.8%	5.8%	6.5%	6.5%	6.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	982 145	983 128			
Estimated proportion of financing through equity (in %)	70.0%	70.0%			
Estimated proportion of financing through equity (in value)	687 502	688 190			
Estimated proportion of financing through debt (in %)	30.0%	30.0%			
Estimated proportion of financing through debt (in value)	294 644	294 939			
Cost of capital pre-tax (in value)	50 450	50 501			
Average interest on debt (in %)	3.7%	3.7%			
Interest on debt (in value)	10 754	10 765			
Determined RoE pre-tax rate (in %)	5.8%	5.8%			
Estimated surplus embedded in the cost of capital for en-route (in value)	39 696	39 735			
Net ATSP gain(+)/loss(-) on en-route activity	12 418	22 253			
Overall estimated surplus (+/-) for the en-route activity	52 114	61 989			
Revenue/costs for the en-route activity	500 182	504 993			
Estimated surplus (+/-) in percent of en-route revenues	10.4%	12.3%			
Estimated ex-post RoE pre-tax rate (in %)	7.6%	9.0%			

ITALY: En-route ATSP (ENAV)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 ENAV en-route costs vs. PP

In 2016, ENAV actual en-route costs are -6.6% (-33.9 M€2009) lower, in real terms, than planned in the PP. According to the additional information to the June 2017 en-route reporting tables, this results from a combination of:

- lower staff costs (-4.1%, or -11.6 M€2009), mainly driven by i) a reduction in the number of executive managers employed, and ii) significantly slowed recruitment for operational staff.
- lower other operating costs (-14.2%, or -12.0 M€2009), primarily justified by renegotiated suppliers' contracts in particular related to "costs for electricity, insurances and operational telecommunications" and "substantial reduction of the consultancy activities assigned to external companies".
- lower depreciation costs (-11.6%, or -11.4 M€2009), mainly driven by i) reduction of costs obtained from the suppliers, in particular for implementation of activities and equipment for air traffic control, and ii) delay in conclusion of some significant projects (e.g. Coflight, Data Link, Mode S, 4 Flight).
- higher cost of capital (+2.1%, or +1.1 M€2009). It is noted, however, that in nominal terms, the actual cost of capital for 2016 is in line with the PP.

ENAV net gain/loss on en-route activity in 2016

As shown in Box 9, ENAV generated a net gain of +22.3 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +33.9 M€2009 arising from the cost sharing mechanism;
- a loss of -17.1 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +5.4 M€2009 (or +5.9 M€ in nominal terms), corresponding to a bonus for ENAV as part of the en-route capacity target incentive mechanism. This amount corresponds to 1.08% of ENAV en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission. See also **Note 1** at the end of this Report.

ENAV overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+22.3 M€2009) and the surplus embedded in the actual cost of capital (+39.7 M€2009) amounts to +62.0 M€2009 (12.3% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 9.0%, which is higher than the 5.8% planned in the RP2 PP.

It is also noted that, in nominal terms, actual asset base reported in June 2017 en-route reporting tables for the years 2015-2016 is identical to the planned asset base foreseen in the PP. Similarly, the average interest of debts (i.e. 3.7%) is in line with the planned values.

ITALY - ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Italy - Zone 1 TCZ represents 3.5% of the SES terminal ANS determined costs in 2016	· Is this TCZ applying traffic risk sharing?				Yes
· ATSP: ENAV	· Airports with fewer than 70,000 IFRs ATMs:				0
· National currency: EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:				0
· Number of airports in charging zone in 2016: 1, of which:	· Airports with more than 225,000 IFRs ATMs:				1
2. Terminal DUC monitoring at Charging Zone level					
Italy - Zone 1: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	42 696 901	43 687 670	43 890 827	44 785 896	45 542 237
Inflation %	1.0%	1.1%	1.3%	1.5%	1.6%
Inflation index (100 in 2009)	110.8	112.0	113.5	115.2	117.0
Real terminal costs (EUR2009)	38 537 174	39 002 391	38 680 909	38 886 435	38 920 419
Total terminal Service Units	218 658	224 343	230 401	235 700	240 414
Real terminal unit cost per Service Unit (EUR2009)	176.24	173.85	167.89	164.98	161.89
Italy - Zone 1: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	36 422 803	35 874 570			
Inflation %	0.1%	-0.1%			
Inflation index (100 in 2009)	109.8	109.7			
Real terminal costs (EUR2009)	33 180 738	32 714 019			
Total terminal Service Units	221 862	225 695			
Real terminal unit cost per Service Unit (EUR2009)	149.56	144.95			
Difference between Actuals and Planned	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -6 274 098	in value -7 813 100			
	in % -14.7%	in % -17.9%			
Inflation %	in p.p. -0.9 p.p.	in p.p. -1.2 p.p.			
Inflation index (100 in 2009)	in p.p. -1.0 p.p.	in p.p. -2.4 p.p.			
Real terminal costs (EUR2009)	in value -5 356 436	in value -6 288 373			
	in % -13.9%	in % -16.1%			
Total terminal Service Units	in value 3 203	in value 1 352			
	in % 1.5%	in % 0.6%			
Real terminal unit cost per Service Unit (EUR2009)	in value -26.69	in value -28.90			
	in % -15.1%	in % -16.6%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Italy Terminal Charging Zone 1 (TCZ 1) comprising only Roma Fiumicino (LIRF) airport. An analysis of TCZ 2 comprising Milano/Malpensa (LIMC), Bergamo/Orio al Serio (LIME), Milano/Linate (LIML) and Venezia/Tessera (LIPZ) airports is provided separately.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (144.95 €2009) is -16.6% lower than planned in the PP (173.85 €2009). This difference results from a combination of significantly lower than planned terminal costs in real terms (-16.1%, or -6.3 M€2009) and slightly higher than planned TNSUs (+0.6%).</p> <p>Terminal service units Traffic risk sharing applies in TCZ 1. However, since the difference between actual and planned TNSUs (+0.6%) is within the ±2% dead band, the related additional terminal revenues (+0.2 M€2009) are fully retained by the ATSP. It is noted that TNSUs are expected to remain broadly in line with the STATFOR February 2017 <u>base</u> TNSU growth scenario for the rest of RP2 (2017-2019).</p> <p>Terminal costs In nominal terms, the 2016 actual terminal costs are -17.9% (-7.8 M€) lower than planned. However, when expressed in real terms, since the actual inflation index is also lower than planned (-2.4 p.p.) the actual terminal costs are -16.1% below plans (-6.3 M€2009).</p> <p>The deviation between 2016 actual and planned terminal costs in real terms for TCZ1 is primarily driven by lower costs for ENAV (-16.2%, or -6.3 M€2009), while the costs for NSA are slightly higher (+1.0%). However, it is noted that the actual NSA costs are lower than planned (-1.1%) when expressed in nominal terms. A detailed analysis at ATSP level is provided in Box 12.</p> <p>No costs exempt from cost sharing are reported for TCZ 1.</p>					

ITALY - ZONE 1: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-16.2%
Other ANSPs	-
METSP	-
NSA	1.0%
Total	-16.1%

Costs by nature at ATSP level:

Staff	-19.4%
Other operating costs	-29.6%
Depreciation	-8.4%
Cost of capital	2.1%
Exceptional items	-
VFR exempted flights	-
Total	-16.2%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Italy - Zone 1 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The terminal unit rate charged to airspace users (CUR) in 2016 is 200.68 €. This is +3.1% higher than the nominal DUC (194.74 €). The difference between these two figures (+5.94 €) relates to RP1 under-recoveries carried-over to 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Italy - Zone 1 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

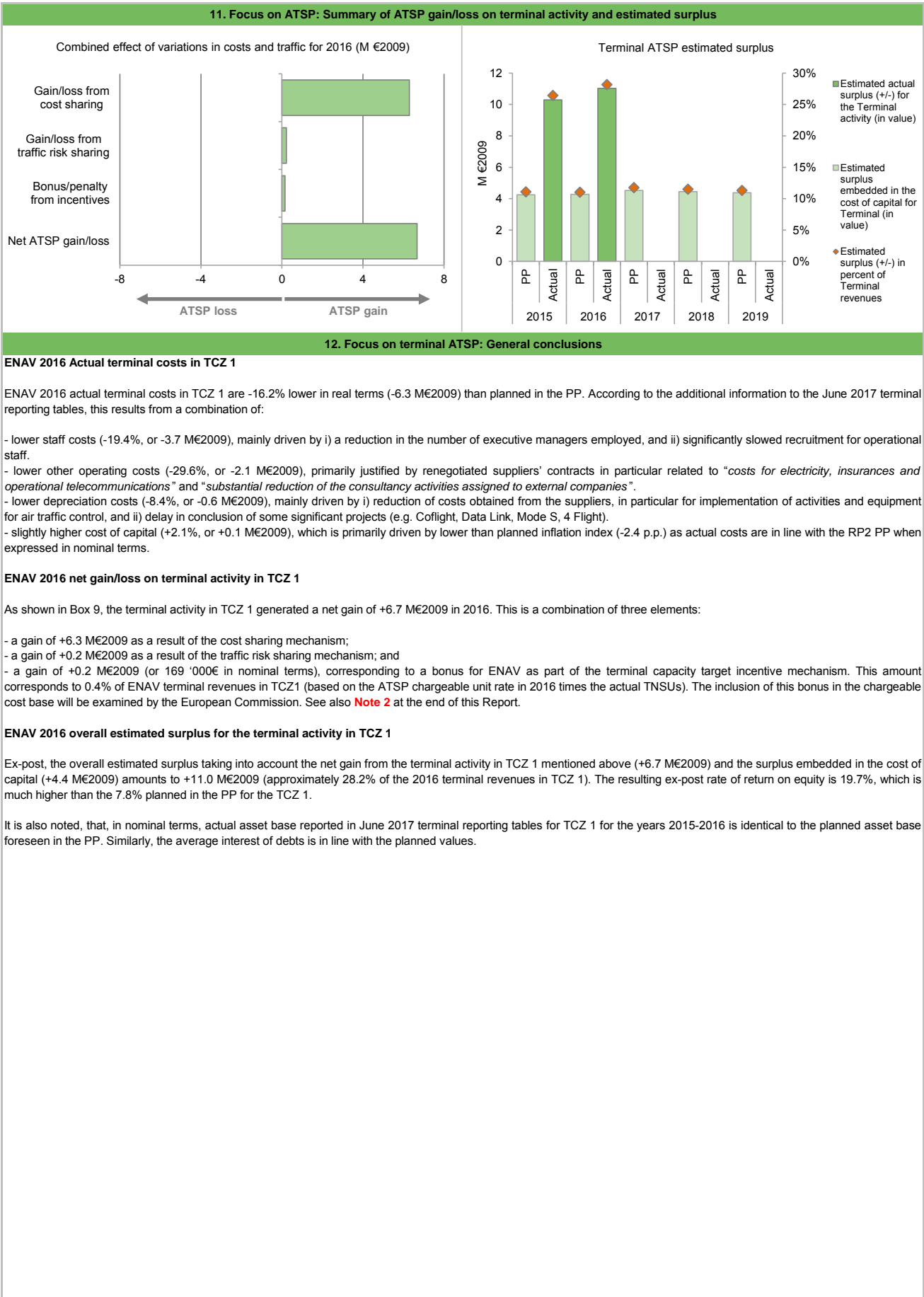
The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (191.33 €) is -1.7% lower than the nominal DUC (194.74 €). The most important factor contributing to the observed difference (-3.41 €) is the inflation adjustment (-4.06 €) reflecting the impact of a lower than planned inflation index for the year 2016, which will be carried-over to reduce the costs charged to airspace users in 2018. This is slightly balanced by a bonus for performance in 2016 related to a terminal capacity incentive scheme (+0.75 €). See also **Note 2** at the end of this Report.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

ITALY: Terminal ATSP (ENAV) Italy - Zone 1

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	38 350	38 813			
Actual costs for the ATSP	32 992	32 523			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	5 357	6 290			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	5 357	6 290			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.5%	0.6%			
Determined costs for the ATSP (PP) - based on actual inflation	35 838	36 707			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	525	221			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	126	154			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	6 008	6 666			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	79 306	78 443	80 342	79 154	77 908
Estimated proportion of financing through equity (in %)	70.0%	70.0%	70.0%	70.0%	70.0%
Estimated proportion of financing through equity (in value)	55 514	54 910	56 239	55 408	54 536
Estimated proportion of financing through debt (in %)	30.0%	30.0%	30.0%	30.0%	30.0%
Estimated proportion of financing through debt (in value)	23 792	23 533	24 103	23 746	23 372
Cost of capital pre-tax (in value)	4 964	5 219	5 457	5 376	5 291
Average interest on debt (in %)	3.0%	4.0%	3.9%	3.9%	3.9%
Interest on debt (in value)	714	941	940	926	912
Determined RoE pre-tax rate (in %)	7.7%	7.8%	8.0%	8.0%	8.0%
Estimated surplus embedded in the cost of capital for terminal (in value)	4 250	4 278	4 517	4 450	4 380
Overall estimated surplus (+/-) for the terminal activity	4 250	4 278	4 517	4 450	4 380
Revenue/costs for the terminal activity	38 350	38 813	38 489	38 694	38 729
Estimated surplus (+/-) in percent of terminal revenues	11.1%	11.0%	11.7%	11.5%	11.3%
Estimated ex-ante RoE pre-tax rate (in %)	7.7%	7.8%	8.0%	8.0%	8.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	80 045	80 125			
Estimated proportion of financing through equity (in %)	70.0%	70.0%			
Estimated proportion of financing through equity (in value)	56 031	56 087			
Estimated proportion of financing through debt (in %)	30.0%	30.0%			
Estimated proportion of financing through debt (in value)	24 013	24 037			
Cost of capital pre-tax (in value)	5 010	5 331			
Average interest on debt (in %)	3.0%	4.0%			
Interest on debt (in value)	720	961			
Determined RoE pre-tax rate (in %)	7.7%	7.8%			
Estimated surplus embedded in the cost of capital for terminal (in value)	4 290	4 370			
Net ATSP gain(+)/loss(-) on terminal activity	6 008	6 666			
Overall estimated surplus (+/-) for the terminal activity	10 298	11 035			
Revenue/costs for the terminal activity	39 000	39 189			
Estimated surplus (+/-) in percent of terminal revenues	26.4%	28.2%			
Estimated ex-post RoE pre-tax rate (in %)	18.4%	19.7%			



ITALY - ZONE 2: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Italy - Zone 2 TCZ represents 5.1% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No
· ATSP: ENAV					· Airports with fewer than 70,000 IFRs ATMs:	0
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs:	4
· Number of airports in charging zone in 2016: 4, of which:					· Airports with more than 225,000 IFRs ATMs:	0
2. Terminal DUC monitoring at Charging Zone level						
Italy - Zone 2: Data from RP2 Performance Plan						
	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal EUR)	61 479 947	63 501 025	63 881 934	65 032 915	65 952 563	
Inflation %	1.03%	1.1%	1.3%	1.5%	1.6%	
Inflation index (100 in 2009)	110.8	112.0	113.5	115.2	117.0	
Real terminal costs (EUR2009)	55 490 290	56 690 865	56 299 036	56 466 398	56 363 094	
Total terminal Service Units	286 726	294 467	301 829	308 771	314 947	
Real terminal unit cost per Service Unit (EUR2009)	193.53	192.52	186.53	182.87	178.96	
Italy - Zone 2: Actual data from Reporting Tables						
	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal EUR)	53 228 033	54 136 477				
Inflation %	0.10%	-0.1%				
Inflation index (100 in 2009)	109.8	109.7				
Real terminal costs (EUR2009)	48 490 101	49 367 051				
Total terminal Service Units	286 465	300 714				
Real terminal unit cost per Service Unit (EUR2009)	169.27	164.17				
Difference between Actuals and Planned						
	2015	2016	2017	2018	2019	
Terminal costs (nominal EUR)	in value -8 251 914	in value -9 364 547				
	in % -13.4%	in % -14.7%				
Inflation %	in p.p. -0.9 p.p.	in p.p. -1.2 p.p.				
Inflation index (100 in 2009)	in p.p. -1.0 p.p.	in p.p. -2.4 p.p.				
Real terminal costs (EUR2009)	in value -7 000 188	in value -7 323 814				
	in % -12.6%	in % -12.9%				
Total terminal Service Units	in value -261	in value 6 247				
	in % -0.1%	in % 2.1%				
Real terminal unit cost per Service Unit (EUR2009)	in value -24.26	in value -28.35				
	in % -12.5%	in % -14.7%				
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Italy Terminal Charging Zone 2 (TCZ 2) comprising Milano/Malpensa (LIMC), Bergamo/Orio al Serio (LIME), Milano/Linate (LIML) and Venezia/Tessera (LIPZ) airports.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (164.17 €2009) is -14.7% lower than planned in the PP (192.52 €2009). This difference results from a combination of significantly lower than planned terminal costs in real terms (-12.9%, or -7.3 M€2009) and higher than planned TNSUs (+2.1%).</p> <p>Terminal service units The traffic risk sharing does not apply in TCZ 2. The difference between actual and planned TNSUs (+2.1%) generates a gain of terminal revenues (+1.3 M€2009) which will be carried-over and reimbursed to the airspace users in 2018. It is noted that the TNSUs included in the RP2 PP are expected to remain just below STATFOR February 2017 base TNSU growth scenario for the rest of RP2 (2017-2019).</p> <p>Terminal costs In nominal terms, actual terminal costs in TCZ 2 are -14.7% (or -9.4 M€) lower than planned. However, since the actual inflation index is also lower than planned (-2.4 p.p.) the actual terminal costs are -12.9% (-7.3 M€2009) below plans when expressed in real terms.</p> <p>The deviation between 2016 actual and planned terminal costs in real terms reflects mainly the deviation for ENAV (-13.0%, or -7.3 M€2009), while the NSA costs are slightly higher (+1.0%). However in nominal terms, the actual NSA costs are slightly lower than planned (-1.1%). A detailed analysis at ATSP level is provided in Box 12.</p> <p>No costs exempt from cost-sharing are reported for the TCZ 2.</p>						

ITALY - ZONE 2: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-13.0%
Other ANSPs	-
METSP	-
NSA	1.0%
Total	-12.9%

Costs by nature at ATSP level:

Staff	-14.0%
Other operating costs	-24.7%
Depreciation	-6.6%
Cost of capital	-
Exceptional items	-
VFR exempted flights	-
Total	-13.0%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Italy - Zone 2 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The terminal unit rate charged to airspace users (CUR) in 2016 is 233.33 €. This is +8.2% higher than the nominal DUC (215.65 €). The difference between these two figures (+17.68 €) relates to RP1 under recoveries carried-over to 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Italy - Zone 2 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

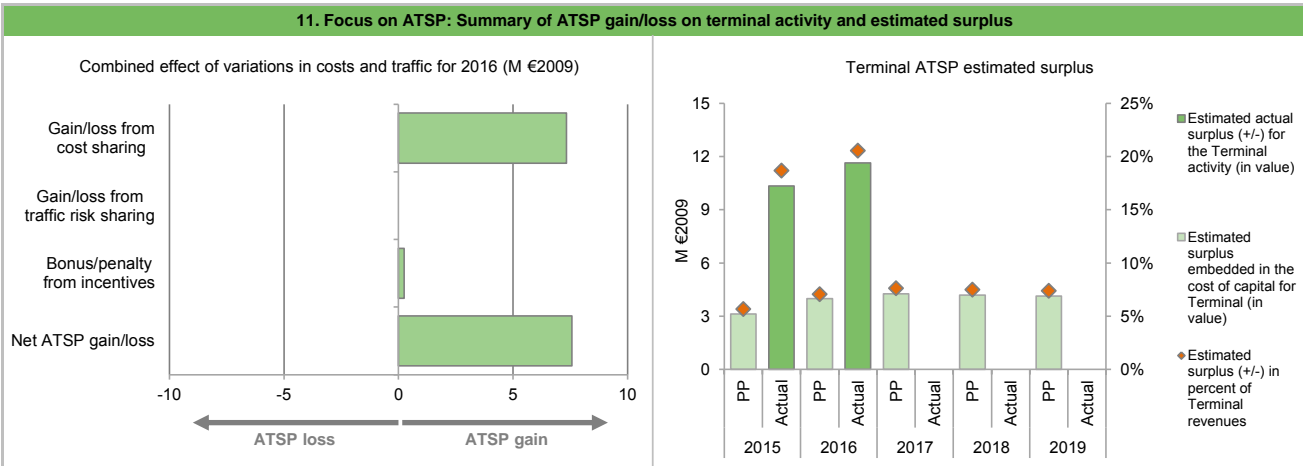
The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (207.61 €) is -3.7% lower than the nominal DUC (215.65 €). The most important factors contributing to the observed difference (-8.04 €) are the inflation adjustment (-4.43 €) and traffic adjustment (-4.48 €). The inflation adjustment corresponds to the impact of a lower than planned inflation index for the year 2016, which will be carried-over to reduce the costs charged to airspace users in 2018. The traffic adjustment reflects the impact of higher than planned TNSUs in 2016, which will be carried over to reduce costs charged to airspace users in 2018. This is slightly balanced by a bonus for performance in 2016 related to a terminal capacity incentive scheme (+0.87 €). See also **Note 2** at the end of this Report.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

ITALY: Terminal ATSP (ENAV) Italy - Zone 2

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	55 198	56 396			
Actual costs for the ATSP	48 197	49 070			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	7 002	7 327			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	7 002	7 327			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
	Not Applicable				
	Not Applicable				
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	178	239			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	7 180	7 566			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	104 216	103 082	105 578	104 018	102 380
Estimated proportion of financing through equity (in %)	70.0%	70.0%	70.0%	70.0%	70.0%
Estimated proportion of financing through equity (in value)	72 951	72 158	73 905	72 812	71 666
Estimated proportion of financing through debt (in %)	30.0%	30.0%	30.0%	30.0%	30.0%
Estimated proportion of financing through debt (in value)	31 265	30 925	31 673	31 205	30 714
Cost of capital pre-tax (in value)	4 068	5 226	5 498	5 416	5 331
Average interest on debt (in %)	3.0%	4.0%	3.9%	3.9%	3.9%
Interest on debt (in value)	938	1 237	1 235	1 217	1 198
Determined RoE pre-tax rate (in %)	4.3%	5.5%	5.8%	5.8%	5.8%
Estimated surplus embedded in the cost of capital for terminal (in value)	3 130	3 989	4 262	4 199	4 133
Overall estimated surplus (+/-) for the terminal activity	3 130	3 989	4 262	4 199	4 133
Revenue/costs for the terminal activity	55 198	56 396	56 001	56 167	56 065
Estimated surplus (+/-) in percent of terminal revenues	5.7%	7.1%	7.6%	7.5%	7.4%
Estimated ex-ante RoE pre-tax rate (in %)	4.3%	5.5%	5.8%	5.8%	5.8%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	105 188	105 293			
Estimated proportion of financing through equity (in %)	70.0%	70.0%			
Estimated proportion of financing through equity (in value)	73 631	73 705			
Estimated proportion of financing through debt (in %)	30.0%	30.0%			
Estimated proportion of financing through debt (in value)	31 556	31 588			
Cost of capital pre-tax (in value)	4 105	5 338			
Average interest on debt (in %)	3.0%	4.0%			
Interest on debt (in value)	947	1 264			
Determined RoE pre-tax rate (in %)	4.3%	5.5%			
Estimated surplus embedded in the cost of capital for terminal (in value)	3 159	4 074			
Net ATSP gain(+)/loss(-) on terminal activity	7 180	7 566			
Overall estimated surplus (+/-) for the terminal activity	10 339	11 640			
Revenue/costs for the terminal activity	55 376	56 635			
Estimated surplus (+/-) in percent of terminal revenues	18.7%	20.6%			
Estimated ex-post RoE pre-tax rate (in %)	14.0%	15.8%			



12. Focus on terminal ATSP: General conclusions

Actual 2016 ENAV terminal costs in TCZ 2 vs. PP

ENAV actual terminal costs in TCZ 2 are -13.0% (-7.3 M€2009) lower, in real terms, than planned in the PP. According to the additional information provided in the June 2017 terminal reporting tables, this results from a combination of:

- lower staff costs (-14.0%, or -4.0 M€2009), mainly driven by i) a reduction in the number of executive managers employed, and ii) significantly slowed recruitment for operational staff.
- lower other operating costs (-24.7%, or -2.6 M€2009), primarily justified by renegotiated suppliers' contracts in particular related to "costs for electricity, insurances and operational telecommunications" and "substantial reduction of the consultancy activities assigned to external companies".
- lower depreciation costs (-6.6%, or -0.8 M€2009), mainly driven by i) reduction of costs obtained from the suppliers, in particular for implementation of activities and equipment for air traffic control, and ii) delay in conclusion of some significant projects (e.g. Coflight, Data Link, Mode S, 4 Flight).
- slightly higher cost of capital (+2.1%, or +0.1 M€2009), which is primarily driven by lower than planned inflation index (-2.4 p.p.) as actual costs are in line with the RP2 PP in nominal terms.

ENAV 2016 net gain/loss on terminal activity in TCZ 2

As shown in Box 9, the terminal activity in TCZ 2 generated a net gain of some +7.6 M€2009 in 2016. This is a combination of two elements:

- a gain of +7.3 M€2009 as a result of the cost sharing mechanism; and,
- a gain of +0.2 M€2009 (or 262 '000€ in nominal terms), corresponding to a bonus for ENAV as part of the terminal capacity target incentive mechanism. This amount corresponds to 0.4% of ENAV terminal revenues in TCZ2 (based on the ATSP chargeable unit rate in 2016 times the actual TNSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission. See also **Note 2** at the end of this Report.

ENAV 2016 overall estimated surplus for the terminal activity in TCZ 2

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in TCZ 2 mentioned above (+7.6 M€2009) and the surplus embedded in the cost of capital (+4.1 M€2009) amounts to +11.6 M€2009 (approximately 20.6% of the 2016 terminal revenues in TCZ 2). The resulting ex-post rate of return on equity is 15.8%, which is much higher than the 5.5% planned in the PP for the TCZ 2.

It is also noted, that, in nominal terms, actual asset base reported in June 2017 terminal reporting tables for TCZ 2 for the years 2015-2016 is identical to the planned asset base foreseen in the PP. Similarly, the average interest of debts is in line with the planned values.

ITALY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
Italy: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	609 005 804	619 176 790	627 477 336	617 241 895	604 216 765																		
Real terminal costs (EUR2009)	94 027 463	95 693 256	94 979 945	95 352 833	95 283 514																		
Real gate-to-gate costs (EUR2009)	703 033 268	714 870 046	722 457 281	712 594 727	699 500 279																		
En-route share (%)	86.6%	86.6%	86.9%	86.6%	86.4%																		
Italy: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	587 471 424	581 543 938																					
Real terminal costs (EUR2009)	81 670 839	82 081 069																					
Real gate-to-gate costs (EUR2009)	669 142 263	663 625 007																					
En-route share (%)	87.8%	87.6%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	-33 891 005	-51 245 039																					
in %	-4.8%	-7.2%																					
En-route share																							
in p.p.	1.2%	1.0%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
<p>In 2016, actual gate-to-gate ANS costs are -7.2% (or -51.2 M€2009) lower than planned due to reductions in en-route ANS costs (-6.1%, or -37.6 M€2009) and terminal ANS costs for TCZ 1 (-16.1%, or -6.3 M€2009) and TCZ 2 (-12.9%, or -7.3 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (87.6%) is higher (+1.0%) than planned in the PP for 2016 (86.6%).</p> <p>For ENAV, the estimated gate-to-gate economic surplus in 2016 amounts to 84.7 M€2009 (the three "Boxes 10" for a detailed analysis at charging zone level), corresponding to 14.1% of gate-to-gate ANS revenues. This is significantly higher (+16.4%) than the actual gate-to-gate economic surplus recorded in 2015 (+72.8 M€2009).</p>																							
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																					
2015	83%	17%																					
2016	85%	15%																					
2017	82%	18%																					
2018																							
2019																							
3. Technical notes on en-route and terminal information reported by Italy																							
<p>Note 1: With respect to the en-route capacity target incentive mechanism applied to ENAV, it is noted that no information on capacity incentives is reported in the respective part of the 2016 BLUE MED FAB monitoring report. For the purposes of this monitoring report, the value of incentive provided in the submission of June 2017 en-route reporting tables is used.</p> <p>Note 2: With respect to the terminal capacity target incentive mechanism applied to ENAV, it is noted that no information on capacity incentives for TCZ 1 and TCZ 2 are reported in the respective parts of the 2016 BLUE MED FAB monitoring report. For the purposes of this monitoring report, the values of incentives provided in the submission of June 2017 terminal reporting tables is used.</p>																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Malta

Version: 1.1

Date: 9 October 2017

MALTA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	52	B	C	C	B	C
MATS	83	D	D	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	N/A	N/A
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	Transport Malta	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	7	0
Occurrence reporting and Investigation	1	1
TOTAL	17	1
MATS	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	2	1
Occurrence reporting and Investigation	5	3
TOTAL	19	5

Observations
<p>Two out of the four reviewed EoSM Components/areas of the State is below the 2019 EoSM target level (Safety Culture excluded). After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), four (4) are below Level C.</p>

MALTA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

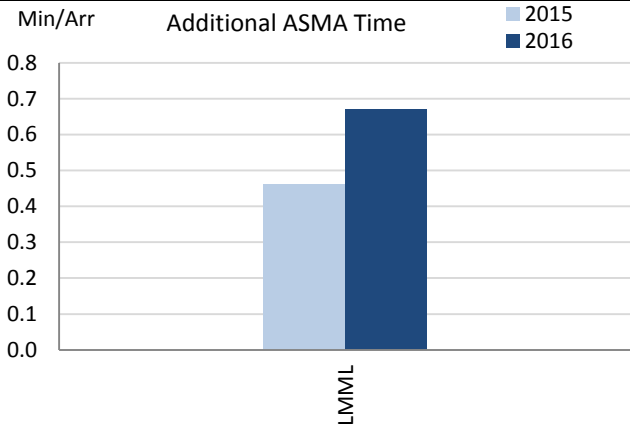
1. Overview

The data flow with Malta airport only allows for the monitoring of the additional ASMA time, as the required information for the computation of the additional taxi-out time was not submitted.
 Malta is currently working on the remaining data issues to ensure the necessary quality reporting.

2. Additional Taxi-Out Time

Due to the lack of data, the additional taxi-out time indicator cannot be monitored at the Maltese airport at the time being.

3. Additional ASMA Time



Additional time in the terminal area at Malta has significantly increased in 2016 (45%) with respect to the previous year, especially during the second part of the year. Nevertheless, it still remains relatively low at 0.67 min/arr.
 Traffic in LMML increased by 6% in 2016.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Malta	LMML	n/a	n/a				0.46	0.67			

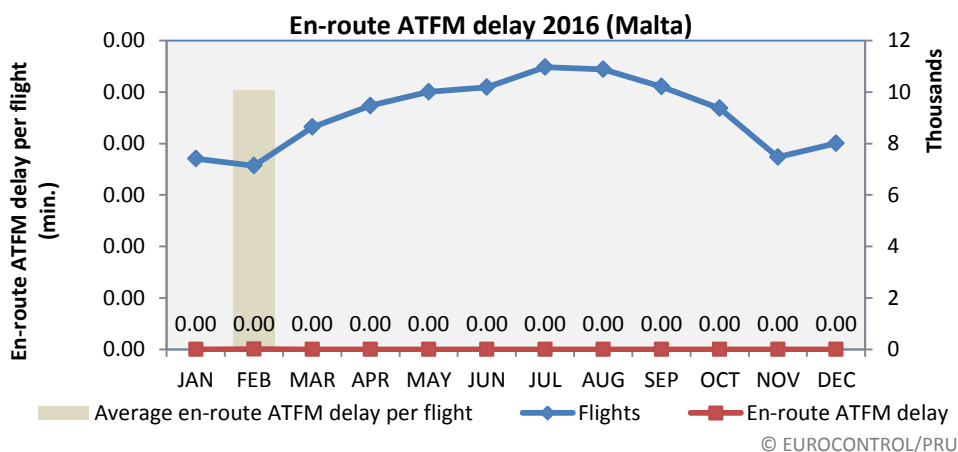
En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.01	0.02	0.02	0.02	0.02	
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.00	0.00				

National capacity incentive scheme

Malta did not present an en route capacity incentive scheme in the BLUEMED performance plan.

Compliance issues relating to national capacity incentive scheme

Observations regarding national capacity performance



En-route ATFM delay per flight (Malta)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Malta continues to provide excellent en route capacity performance, with zero ATFM delay for airspace users, in 2016. It is expected that Malta will be able to provide a similar en route capacity performance for the remainder of RP2.

Planning and Effective Use of CDRs

Malta reports that there are no CDRs in Maltese airspace.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

Malta does not have defence aircraft. Furthermore the territory of Malta is small and no airspace dedicated to the military exists. FUA principles apply over the high seas with foreign military forces either through direct coordination or through established agreements. The Commission confirmed on 27.09.2013 that Article 4 (1) of Regulation EC No 2150/2005 is not applicable to states that do not have defence aircraft.

Observations on Effective booking procedures

Historically, Malta has stated that military operations and training does not impact either ATC capacity or available route options for GAT traffic.

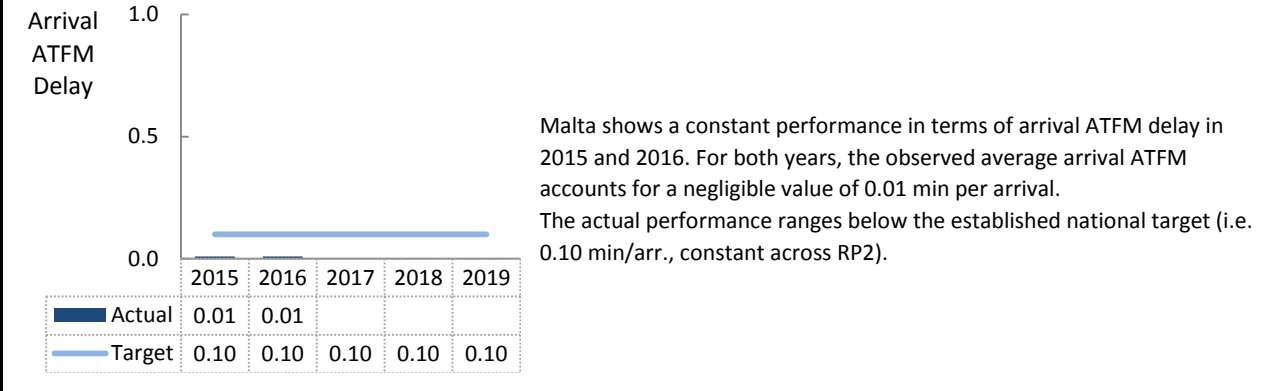
MALTA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Malta (LMML) is the only airport subject to RP2. The national target on arrival ATFM delay is fully met with a negligible local share of arrival ATFM delay (i.e. 0.01 min/arr. in 2015 and 2016). LMML ranges in the group of best-in-class with a level of ATFM slot adherence of above 95%. Pre-departure delay increased in 2016, however, still ranges at a low level of 0.16 min/dep. in 2016. Malta contributes adequately to the BLUE MED FAB and European performance.

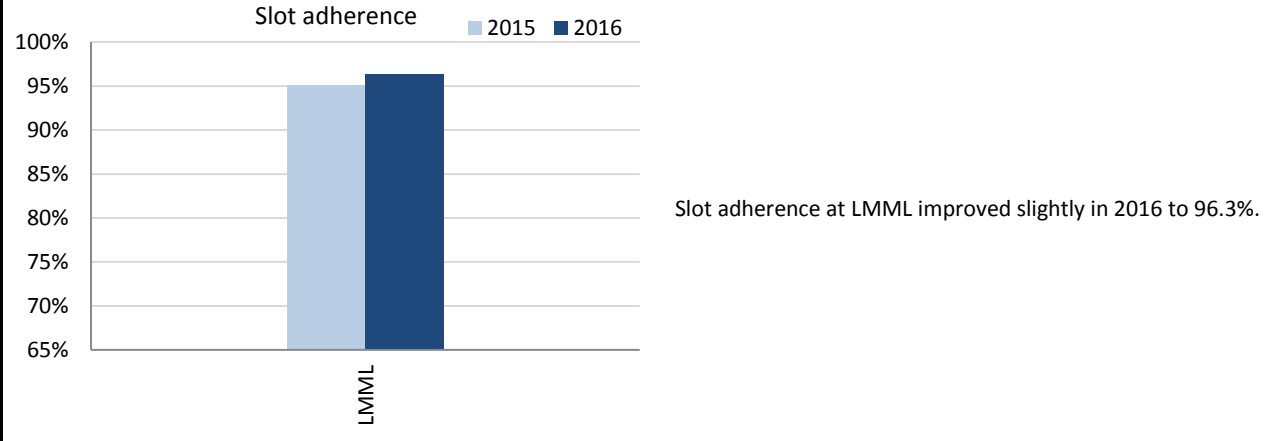
2. Arrival ATFM Delay



3. Arrival ATFM Delay – National Target and Incentive Scheme

Within BLUE MED FAB, Malta has established a national target on arrival ATFM delay. The established national target is in line with the historical performance observed before the start of RP2 and allows for operational variability. Malta has not established an incentive scheme for the national target on arrival ATFM delay.

4. ATFM Slot Adherence



5. Pre-departure Delay

Although the actual value has doubled in 2016 (i.e. 0.16 min/dep.), LMML accrues a relative small share of average pre-departure delay in 2015 and 2016. This performance is commensurate with the level of congestion observed at LMML. Nonetheless there is a high share of unreported delay which requires further validation.

6. Appendix

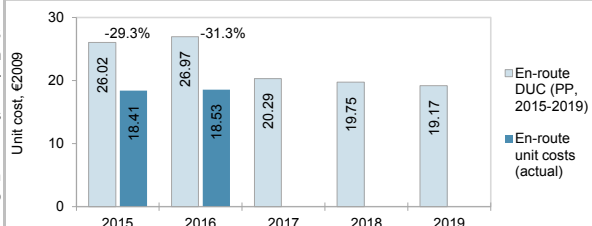
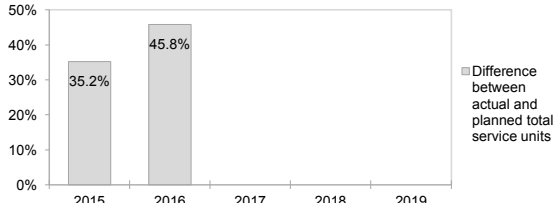
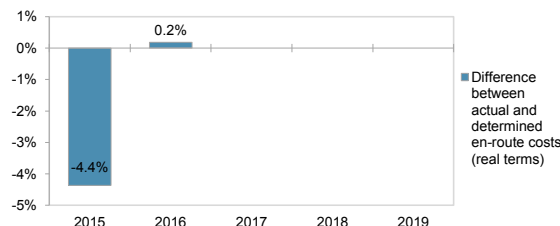
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Malta	LMML	0.01	0.01				95.1%	96.3%				0.08	0.16			

MALTA: En-route charging zone

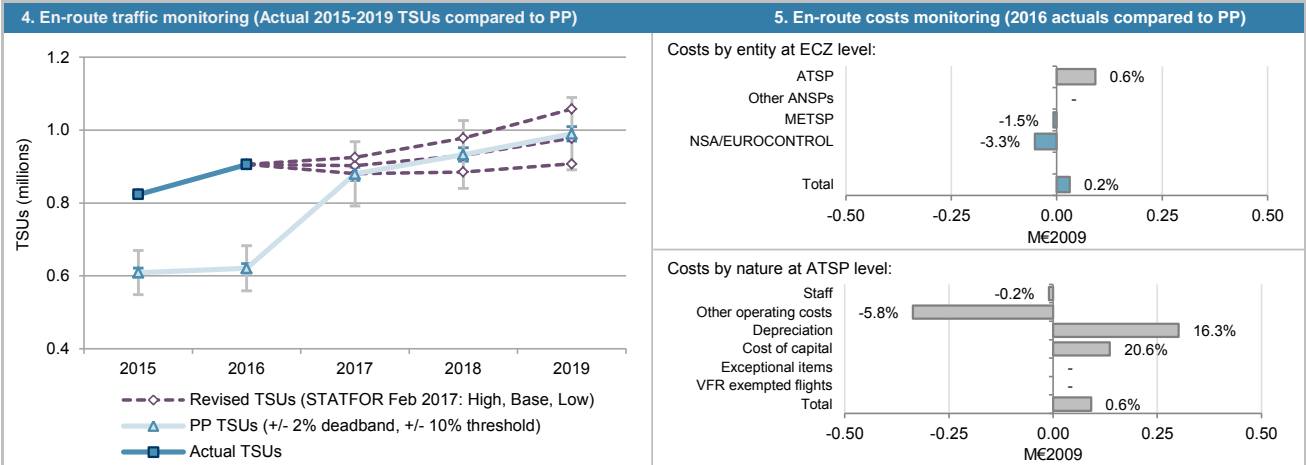
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services								
<ul style="list-style-type: none"> Malta ECZ represents 0.3% of the SES en-route ANS determined costs in 2016 ATSP: MATS FAB: BLUE MED FAB National currency: EUR 								
2. En-route DUC monitoring at Charging Zone level								
Malta: Data from RP2 Performance Plan		(*See Note 1)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)				17 736 060	19 082 057	20 694 940	21 720 523	22 752 314
Inflation %				1.7%	1.8%	1.7%	1.7%	1.7%
Inflation index (100 in 2009)				111.9	114.0	115.9	117.9	119.9
Real en-route costs (EUR2009)				15 844 908	16 745 957	17 857 802	18 429 483	18 982 242
Total en-route Service Units				609 000	621 000	880 000	933 000	990 000
Real en-route unit cost per Service Unit (EUR2009)				26.02	26.97	20.29	19.75	19.17
Malta: Actual data from Reporting Tables				2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)				16 845 837	18 817 481			
Inflation %				1.2%	0.9%			
Inflation index (100 in 2009)				111.2	112.2			
Real en-route costs (EUR2009)				15 153 971	16 776 608			
Total en-route Service Units				823 344	905 497			
Real en-route unit cost per Service Unit (EUR2009)				18.41	18.53			
Difference between Actuals and Planned				2015	2016	2017	2018	2019
En-route costs (nominal EUR)		in value		-890 223	-264 576			
		in %		-5.0%	-1.4%			
Inflation %		in p.p.		-0.5 p.p.	-0.9 p.p.			
Inflation index (100 in 2009)		in p.p.		-0.8 p.p.	-1.8 p.p.			
Real en-route costs (EUR2009)		in value		-690 937	30 651			
		in %		-4.4%	0.2%			
Total en-route Service Units		in value		214 344	284 497			
		in %		35.2%	45.8%			
Real en-route unit cost per Service Unit (EUR2009)		in value		-7.61	-8.44			
		in %		-29.3%	-31.3%			
3. Focus on en-route at State/Charging Zone level								
En-route unit cost								
<p>In 2016, the actual en-route unit cost in real terms (18.53 €2009) is -31.3% lower than planned in the PP (26.97 €2009). This difference results from the combination of significantly higher than planned TSUs (+45.8%) and slightly higher than planned en-route costs in real terms (+0.2%, or +0.03 M€2009), although in nominal terms costs are lower than planned (-1.4%, or -0.3 M€).</p>								
En-route service units								
<p>The difference between actual and planned TSUs (+45.8%) falls outside of the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of additional en-route revenues is therefore shared between the ATSP and the airspace users, the former retaining a gain of 0.7 M€2009.</p>								
<p>According to STATFOR February 2017 <u>base</u> TSU growth scenario, the en-route TSUs for Malta are expected to stay within the ±2% dead band foreseen in the traffic risk-sharing mechanism for the remainder of RP2. It is noted that the determined TSUs underpinning the adopted RP2 cost-efficiency targets for 2015-2016 were well below STATFOR February 2014 <u>low</u> TSU growth scenario at the time of PP adoption, while the TSUs selected for the revised PP (2017-2019) are in line with STATFOR February 2016 <u>base</u> TSU growth scenario. See also Note 1 at the end of this Report.</p>								
En-route costs								
<p>In nominal terms, actual en-route costs are -1.4% (-0.3 M€) lower than planned. However, since the actual inflation index is also lower than planned (-1.8 p.p.), actual en-route costs are +0.2% (+0.03 M€2009) above plans when expressed in real terms.</p>								
<p>The higher than planned en-route costs in real terms are primarily driven by higher costs for MATS (+0.6%, or +0.1 M€2009). It is noted that higher than planned real en-route costs for MATS result from lower than planned inflation index, as actual costs are lower than planned in nominal terms (-1.0%, or -0.2 M€). Differently, actual costs are lower than planned for the MET service prover (-1.5%, or -0.01 M€2009) and the NSA/EUROCONTROL (-3.3%, or -0.1 M€2009). A detailed analysis at ATSP level is provided in Box 12.</p>								
<p>Costs exempt from cost-sharing are reported for a total amount of -0.1 M€2009 comprising the variation in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>								



MALTA: En-route charging zone

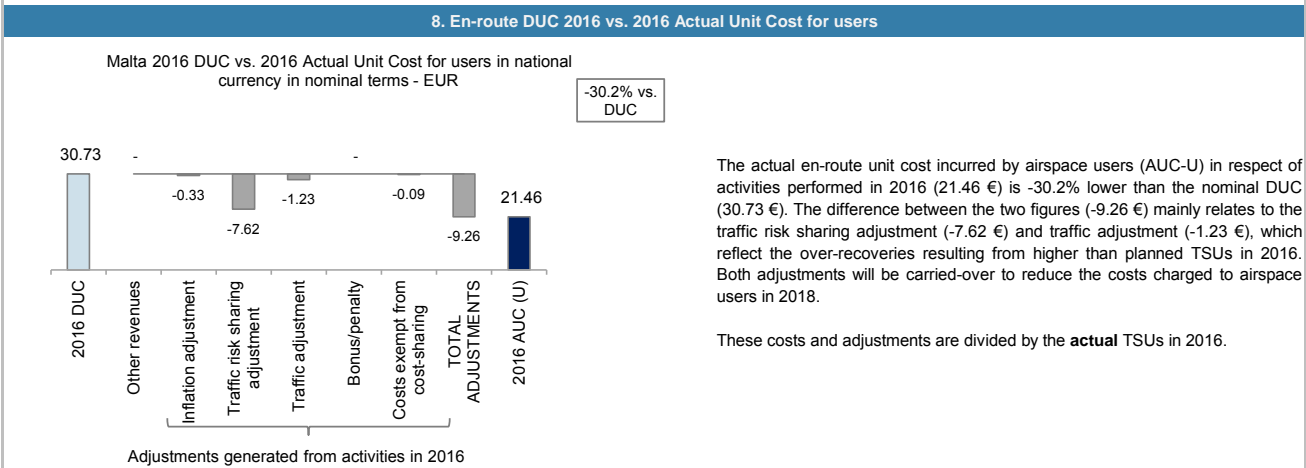
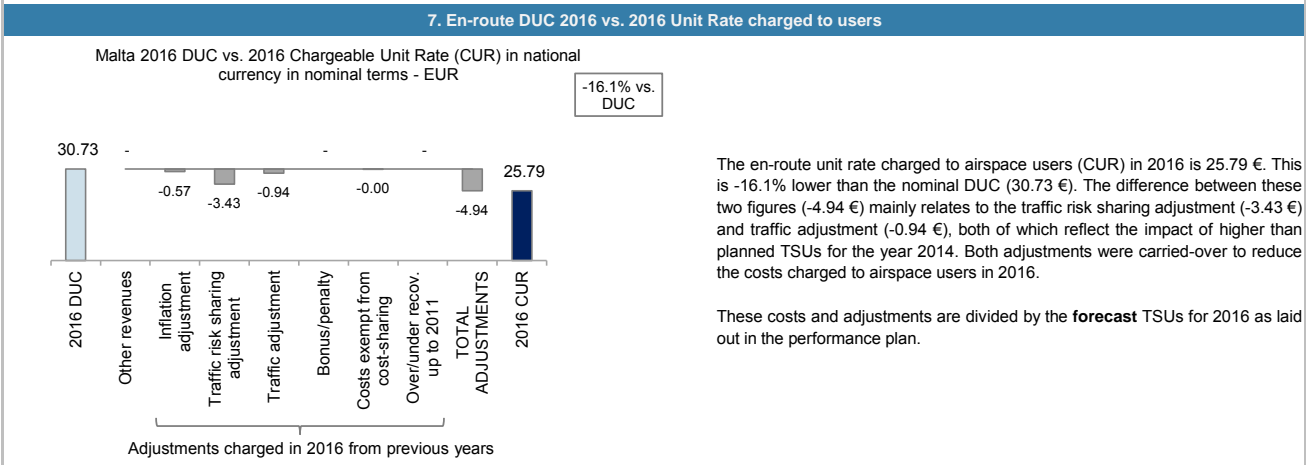
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-4	-72			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-4	-72			
Total costs exempt from cost sharing		-4	-72			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



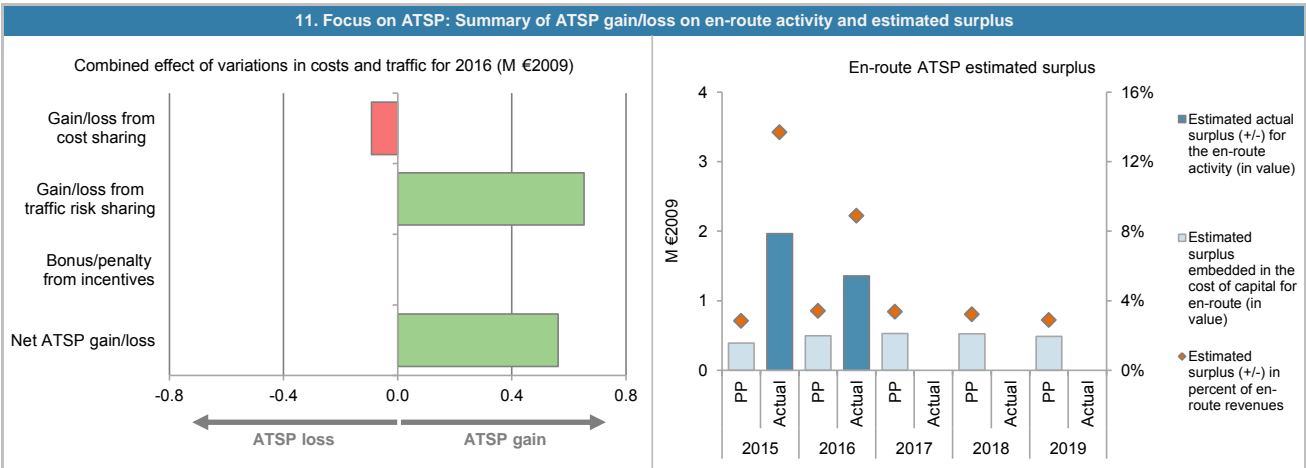
MALTA: En-route ATSP (MATS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	13 734	14 616			
Actual costs for the ATSP	13 120	14 707			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	614	-91			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	614	-91			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	35.2%	45.8%			
Determined costs for the ATSP (PP) - based on actual inflation	13 830	14 849			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	609	653			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	1 223	562			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	9 037	10 721	11 457	11 410	10 563
Estimated proportion of financing through equity (in %)	62.6%	62.3%	57.8%	55.1%	56.2%
Estimated proportion of financing through equity (in value)	5 656	6 677	6 618	6 290	5 931
Estimated proportion of financing through debt (in %)	37.4%	37.7%	42.2%	44.9%	43.8%
Estimated proportion of financing through debt (in value)	3 380	4 044	4 838	5 121	4 632
Cost of capital pre-tax (in value)	526	661	722	728	673
Average interest on debt (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
Interest on debt (in value)	135	162	194	205	185
Determined RoE pre-tax rate (in %)	6.9%	7.5%	8.0%	8.3%	8.2%
Estimated surplus embedded in the cost of capital for en-route (in value)	391	499	529	523	488
Overall estimated surplus (+/-) for the en-route activity	391	499	529	523	488
Revenue/costs for the en-route activity	13 734	14 616	15 712	16 272	16 809
Estimated surplus (+/-) in percent of en-route revenues	2.8%	3.4%	3.4%	3.2%	2.9%
Estimated ex-ante RoE pre-tax rate (in %)	6.9%	7.5%	8.0%	8.3%	8.2%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	10 716	10 667			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	10 716	10 667			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	740	797			
Average interest on debt (in %)	4.0%	4.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.9%	7.5%			
Estimated surplus embedded in the cost of capital for en-route (in value)	740	797			
Net ATSP gain(+)/loss(-) on en-route activity	1 223	562			
Overall estimated surplus (+/-) for the en-route activity	1 963	1 359			
Revenue/costs for the en-route activity	14 343	15 270			
Estimated surplus (+/-) in percent of en-route revenues	13.7%	8.9%			
Estimated ex-post RoE pre-tax rate (in %)	18.3%	12.7%			

MALTA: En-route ATSP (MATS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 MATS en-route costs vs. PP

In 2016, MATS actual en-route costs are +0.6% (+0.1 M€2009) higher, in real terms, than planned in the PP. However, this is mainly due to a lower than planned inflation index (-1.8 p.p.), as actual en-route costs are lower than planned in nominal terms (-1.0%, or -0.2 M€). According to the additional information to the June 2017 en-route reporting tables, this results from the combination of:

- lower staff costs (-0.2%, or -0.01 M€2009), mainly due to "to unforeseen delays in the recruitment process for some managerial, operational and technical posts";
- lower other operating costs (-5.8%, or -0.3 M€2009), explained by "delays in training expenditure for new operational and technical staff";
- higher depreciation costs (+16.3%, or +0.3 M€2009), justified by "the new ATM system that was commissioned during 2016"; and,
- a much higher cost of capital (+20.6%, or +0.1 M€2009), due to the fact that "capital structure has mostly relied on equity financing".

MATS net gain/loss on en-route activity in 2016

As shown in box 9, MATS generated a net gain of +0.6 M€2009 on the en-route activity. This is a combination of two elements:

- a loss of -0.1 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +0.7 M€2009 arising from the traffic risk-sharing mechanism.

MATS overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+0.6 M€2009) and the surplus embedded in the actual cost of capital (+0.8 M€2009) amounts to +1.4 M€2009 (8.9% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 12.7%, which is higher than the 7.5% planned in the PP.

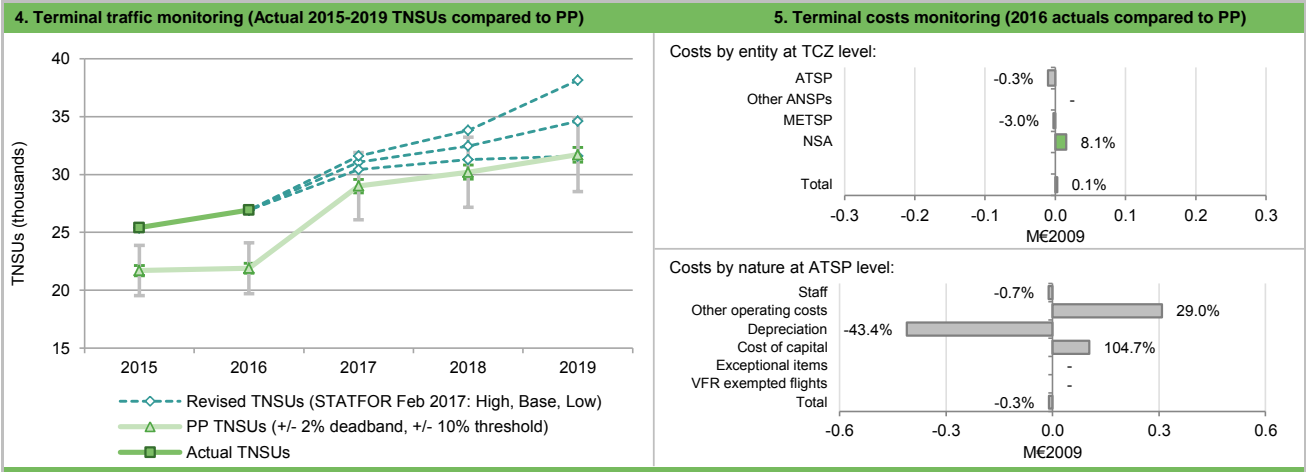
MALTA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services																														
· Malta TCZ represents 0.4% of the SES terminal ANS determined costs in 2016	· Is this TCZ applying traffic risk sharing?	Yes																												
· ATSP: MATS	· Airports with fewer than 70,000 IFRs ATMs: 1 · Airports with between 70,000 and 225,000 IFRs ATMs: 0 · Airports with more than 225,000 IFRs ATMs: 0																													
· National currency: EUR																														
· Number of airports in charging zone in 2016: 1, of which:																														
2. Terminal DUC monitoring at Charging Zone level																														
Malta: Data from RP2 Performance Plan (*See Note 1)		2015D	2016D	2017D	2018D	2019D																								
Terminal costs (nominal EUR)		3 800 840	4 520 832	5 505 759	5 490 582	5 760 674																								
Inflation %		1.7%	1.8%	1.7%	1.7%	1.7%																								
Inflation index (100 in 2009)		111.9	114.0	115.9	117.9	119.9																								
Real terminal costs (EUR2009)		3 395 566	3 967 374	4 750 956	4 658 663	4 806 127																								
Total terminal Service Units		21 700	21 900	29 000	30 200	31 700																								
Real terminal unit cost per Service Unit (EUR2009)		156.48	181.16	163.83	154.26	151.61																								
Malta: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A																								
Terminal costs (nominal EUR)		3 347 230	4 453 232																											
Inflation %		1.2%	0.9%																											
Inflation index (100 in 2009)		111.2	112.2																											
Real terminal costs (EUR2009)		3 011 060	3 970 252																											
Total terminal Service Units		25 400	26 933																											
Real terminal unit cost per Service Unit (EUR2009)		118.55	147.41																											
Difference between Actuals and Planned		2015	2016	2017	2018	2019																								
Terminal costs (nominal EUR)	in value	-453 610	-67 600																											
	in %	-11.9%	-1.5%																											
Inflation %	in p.p.	-0.5 p.p.	-0.9 p.p.																											
Inflation index (100 in 2009)	in p.p.	-0.8 p.p.	-1.8 p.p.																											
Real terminal costs (EUR2009)	in value	-384 506	2 877																											
	in %	-11.3%	0.1%																											
Total terminal Service Units	in value	3 700	5 033																											
	in %	17.1%	23.0%																											
Real terminal unit cost per Service Unit (EUR2009)	in value	-37.93	-33.74																											
	in %	-24.2%	-18.6%																											
3. Focus on terminal at State/Charging Zone level																														
<p>This analysis focuses on Malta Terminal Charging Zone (TCZ) comprising only Malta international airport (LMML).</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (147.41 €2009) is -18.6% lower than planned in the PP (181.16 €2009). This difference is mainly driven by higher than planned TNSUs (+23.0%) since the actual terminal costs in real terms are in line with the PP (+0.1%, or +0.003 M€2009).</p> <p>Terminal service units Traffic risk sharing applies in TCZ. The difference between actual and planned TNSUs (+23.0%) falls outside of the ±2% dead band, but stay below the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ATSP and the airspace users, the former retaining a gain of 0.2 M€2009.</p> <p>According to STATFOR February 2017 <u>base</u> TNSU growth scenario, the terminal TNSUs for Malta are expected exceed the ±2% dead band, but stay below the +10% threshold foreseen in the traffic risk-sharing mechanism for the remainder of RP2. It is noted that the determined TNSUs chosen in the adopted PP for 2015-2016 were below the STATFOR February 2014 <u>low</u> TNSU growth scenario at the time of PP adoption, while the TNSUs selected for the revised PP (2017-2019) are in line with STATFOR February 2016 <u>base</u> TNSU growth scenario. See also Note 1 at the end of this Report.</p> <p>Terminal costs In nominal terms, actual terminal costs are -1.5% (-0.1 M€) lower than planned. However, since the actual inflation index is also lower than planned (-1.8 p.p.), actual terminal costs are in line with the plan when expressed in real terms (+0.1%, or +0.003 M€2009).</p> <p>The variation in terminal costs in real terms are primarily driven by higher costs for NSA (+8.1%, or +0.02 M€2009), while the costs are lower than planned for the MET service provider (-3.0%, or -0.003 M€2009) and MATS (-0.3%, or -0.01 M€2009). A detailed analysis at ATSP level is provided in Box 12.</p> <p>There are no costs exempt from cost-sharing reported for Malta TCZ.</p>		<table border="1"> <caption>Difference between actual and determined terminal costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-11.3%</td> </tr> <tr> <td>2016</td> <td>0.1%</td> </tr> <tr> <td>2017</td> <td>0%</td> </tr> <tr> <td>2018</td> <td>0%</td> </tr> <tr> <td>2019</td> <td>0%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	-11.3%	2016	0.1%	2017	0%	2018	0%	2019	0%												
Year	Difference (%)																													
2015	-11.3%																													
2016	0.1%																													
2017	0%																													
2018	0%																													
2019	0%																													
		<table border="1"> <caption>Difference between actual and planned terminal service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>17.1%</td> </tr> <tr> <td>2016</td> <td>23.0%</td> </tr> <tr> <td>2017</td> <td>0%</td> </tr> <tr> <td>2018</td> <td>0%</td> </tr> <tr> <td>2019</td> <td>0%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	17.1%	2016	23.0%	2017	0%	2018	0%	2019	0%												
Year	Difference (%)																													
2015	17.1%																													
2016	23.0%																													
2017	0%																													
2018	0%																													
2019	0%																													
		<table border="1"> <caption>Terminal DUC (PP, 2015-2019) vs Terminal unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>Terminal DUC (PP, 2015-2019)</th> <th>Terminal unit costs (actual)</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>156.48</td> <td>118.55</td> <td>-24.2%</td> </tr> <tr> <td>2016</td> <td>181.16</td> <td>147.41</td> <td>-18.6%</td> </tr> <tr> <td>2017</td> <td>163.83</td> <td>154.26</td> <td>-9.5%</td> </tr> <tr> <td>2018</td> <td>154.26</td> <td>151.61</td> <td>-1.7%</td> </tr> <tr> <td>2019</td> <td>151.61</td> <td>151.61</td> <td>0%</td> </tr> </tbody> </table>					Year	Terminal DUC (PP, 2015-2019)	Terminal unit costs (actual)	Difference (%)	2015	156.48	118.55	-24.2%	2016	181.16	147.41	-18.6%	2017	163.83	154.26	-9.5%	2018	154.26	151.61	-1.7%	2019	151.61	151.61	0%
Year	Terminal DUC (PP, 2015-2019)	Terminal unit costs (actual)	Difference (%)																											
2015	156.48	118.55	-24.2%																											
2016	181.16	147.41	-18.6%																											
2017	163.83	154.26	-9.5%																											
2018	154.26	151.61	-1.7%																											
2019	151.61	151.61	0%																											

MALTA: Terminal charging zone

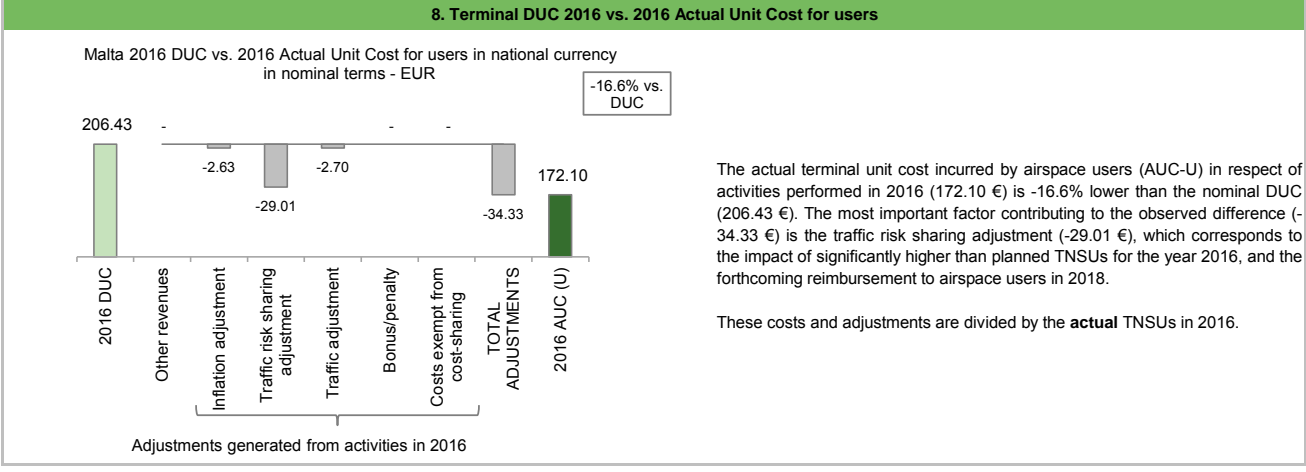
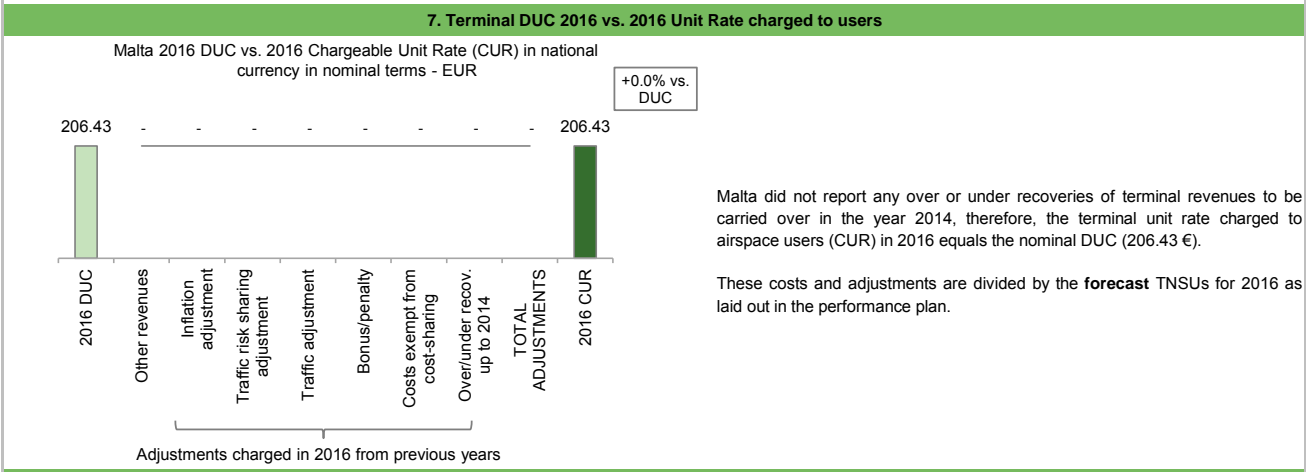
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



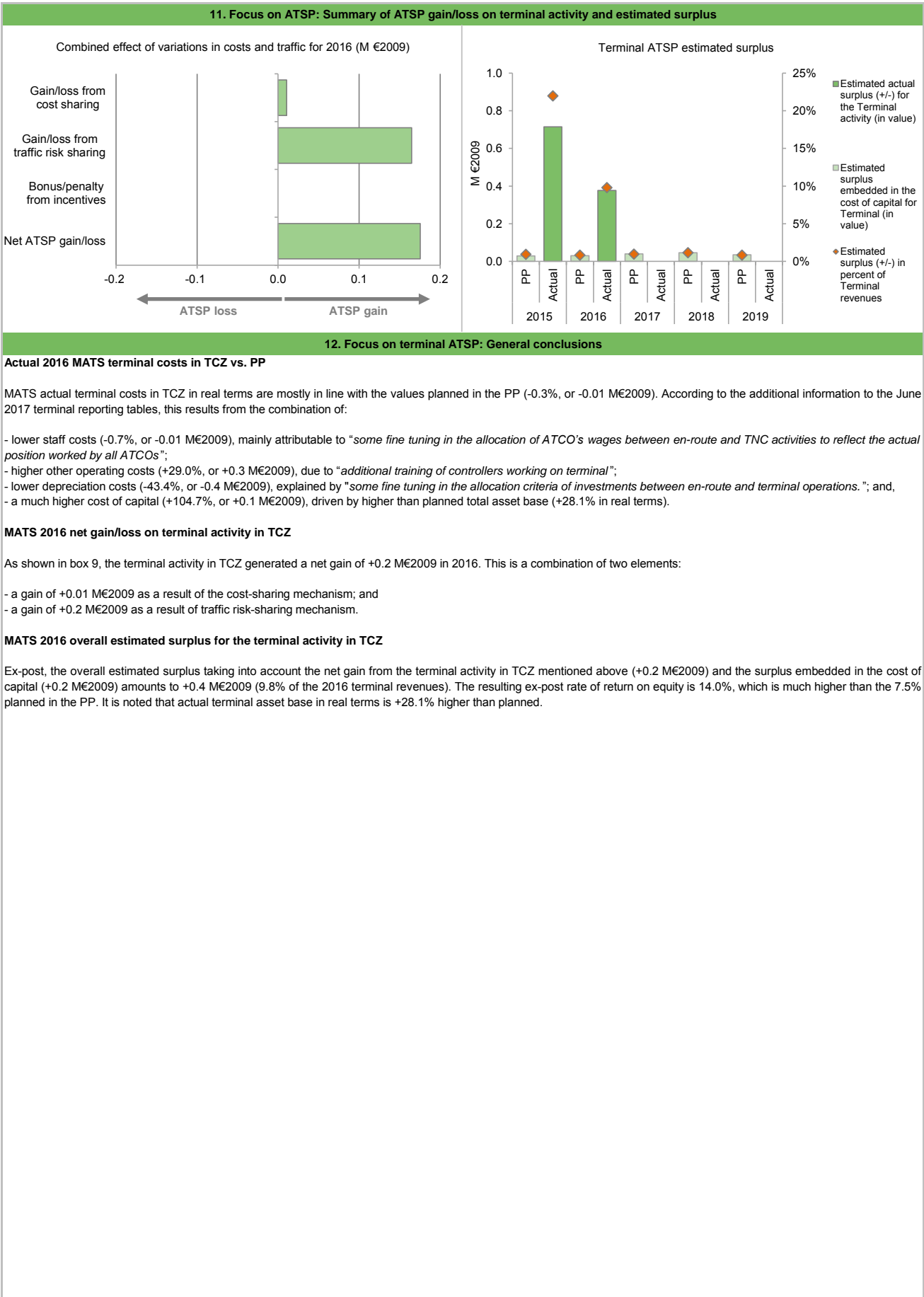
MALTA: Terminal ATSP (MATS)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	3 118	3 690			
Actual costs for the ATSP	2 750	3 680			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	368	10			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	368	10			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	17.1%	23.0%			
Determined costs for the ATSP (PP) - based on actual inflation	3 139	3 749			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	138	165			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	506	175			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 655	2 111	2 196	2 115	2 061
Estimated proportion of financing through equity (in %)	25.7%	19.5%	22.9%	26.5%	20.8%
Estimated proportion of financing through equity (in value)	426	411	504	560	428
Estimated proportion of financing through debt (in %)	74.3%	80.5%	77.1%	73.5%	79.2%
Estimated proportion of financing through debt (in value)	1 230	1 701	1 692	1 555	1 633
Cost of capital pre-tax (in value)	79	99	108	109	101
Average interest on debt (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
Interest on debt (in value)	49	68	68	62	65
Determined RoE pre-tax rate (in %)	6.9%	7.5%	8.0%	8.3%	8.2%
Estimated surplus embedded in the cost of capital for terminal (in value)	29	31	40	47	35
Overall estimated surplus (+/-) for the terminal activity	29	31	40	47	35
Revenue/costs for the terminal activity	3 118	3 690	4 193	4 102	4 261
Estimated surplus (+/-) in percent of terminal revenues	0.9%	0.8%	1.0%	1.1%	0.8%
Estimated ex-ante RoE pre-tax rate (in %)	6.9%	7.5%	8.0%	8.3%	8.2%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	3 023	2 705			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	3 023	2 705			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	209	202			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.9%	7.5%			
Estimated surplus embedded in the cost of capital for terminal (in value)	209	202			
Net ATSP gain(+)/loss(-) on terminal activity	506	175			
Overall estimated surplus (+/-) for the terminal activity	715	377			
Revenue/costs for the terminal activity	3 256	3 855			
Estimated surplus (+/-) in percent of terminal revenues	22.0%	9.8%			
Estimated ex-post RoE pre-tax rate (in %)	23.7%	14.0%			

MALTA: Terminal ATSP (MATS)

Monitoring of terminal COST-EFFICIENCY for 2016



MALTA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																									
Malta: Data from RP2 Performance Plan		(*See Note 1)	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)			15 844 908	16 745 957	17 857 802	18 429 483	18 982 242																		
Real terminal costs (EUR2009)			3 395 566	3 967 374	4 750 956	4 658 663	4 806 127																		
Real gate-to-gate costs (EUR2009)			19 240 474	20 713 331	22 608 758	23 088 146	23 788 369																		
En-route share (%)			82.4%	80.8%	79.0%	79.8%	79.8%																		
Malta: Actual data from Reporting Tables			2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)			15 153 971	16 776 608																					
Real terminal costs (EUR2009)			3 011 060	3 970 252																					
Real gate-to-gate costs (EUR2009)			18 165 031	20 746 860																					
En-route share (%)			83.4%	80.9%																					
Difference between Actuals and Planned (Actuals vs. PP)			2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)		in value	-1 075 443	33 528																					
		in %	-5.6%	0.2%																					
En-route share		in p.p.	1.1%	0.0%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																									
<p>In 2016, actual gate-to-gate ANS costs in real terms are +0.2% (+0.03 M€2009) higher than planned due to slightly higher than planned en-route (+0.2%, or +0.03 M€2009) and terminal (+0.1%, or +0.003 M€2009) costs. However, in nominal terms, gate-to-gate ANS costs 1.4% (-0.3 M€) lower than planned.</p> <p>The actual share of en-route in gate-to-gate ANS costs (80.9%) is in line with that planned PP for 2016 (80.8%).</p> <p>For MATS, the estimated gate-to-gate economic surplus in 2016 amounts to 1.7 M€2009 (Boxes 10 for the detailed analysis at charging zone level), corresponding to 9.1% of gate-to-gate ANS revenues.</p>			<table border="1"> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>					Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																							
2015	83%	17%																							
2016	85%	15%																							
2017	82%	18%																							
2018																									
2019																									
3. Technical notes on en-route and terminal information reported by Malta																									
<p>Note 1: Malta has submitted a request to the European Commission to revise their RP2 en-route cost-efficiency targets for the years 2017 to 2019. The figures shown in this report reflect: i) the <u>adopted</u> Performance Plan (EC Decision 2015/348 of 2 March 2015) for the years 2015 and 2016; and ii) the <u>revised</u> Performance Plan (submitted by Malta but still pending approval by the EC) for the years 2017 to 2019.</p> <p>A similar revision was also requested for the approved terminal determined unit costs for the period 2017 to 2019.</p>																									

PRB Annual monitoring report 2016

Volume 2 – Local Overview

DANUBE FAB

Version: 1.1

Date: 9 October 2017

DANUBE FAB

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	B			
	ANSPs	For Safety Culture MO	C	D			
	ANSPs	For all other MOs	C	C			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	N/A			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	N/A			
	ATM Specific Occurences (ATM-S)		100%	100%			

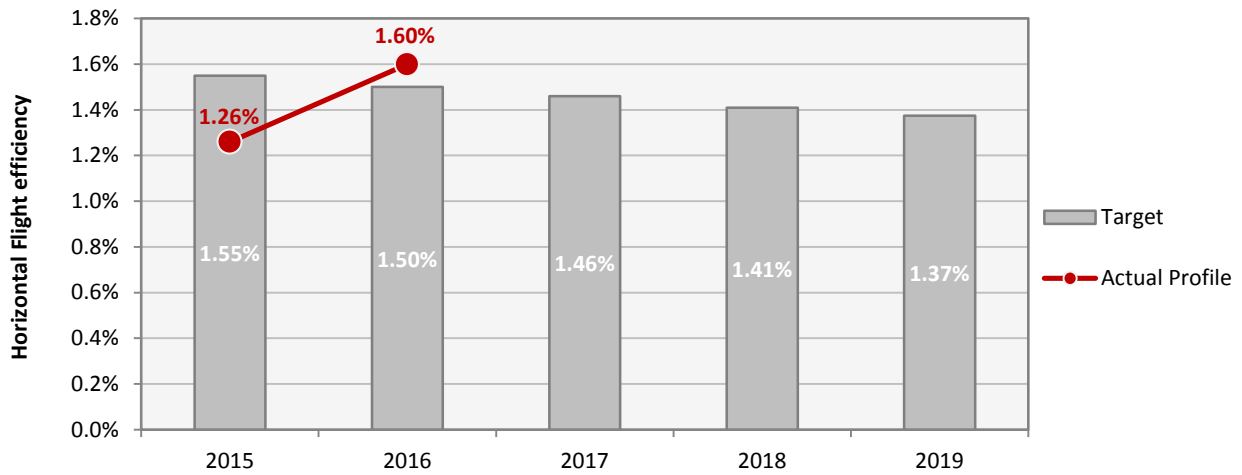
Observations

The lowest answer in the EoS M Components/areas of the States is Level "B" which is below the 2019 EoS M target level. All components are at this level.

DANUBE FAB

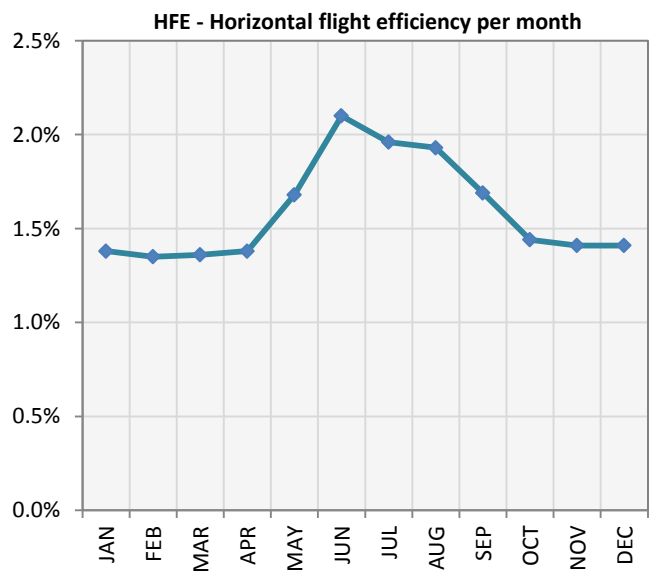
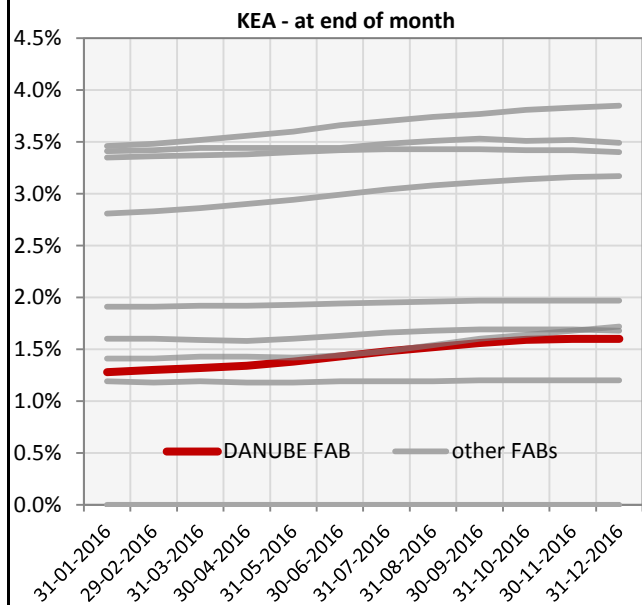
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	1.55%	1.50%	1.46%	1.41%	1.37%
Actual performance	1.26%	1.60%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	1.28%	1.30%	1.32%	1.34%	1.38%	1.43%	1.48%	1.52%	1.56%	1.59%	1.60%	1.60%
HFE	1.38%	1.35%	1.36%	1.38%	1.68%	2.10%	1.96%	1.93%	1.69%	1.44%	1.41%	1.41%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

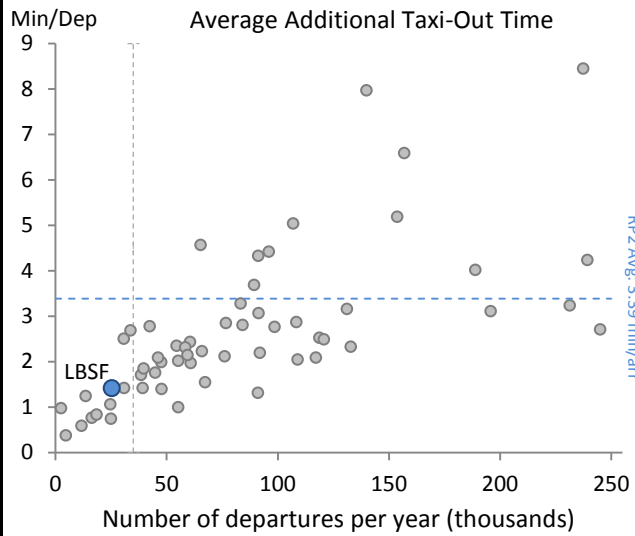
Observations

NM proposed measures: Implementation of cross-border FRA H24, with adjacent FABs/ACCs is recommended.

1. Overview

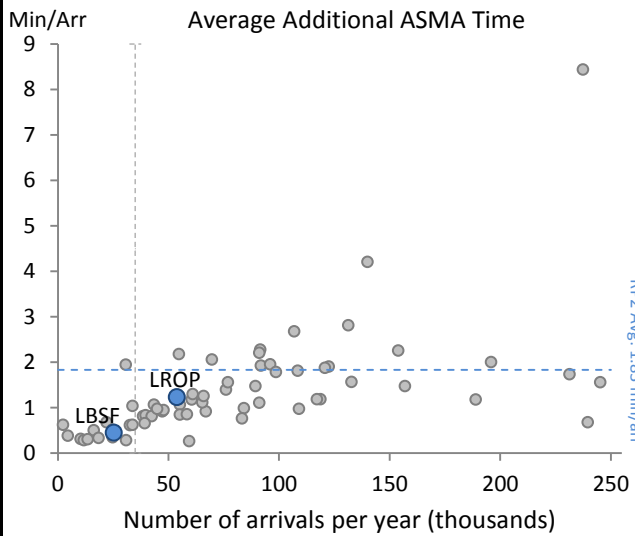
According to the available data, airports in Danube FAB contribute adequately to the European performance with low levels of additional times in line with the general performance for airports with those levels of traffic.
 In order to monitor the performance at Romanian airports, it is necessary to properly establish the Airport Operator Data Flow and/or address the remaining data issues.

2. Additional Taxi-Out Time



Like in 2015, the only airport in the Danube FAB for which the additional TXOT can be monitored is Sofia.
 The additional taxi-out time at LBSF is well below the average for airports in RP2, and its performance follows the general trend based on its traffic levels.

3. Additional ASMA Time



The monitored airports at the Danube FAB show additional times in the terminal area well below the RP2 average. This performance is commensurate with their levels of traffic.

DANUBE FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.04	0.04	0.04	0.05	0.06	
FAB Target	0.03	0.03	0.03	0.03	0.04	
Actual performance	0.03	0.00				
DANUBE FAB assessment of capacity performance						
<p>Although no difference is reported on FAB level for this indicator towards planned figures for 2016, in fact within the FAB there are deviations in performance. The targets for KPA Capacity are set on FAB level, but there are at least two important reasons to also analyse the variances towards planned figures on national level:</p> <ol style="list-style-type: none"> 1. The drivers behind the reported delay may be different; 2. The implementation of the incentive scheme is on national level. <p>With this regards the reported delay figure for Bulgaria in 2016 is 0.01 caused mainly entirely by weather.</p>						
Monitoring process for capacity performance						
<p>Republic of Bulgaria: Use of occupancy counts for family (group) sectors Sofia and Varna. Monitor the route network and sectorisation change's needs, as outgrowth of the continuous increase of numbers of aircraft and followed up by:</p> <ul style="list-style-type: none"> • Evaluation of sector capacities; • Evaluation of sector configurations and opening schemes; • Evaluation of human resources. <p>Romania: Monitoring is done through continuous checks of the PRU data portal (http://ansperformance.eu/data/performancearea/) to verify that the values are within limits and the discrepancies between the values pertaining to the past year and those of the current year are not following an ascending trend.</p>						
Application of Corrective Measures for Capacity						
<p>Republic of Bulgaria: There is a sharp increase of traffic and ANS demand was met with relocation of all available ATCOs holding a valid licence, after proper necessary transitional measures, at working positions in the ACC OPS room. Such measures comprise:</p> <ul style="list-style-type: none"> • Re-positioning of administrative and project staff holding ATCO licenses, as well as En-route Approach and Terminal services ATCOs; • Additional training of ATCOs related to acquisition of competence to work at working positions at all sector families (Sofia and Varna); • Increased flexibility of application of sector configuration aiming at the application of the optimal sector configurations, so as to provide for capacity; • Deferral of annual leave, where possible; • Reassessment of priority of projects and administrative tasks; • Increased number of shifts (19 shifts in total are applied in 2016 vs. 16 shifts in 2015, in order to cope with traffic peaks); • Overall improvements of operational efficiency and rostering; <p>Romania: None required</p>						
Capacity Planning						
<p>Republic of Bulgaria: According to Annex 5 of NOP for Bulgaria. The capacity planning need has been duly reflected by carrying out the en-route planning process together with NM, required by MNF IR.</p> <p>Romania: Current planning according to Chapter 2 – Traffic and Capacity, Romanian LSSIP 2017 - 2021/ European Network Operations Plan ed.1.1 The document is published on the Network Operations Portal (NOP).</p>						

Assessment of capacity performance
The achievement of the FAB targets for en route capacity during 2016 and the positive contribution to the Union-wide target, albeit with a reduction in traffic levels from 2015 are noted. The resolution of the capacity bottleneck at the interface with Turkey (Ankara ACC) which, the Network Manager reports, has led to a significant reduction in traffic complexity and will ensure unimpeded traffic growth from/to Middle East traffic flows for the next few years is also noted. The Network Manager expects DANUBE FAB to provide a positive contribution to the Union-wide target for en route capacity for the remainder of RP2 based on the latest traffic forecasts and the existing capacity plans (which already include reference to the airport developments in Turkey).
En route Capacity Incentive Scheme
DANUBE FAB does not apply a FAB wide en route capacity incentive scheme. Instead both Member States apply local incentive schemes which are contained in the relevant national section that follow.
Result of FAB Capacity Incentive Scheme
Not applicable.
Update on Military dimension of the plan
In the DANUBE FAB annual monitoring report, there was simply a reference to the section on the application of FUA.
Observations on Military dimension of the plan
FABs / States are required to report on how civil military coordination and cooperation has increased capacity.
Application of FUA
No new information was provided from what was reported in the 2015 DANUBE FAB annual monitoring report.
Observations of the Application of FUA
DANUBE FAB did not provide an update on the application of FUA within the FAB. Information on how the DANUBE FAB determines whether or not the optimum benefit has been provided to both civil and military airspace users would be appreciated.

DANUBE FAB

Monitoring of Airports Contribution to CAPACITY for 2016

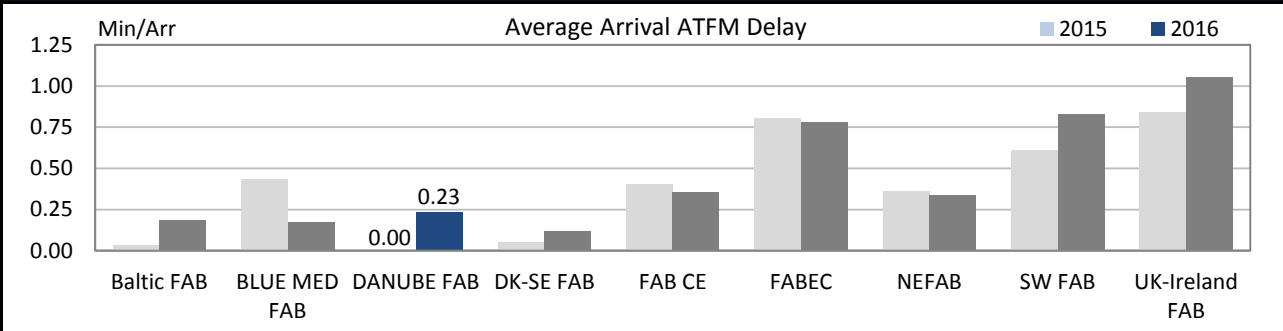
1. Overview

The scope of the FAB DANUBE performance plan comprises the terminal air navigation services at one airport in Bulgaria and two airports in Romania.

Airport-related ANS Capacity performance in terms of arrival ATFM delay has deteriorated to 0.23 min/arr. in 2016, while in 2015 no capacity issues at FAB DANUBE airports were observed.

Across Europe, FAB DANUBE still remains in the best-in-class group and adequately contributes to the European ANS Capacity performance.

2. Arrival ATFM Delay



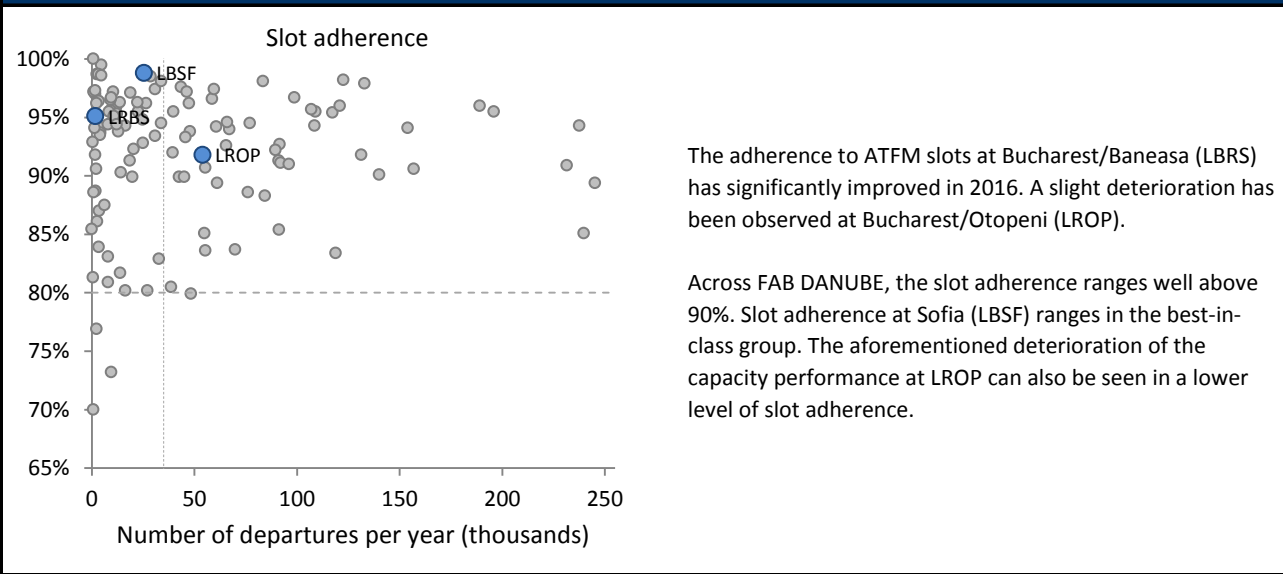
In 2016, arrival ATFM delay has significantly increased at Bucharest/Otopeni (LROP, 2015: 0.00 min/arr. vs 2016: 0.35 min/arr.), while no arrival ATFM delay was accrued by the other airports. This leads to the observed increase on the FAB level.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

The FAB DANUBE performance plan establishes a national target on arrival ATFM delay with a breakdown per airport for both States, Bulgaria and Romania. The targets are consistent with the observed historical performance and the plan suggests no capacity constraints for arriving traffic under the projected traffic conditions for RP2.

The FAB DANUBE performance plan presents an incentive scheme for the national targets on arrival ATFM delay for Bulgaria and Romania. The performance in Bulgaria ranges within the established deadband and results in no penalty. In Romania, the actual performance in 2016 is significantly lower than the established penalty threshold. However, the incentive scheme is based on CRSTMP reasons only and according to it the value falls within the deadband, so no penalty is applied.

4. ATFM Slot Adherence



5. Pre-departure Delay

For DANUBE FAB there is a very low level of accrued pre-departure delay in Bulgaria. The Airport Operator Data Flow has been established for Bucharest/Otopeni (LROP) in the course of 2015 and allows for an initial monitoring of pre-departure delay at LROP in 2016. This data flow is not yet established for Bucharest/Baneasa (LRBS).

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Bulgaria

Version: 1.1

Date: 9 October 2017

BULGARIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	40	B	B	B	B	B
BULATSA	86	D	E	C	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	N/A
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	BULATSA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	6	3
Legal/Judiciary	3	4
Occurrence reporting and Investigation	2	0
TOTAL	11	7
BULATSA	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	19	5

Observations
<p>All four reviewed EoSM Components/areas of the State are below target 'C'. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), 17 questions are below Level C.</p>

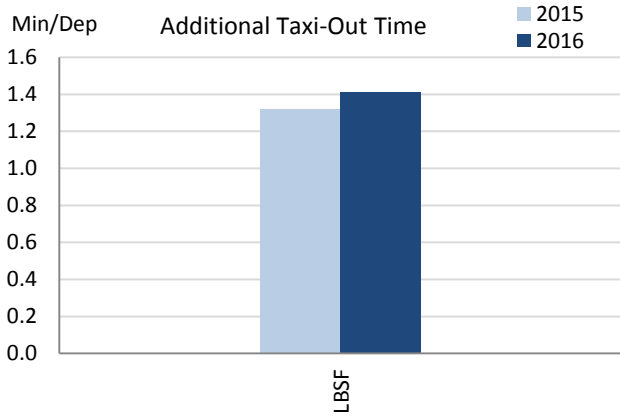
BULGARIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

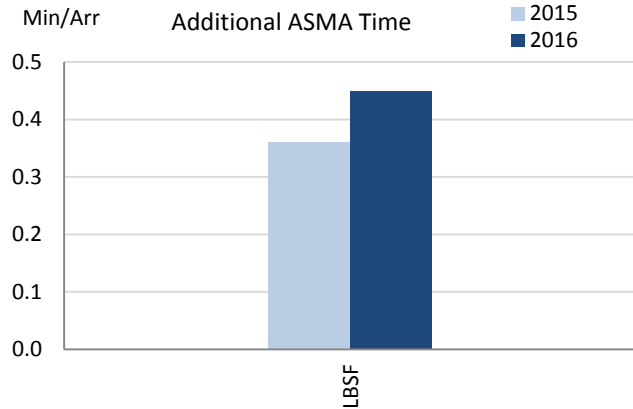
Bulgaria has identified one airport, Sofia (LBSF) as subject to RP2, for which the APDF is well established. There are no remarks regarding the environment indicators at Sofia airport, which are in line with the European trend given those levels of traffic.

2. Additional Taxi-Out Time



The additional taxi-out time in Sofia in 2016 (1.41 min/arr.) maintained similar levels as in 2015, regardless of the increase in traffic of more than 16%.

3. Additional ASMA Time



The additional time in the terminal area of Sofia has increased in 2016, especially in the months of January and May. Nevertheless, it is still one of the lowest additional ASMA times shown amongst the monitored airports Europe.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Sofia	LBSF	1.32	1.41				0.36	0.45			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.05	0.05	0.05	0.06	0.07	
Deadband +/-	0.02 - 0.05	0.00	0.00	0.02 - 0.06	0.00	
Actual performance	0.01	0.01				

National capacity incentive scheme

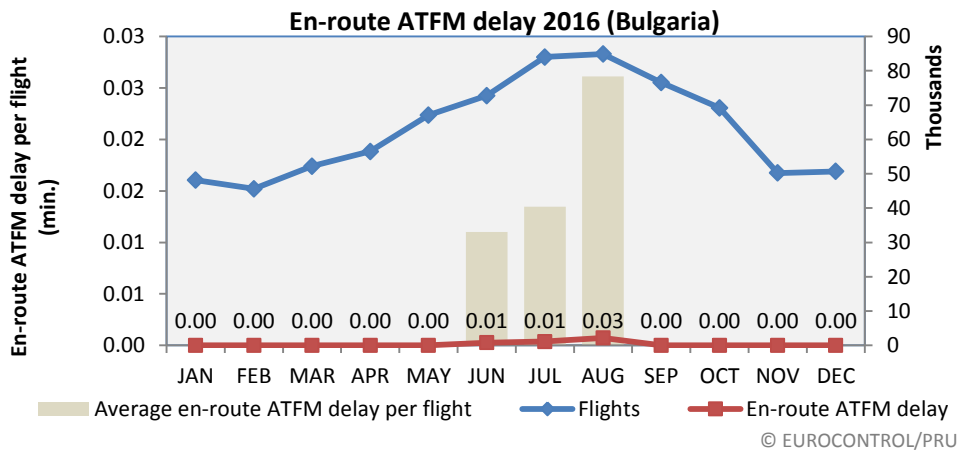
Delay value min/flight	% of revenue
> 0.11	-0.02
0.10 - 0.06	-0.01
0.05 - 0.02	Deadband
0.01 - >0.00	+0.01
= 0.00	+0.02

As detailed in corrigendum 3 to the DANUBE FAB performance plan, an actual result of 0.01 minutes delay per flight merits a bonus of 0.01% of the en route revenue for 2016 (178,134 k BGN for 2016) giving a bonus of 17,813 BGN.

Compliance issues relating to national capacity incentive scheme

The corrigendum to the performance plan addressed most of the compliance issues identified by the PRB. However one issue remained and was highlighted by the PRB in the annual monitoring report 2015: The incentive schemes are not linked to FAB performance. This issue has not been addressed in the 2016 DANUBE FAB monitoring report.

Observations regarding national capacity performance



En-route ATFM delay per flight (Bulgaria)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.01

The continued positive contribution to DANUBE FAB, and Union-wide targets from Bulgaria, is noted. The ATFM delays were primarily due to adverse weather phenomena. The Network Manager reports a significant reduction in traffic complexity in Bulgaria since a capacity bottleneck associated with the interface with Turkey has been resolved. The Network Manager is confident that this improvement will ensure unimpeded traffic growth from and to the Middle East. It is noted that the Network Manager does not expect any capacity problems in Bulgaria for the remainder of RP2.

Planning and Effective Use of CDRs

Bulgaria did not provide any data on this indicator

Observations on Planning and effective Use of CDRs

It is noted that Bulgaria, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 37%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%

Procedure 3 is not applied within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

BULGARIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

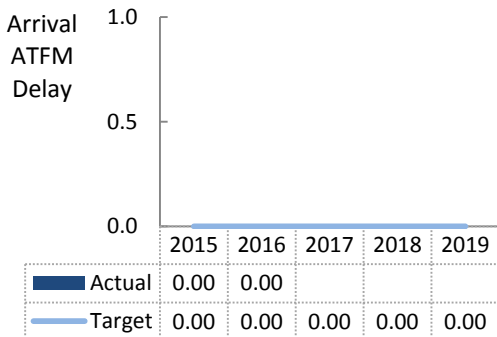
In Bulgaria, ANS performance at Sofia (LBSF) airport are subject to RP2. The national target on arrival ATFM delay of 0 min/arr. is fully met in 2016. The actual performance in terms of arrival ATFM delay ranges within the incentive deadband and results in no financial incentive.

Next to the excellent performance in terms of arrival ATFM delay, Bulgaria shows a high level of compliance with ATFM slots and a negligible amount of pre-departure delay. These levels represent best-in-class performance across Europe.

The local performance is commensurate with the traffic and shows no congestion of capacity constraints.

Bulgaria adequately contributes to the DANUBE FAB and European ANS Capacity related performance.

2. Arrival ATFM Delay



Building on the excellent performance in 2015, there is no reported arrival ATFM delay for Sofia (LBSF) in 2016. This achieved performance is commensurate with the level of air traffic.

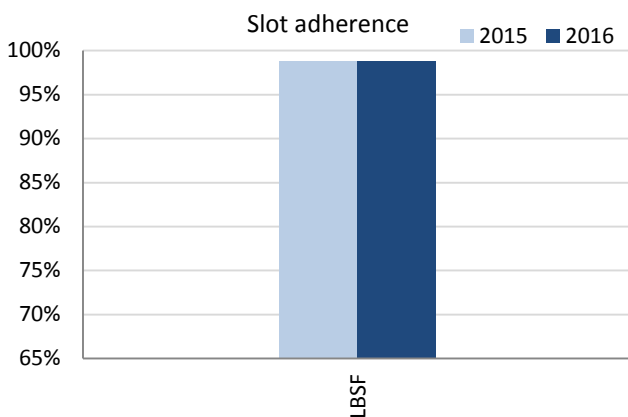
The constant national target of 0.00 min/arr. is fully met for 2015 and 2016.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Bulgaria has established a national target on arrival ATFM delay.

The DANUBE PP presents an incentive scheme. The achieved performance ranges within the established deadband and results in no financial incentive.

4. ATFM Slot Adherence



Compliance with ATFM slots at LBSF range just under 99% which reflects best-in-class performance across Europe. This is constantly achieved in 2015 and 2016.

5. Pre-departure Delay

In 2016 a similar negligible share of pre-departure delay has been accrued at Sofia (LBSF).

6. Appendix

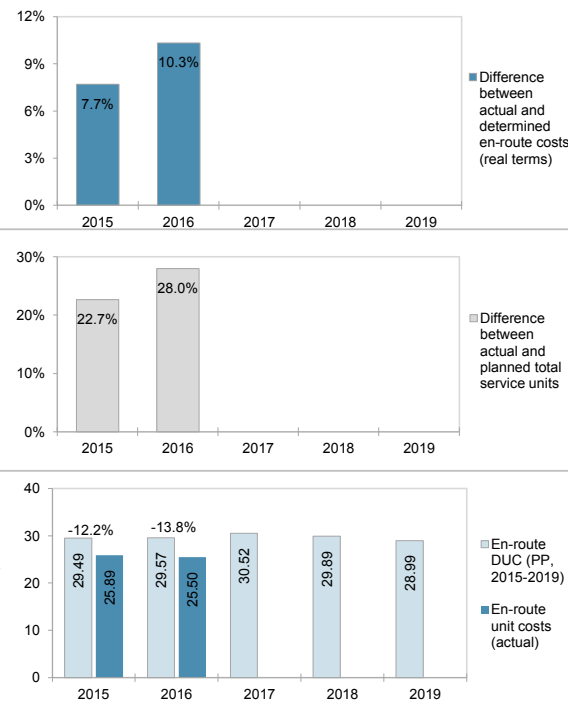
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Sofia	LBSF	0.00	0.00				98.8%	98.8%				0.04	0.03			

BULGARIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services								
<ul style="list-style-type: none"> Bulgaria ECZ represents 1.3% of the SES en-route ANS determined costs in 2016 ATSP: BULATSA FAB: DANUBE FAB National currency: BGN Exchange rate 2009: 1 EUR = 1.9553 BGN 								
2. En-route DUC monitoring at Charging Zone level								
Bulgaria: Data from RP2 Performance Plan		(*See Note 1)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal BGN)				166 771 377	172 805 739	219 350 068	228 283 095	232 773 544
Inflation %				0.9%	1.8%	1.1%	1.2%	1.4%
Inflation index (100 in 2009)				110.1	112.1	106.9	108.1	109.7
Real en-route costs (BGN2009)				151 495 007	154 219 178	205 254 233	211 080 244	212 260 655
Total en-route Service Units				2 627 000	2 667 000	3 439 000	3 611 824	3 745 039
Real en-route unit cost per Service Unit (BGN2009)				57.67	57.82	59.68	58.44	56.68
Real en-route unit cost per Service Unit (EUR2009)				29.49	29.57	30.52	29.89	28.99
Bulgaria: Actual data from Reporting Tables				2015A	2016A	2017A	2018A	2019A
En-route costs (nominal BGN)				173 870 778	178 955 967			
Inflation %				-1.1%	-1.3%			
Inflation index (100 in 2009)				106.6	105.2			
Real en-route costs (BGN2009)				163 171 301	170 155 585			
Total en-route Service Units				3 222 750	3 412 754			
Real en-route unit cost per Service Unit (BGN2009)				50.63	49.86			
Real en-route unit cost per Service Unit (EUR2009)				25.89	25.50			
Difference between Actuals and Planned				2015	2016	2017	2018	2019
En-route costs (nominal BGN)		in value		7 099 402	6 150 228			
		in %		4.3%	3.6%			
Inflation %		in p.p.		-2.0 p.p.	-3.1 p.p.			
Inflation index (100 in 2009)		in p.p.		-3.5 p.p.	-6.9 p.p.			
Real en-route costs (BGN2009)		in value		11 676 294	15 936 406			
		in %		7.7%	10.3%			
Total en-route Service Units		in value		595 750	745 754			
		in %		22.7%	28.0%			
Real en-route unit cost per Service Unit (BGN2009)		in value		-7.04	-7.97			
		in %		-12.2%	-13.8%			
Real en-route unit cost per Service Unit (EUR2009)		in value		-3.60	-4.07			
		in %		-12.2%	-13.8%			
3. Focus on en-route at State/Charging Zone level								
En-route unit cost								
<p>In 2016, the actual en-route unit cost in real terms (49.86 BGN2009 or 25.50 €2009) is -13.8% lower than planned in the PP (57.82 BGN2009 or 29.57 €2009). This difference results from the combination of significantly higher than planned TSUs (+28.0%) and higher than planned en-route costs in real terms (+10.3%, or +15.9 MBGN2009).</p>								
En-route service units								
<p>The difference between actual and planned TSUs (+28.0%) falls outside the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of additional en-route revenues is therefore shared between the ATSP and the airspace users, with the ATSP retaining +3.2 M€2009 (+6.2 MBGN2009).</p>								
<p>According to the additional information provided in the June 2017 en-route reporting tables, the significantly higher than planned TSUs were driven by "the situation in Ukraine and in particular the non-use/avoidance of the airspace of Simferopol and Dnipropetrovsk FIRs".</p>								
<p>According to STATFOR February 2017 <u>base</u> TSU growth scenario, the en-route TSUs for Bulgaria are expected to stay within the ±2% dead band foreseen in the traffic risk-sharing mechanism for the rest of RP2. The determined TSUs underpinning the adopted RP2 cost-efficiency targets for 2015-2016 were above STATFOR February 2014 <u>high</u> TSU growth scenario at the time of PP adoption, while the TSUs in the revised PP (2017-2019) are mostly in line with STATFOR February 2016 <u>base</u> TSU growth scenario. See also Note 1 at the end of this Report.</p>								
En-route costs								
<p>In nominal terms, actual en-route costs are +3.6% (+6.2 MBGN) higher than planned. However, since the actual inflation index is lower than planned (-6.9 p.p.), actual en-route costs are +10.3% (+15.9 MBGN2009 or +8.2 M€2009) above plans when expressed in real terms.</p>								
<p>The higher than planned en-route costs in real terms are primarily driven by higher costs for BULATSA (+11.4%, or +8.4 M€2009), while the costs recorded for NSA/EUROCONTROL are below plans (-4.0%, or -0.2 M€2009). A detailed analysis at ATSP level is provided in Box 12.</p>								
<p>Costs exempt from cost-sharing are reported for a total amount of -0.1 M€2009 comprising -0.3 M€2009 for unforeseen changes in national taxation law and +0.2 M€2009 for the variation in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>								



BULGARIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

4. En-route traffic monitoring (Actual 2015-2019 TSUs compared to PP)

5. En-route costs monitoring (2016 actuals compared to PP)

Costs by entity at ECZ level:

ATSP	11.4%
Other ANSPs	-
METSP	-
NSA/EUROCONTROL	-4.0%
Total	10.3%

Costs by nature at ATSP level:

Staff	16.5%
Other operating costs	5.3%
Depreciation	-
Cost of capital	-
Exceptional items	-11.2%
VFR exempted flights	-
Total	11.4%

6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	-113	-349			
	New cost item required by law	0	0			
	International agreements	-16	232			
by entity	ATSP	-113	-349			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-16	232			
Total costs exempt from cost sharing		-129	-117			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Bulgaria 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - BGN

The en-route unit rate charged to airspace users (CUR) in 2016 is 44.16 BGN. This is -31.8% lower than the nominal DUC (64.79 BGN). The difference between these two figures (-20.64 BGN) mainly relates to and traffic risk sharing adjustment (-13.77 BGN), reflecting the over-recovery due to higher than planned TSUs in the year 2014, and inflation adjustment (-5.73 BGN), which reflects the impact of lower than planned inflation index for the year 2014.

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the performance plan.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Bulgaria 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - BGN

The actual en-route unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (49.30 BGN) is -23.9% (or -15.50 BGN) lower than the nominal DUC (64.79 BGN). The most important factors contributing to the observed difference are: the traffic risk sharing adjustment (-10.25 BGN), the traffic adjustment (-2.00 BGN) and the inflation adjustment (-3.11 BGN). Traffic risk sharing and traffic adjustments reflect the gain of additional revenues due to significantly higher than planned TSUs in 2016, while the inflation adjustment reflects the impact of lower than planned inflation index in 2016. These costs will be reimbursed to airspace users in 2018.

It is also noted that Bulgaria has reported a performance bonus for capacity under the capacity incentive scheme for en-route activity in 2016 amounting to 17 813 BGN, which, although not reported in the June 2017 submission of en-route reporting tables, is reflected in this calculation (+0.01 BGN). See also **Note 2** at the end of this Report.

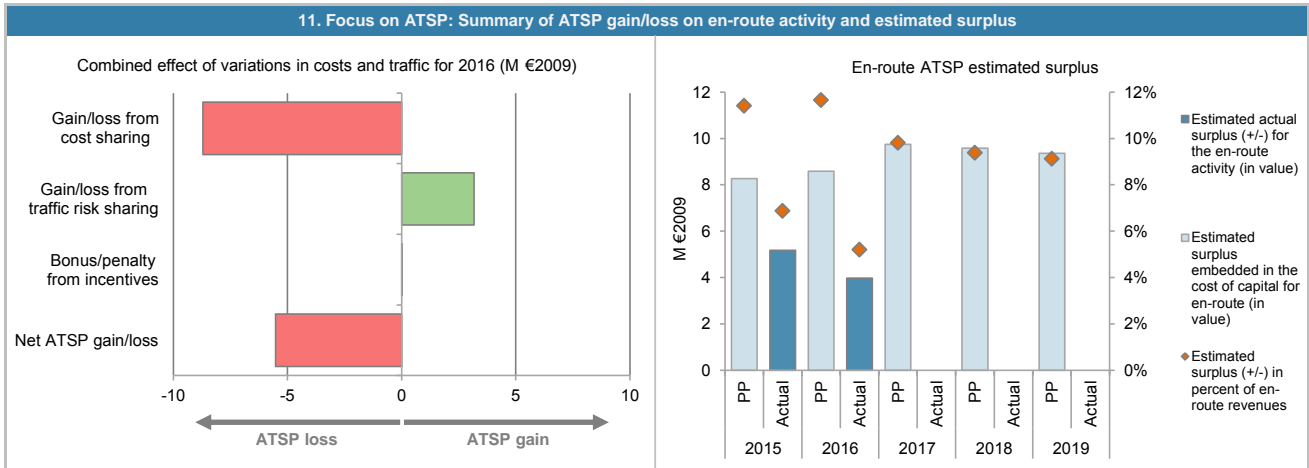
These costs and adjustments are divided by the **actual** TSUs in 2016.

BULGARIA: En-route ATSP (BULATSA)**Monitoring of en-route COST-EFFICIENCY for 2016**

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	72 403	73 634			
Actual costs for the ATSP	79 219	81 994			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-6 816	-8 360			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-113	-349			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-6 929	-8 709			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	22.7%	28.0%			
Determined costs for the ATSP (PP) - based on actual inflation	68 806	72 165			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	3 027	3 175			
Incentives ('000 €2009) (*See Note 2)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	9	9			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-3 892	-5 526			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	118 036	122 591	139 148	136 924	133 706
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	118 036	122 591	139 148	136 924	133 706
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	8 263	8 581	9 740	9 585	9 359
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	7.0%	7.0%	7.0%	7.0%	7.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	8 263	8 581	9 740	9 585	9 359
Overall estimated surplus (+/-) for the en-route activity	8 263	8 581	9 740	9 585	9 359
Revenue/costs for the en-route activity	72 403	73 634	99 263	102 109	102 589
Estimated surplus (+/-) in percent of en-route revenues	11.4%	11.7%	9.8%	9.4%	9.1%
Estimated ex-ante RoE pre-tax rate (in %)	7.0%	7.0%	7.0%	7.0%	7.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	129 575	135 770			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	129 575	135 770			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	9 070	9 504			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	7.0%	7.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	9 070	9 504			
Net ATSP gain(+)/loss(-) on en-route activity	-3 892	-5 526			
Overall estimated surplus (+/-) for the en-route activity	5 178	3 978			
Revenue/costs for the en-route activity	75 327	76 469			
Estimated surplus (+/-) in percent of en-route revenues	6.9%	5.2%			
Estimated ex-post RoE pre-tax rate (in %)	4.0%	2.9%			

BULGARIA: En-route ATSP (BULATSA)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 BULATSA en-route costs vs. PP

In 2016, BULATSA actual en-route costs are +11.4% (+8.4 M€2009) higher, in real terms, than planned in the PP. According to the additional information to the June 2017 en-route reporting tables, this results from a combination of:

- higher staff costs (+16.5%, or +8.0 M€2009), mainly driven by i) "an increase of the salaries of ATM staff and in particular of the ACC ATCOs, as well as due to the payments related to ATCO-bonus scheme in response to both, significantly increased traffic levels and ATCO-hour productivity", and ii) "salaries for the supporting operational staff, including CNS, MET, AIS, etc. have also accounted for a moderate increase".
- higher other operating costs (+5.3%, or +0.4 M€2009). However, in nominal terms, the other operating costs are -1.1% lower than planned, primarily justified by lower costs for materials (i.e. power supply, heating and spare parts).
- lower depreciation costs (-11.2%, or -1.0 M€2009), mainly resulting from delays in the investment programme. Based on the information provided in the DANUBE FAB Monitoring Report 2016, the actual capex for 2016 in nominal terms is -36.4% lower than planned in PP.
- higher cost of capital (+10.8%, or +0.9 M€2009), primarily due to higher than planned asset base.

BULATSA net gain/loss on en-route activity in 2016

As shown in box 9, BULATSA generated a net loss of -5.5 M€2009 on the en-route activity. This is a combination of three elements:

- a loss of -8.7 M€2009 arising from the cost-sharing mechanism;
- a gain of +3.2 M€2009 arising from the traffic risk-sharing mechanism; and
- a gain of +0.009 M€2009 (or +18 '000BGN in nominal terms), corresponding to a bonus for BULATSA as part of the en-route capacity target incentive mechanism. This amount corresponds to 0.01% of BULATSA en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission. See also **Note 2** at the end of this Report.

The loss from cost-sharing mentioned above (-8.7 M€2009) includes amounts reported by BULATSA for costs exempt from cost-sharing (-0.3 M€2009). Should these costs not be deemed eligible by the European Commission, BULATSA would incur a net loss of -5.2 M€2009 for the en-route activity in 2016.

BULATSA overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-5.5 M€2009) and the surplus embedded in the actual cost of capital (+9.5 M€2009) amounts to +4.0 M€2009 (5.2% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 2.9%, which is lower than the 7.0% planned in the PP. It is noted that the total actual asset base is +10.8% higher, in real terms, than foreseen in the PP for 2016.

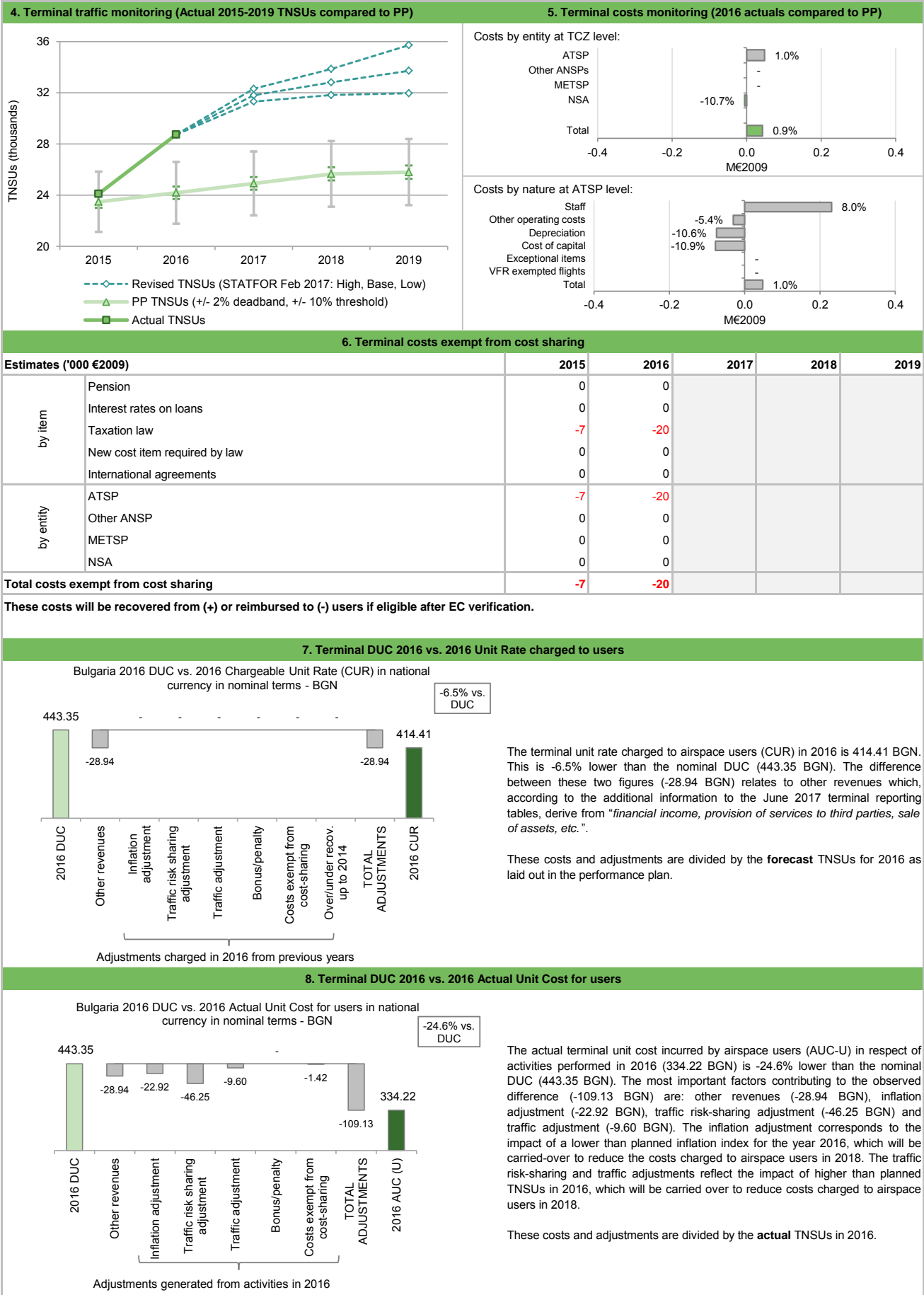
BULGARIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Bulgaria TCZ represents 0.4% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	BULATSA	· Airports with fewer than 70,000 IFRs ATMs:		1	
· National currency:	BGN	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	1,	of which:	· Airports with more than 225,000 IFRs ATMs:	0	
2. Terminal DUC monitoring at Charging Zone level					
Bulgaria: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal BGN)	10 590 551	10 725 206	10 795 526	10 687 693	10 572 836
Inflation %	0.9%	1.8%	2.2%	2.2%	2.2%
Inflation index (100 in 2009)	110.1	112.1	114.5	117.0	119.6
Real terminal costs (BGN2009)	9 620 450	9 571 629	9 426 992	9 131 927	8 839 324
Total terminal Service Units	23 487	24 191	24 917	25 665	25 800
Real terminal unit cost per Service Unit (BGN2009)	409.61	395.66	378.33	355.82	342.61
Real terminal unit cost per Service Unit (EUR2009)	209.49	202.35	193.49	181.98	175.22
Bulgaria: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal BGN)	10 387 116	10 154 849			
Inflation %	-1.1%	-1.3%			
Inflation index (100 in 2009)	106.6	105.2			
Real terminal costs (BGN2009)	9 747 924	9 655 471			
Total terminal Service Units	24 103	28 729			
Real terminal unit cost per Service Unit (BGN2009)	404.44	336.08			
Real terminal unit cost per Service Unit (EUR2009)	206.84	171.88			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal BGN)	in value -203 435	in value -570 357			
	in % -1.9%	in % -5.3%			
Inflation %	in p.p. -2.0 p.p.	in p.p. -3.1 p.p.			
Inflation index (100 in 2009)	in p.p. -3.5 p.p.	in p.p. -6.9 p.p.			
Real terminal costs (BGN2009)	in value 127 475	in value 83 843			
	in % 1.3%	in % 0.9%			
Total terminal Service Units	in value 616	in value 4 538			
	in % 2.6%	in % 18.8%			
Real terminal unit cost per Service Unit (BGN2009)	in value -5.18	in value -59.58			
	in % -1.3%	in % -15.1%			
Real terminal unit cost per Service Unit (EUR2009)	in value -2.65	in value -30.47			
	in % -1.3%	in % -15.1%			
3. Focus on terminal at State/Charging Zone level					
This analysis focuses on Bulgaria Terminal Charging Zone (TCZ) comprising only Sofia airport (LBSF).					
<p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (336.08 BGN2009 or 171.88 €2009) is -15.1% lower than planned in the PP (395.66 BGN2009 or 202.35 €2009). This difference results from a combination of significantly higher than planned TNSUs (+18.8%) and slightly higher than planned terminal costs in real terms (+0.9%, or +0.1 MBGN2009).</p> <p>Terminal service units The traffic risk sharing mechanism applies in Bulgaria's TCZ. The difference between actual and planned TNSUs (+18.8%) falls outside the +10% threshold foreseen in the traffic risk-sharing mechanism. Therefore the gain of additional terminal revenues is shared between the airspace users and the ATSP, with the latter retaining an amount of +0.2 M€2009. According to the additional information provided in the June 2017 terminal reporting tables, the growth in TNSUs is attributable "mainly to the growth of Sofia based operations of low costs airlines". According to STATFOR February 2017 base TNSU growth scenario, the TNSUs for Bulgaria are expected to abundantly exceed the +10% threshold for the remainder of RP2. It is noted that the determined TNSUs underpinning the adopted RP2 PP were close to STATFOR February 2014 low TNSU growth scenario at the time of PP adoption for all years RP2 (2015-2019).</p> <p>Terminal costs In nominal terms, the actual terminal costs are -5.3% (-0.6 MBGN) lower than planned. However, when expressed in real terms, since the actual inflation index is also lower than planned (-6.9 p.p.) the actual terminal costs are +0.9% higher than planned (+0.1 MBGN2009).</p> <p>The higher than planned terminal costs, in real terms, are mainly driven by higher costs for BULATSA (+1.0%, or +0.05 MBGN2009), while the costs for NSA are lower than planned (-10.7%, or -0.01 MBGN2009), which, according to the additional information to the June 2017 terminal reporting tables is "driven by the internal staff optimisations" and "less mission costs". It is noted that, actual costs for BULATSA are lower than planned when expressed in nominal terms (-5.2%, or -0.6 MBGN), but higher than planned when expressed in real terms due to the lower than planned inflation index. A detailed analysis at ATSP level is provided in Box 12. Costs exempt from cost-sharing for Bulgaria TCZ are reported for an amount of -20 '000 €2009 related to the unforeseen changes in the national taxation law. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>					

BULGARIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

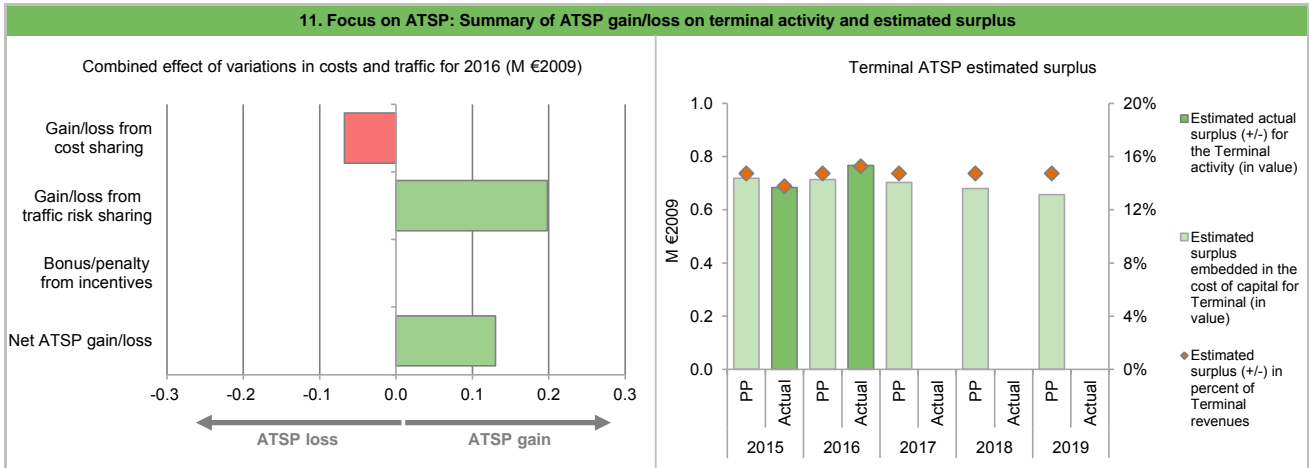


BULGARIA: Terminal ATSP (BULATSA)**Monitoring of terminal COST-EFFICIENCY for 2016**

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	4 876	4 848			
Actual costs for the ATSP	4 943	4 896			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-67	-48			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-7	-20			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-74	-68			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	2.6%	18.8%			
Determined costs for the ATSP (PP) - based on actual inflation	4 390	4 500			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	96	198			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	22	130			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	10 260	10 200	10 038	9 715	9 393
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	10 260	10 200	10 038	9 715	9 393
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	718	714	703	680	658
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	7.0%	7.0%	7.0%	7.0%	7.0%
Estimated surplus embedded in the cost of capital for terminal (in value)	718	714	703	680	658
Overall estimated surplus (+/-) for the terminal activity	718	714	703	680	658
Revenue/costs for the terminal activity	4 876	4 848	4 771	4 617	4 464
Estimated surplus (+/-) in percent of terminal revenues	14.7%	14.7%	14.7%	14.7%	14.7%
Estimated ex-ante RoE pre-tax rate (in %)	7.0%	7.0%	7.0%	7.0%	7.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	9 439	9 093			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	9 439	9 093			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	661	637			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	7.0%	7.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	661	637			
Net ATSP gain(+)/loss(-) on terminal activity	22	130			
Overall estimated surplus (+/-) for the terminal activity	683	767			
Revenue/costs for the terminal activity	4 966	5 026			
Estimated surplus (+/-) in percent of terminal revenues	13.8%	15.3%			
Estimated ex-post RoE pre-tax rate (in %)	7.2%	8.4%			

BULGARIA: Terminal ATSP (BULATSA)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 BULATSA terminal costs in TCZ vs. PP

BULATSA actual terminal costs, when expressed in real terms, are +1.0% (+0.05 M€2009 or +0.1 MBGN2009) higher than planned in the PP. However, this is mainly due to a lower than planned inflation index (-6.9 p.p.), as actual terminal costs are lower than planned in nominal terms (-5.2%, or -0.6 MBGN). According to the additional information to the June 2017 terminal reporting tables, this results from a combination of:

- higher staff costs (+8.0%, or +0.2 M€2009), primarily justified by "an increase of the salaries of ATM staff due to the significant traffic demand influenced also by the tourist choices shift related by the situation in Turkey";
- lower other operating costs (-5.4%, or -0.03 M€2009), due to "the lower costs for materials";
- lower depreciation costs (-10.6%, or -0.1 M€2009), mainly driven by a delay in commissioning of Advanced-Surface Movement Guidance and Control System (A-SMGCS) at Sofia airport; and,
- a lower cost of capital (-10.9%, or -0.1 M€2009) due to lower than planned total asset base.

BULATSA 2016 net gain/loss on terminal activity in TCZ

As shown in box 9, the terminal activity in TCZ generated a net gain of +0.1 M€2009 in 2016. This is a combination of two elements:

- a loss of -0.1 M€2009 as a result of the cost-sharing mechanism; and
- a gain of +0.2 M€2009 as a result of traffic risk-sharing mechanism.

The loss from cost-sharing mentioned above (-0.1 M€2009) includes amounts reported by BULATSA for costs exempt from cost-sharing (-0.02 M€2009). Should these costs not be deemed eligible by the European Commission, BULATSA would generate a net gain of +0.2 M€2009 for terminal activity in 2016.

BULATSA 2016 overall estimated surplus for the terminal activity in TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in TCZ mentioned above (+0.1 M€2009) and the surplus embedded in the cost of capital (+0.6 M€2009) amounts to +0.8 M€2009 (15.3% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 8.4%, which is higher than the 7.0% planned in the PP.

BULGARIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
Bulgaria: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	77 479 163	78 872 387	104 973 269	107 952 869	108 556 567																		
Real terminal costs (EUR2009)	4 920 191	4 895 223	4 821 251	4 670 345	4 520 700																		
Real gate-to-gate costs (EUR2009)	82 399 354	83 767 610	109 794 520	112 623 214	113 077 266																		
En-route share (%)	94.0%	94.2%	95.6%	95.9%	96.0%																		
Bulgaria: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	83 450 775	87 022 751																					
Real terminal costs (EUR2009)	4 985 386	4 938 102																					
Real gate-to-gate costs (EUR2009)	88 436 161	91 960 853																					
En-route share (%)	94.4%	94.6%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	6 036 807	8 193 243																					
in %	7.3%	9.8%																					
En-route share																							
in p.p.	0.3%	0.5%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
<p>In 2016, actual gate-to-gate ANS costs in real terms are +9.8% (+8.2 M€2009) higher than planned due to increases in both en-route costs (+10.3%, or +8.2 M€2009) and terminal costs (+0.9%, or +0.04 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (94.6%) is mostly in line with planned in the PP for 2016 (94.2%).</p> <p>For BULATSA, the estimated gate-to-gate economic surplus in 2016 amounts to 4.7 M€ (see boxes 10 for the detailed analysis at charging zone level), corresponding to 5.8% of gate ANS revenues.</p>																							
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>90.0%</td> <td>10.0%</td> </tr> <tr> <td>2016</td> <td>94.6%</td> <td>5.4%</td> </tr> <tr> <td>2017</td> <td>95.6%</td> <td>4.4%</td> </tr> <tr> <td>2018</td> <td>95.9%</td> <td>4.1%</td> </tr> <tr> <td>2019</td> <td>96.0%</td> <td>4.0%</td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	90.0%	10.0%	2016	94.6%	5.4%	2017	95.6%	4.4%	2018	95.9%	4.1%	2019	96.0%	4.0%
Year	En-route (%)	Terminal (%)																					
2015	90.0%	10.0%																					
2016	94.6%	5.4%																					
2017	95.6%	4.4%																					
2018	95.9%	4.1%																					
2019	96.0%	4.0%																					
3. Technical notes on en-route and terminal information reported by Bulgaria																							
<p>Note 1: Bulgaria has submitted a request to the European Commission to revise their RP2 en-route cost-efficiency targets for the years 2017 to 2019. The figures shown in this report reflect: i) the <u>adopted</u> Performance Plan (EC Decision 2015/348 of 2 March 2015) for the years 2015 and 2016; and ii) the <u>revised</u> Performance Plan (submitted by Bulgaria but still pending approval by the EC) for the years 2017 to 2019.</p> <p>Note 2: A bonus of 17 813 BGN for achieving the local en-route capacity target in 2016 is reported for BULATSA in the 2016 DANUBE FAB monitoring report. It is noted, that this amount is <u>not recorded</u> in the June 2017 submission of en-route reporting tables, since, according to the additional information to the en-route reporting tables:</p> <p><i>"Further to that and to the 2015 PRB Annual monitoring report, BULATSA should receive a bonus of BGN 19,339. The calculations for 2016 also show a bonus achieved to the amount of BGN 17,813. However, in previous statements made by Bulgaria, such bonuses will be rewarded after consultations with the airspace users. In view of that and taking into account the EC letter dated 25 October 2016, ref. MOVE/E3/AZ-hb Ares (2016) 6621262, Bulgaria would prefer to award the said bonus, after the FAB en-route capacity incentive schemes are brought in line with article 12 of the performance regulation and article 15 of the charging regulation. Subsequently the bonus for 2015 and 2016 will be consulted and forwarded to next years from the reference period and would be subject to the fulfilment of the statement of the EC letter."</i></p> <p>With respect to the bonus for 2015, it should be also noted that an amount of 38 678 BGN was recorded in the DANUBE FAB 2015 Monitoring Report. However, this is different from the amount reported in the additional information to the June 2017 en-route reporting tables (see extract above).</p> <p>For the purpose of consistency, the above mentioned bonuses stemming from the en-route capacity incentive scheme of 19 339 BGN for 2015, and 17 813 BGN for 2016 are included in this en-route cost-efficiency monitoring analysis. In particular, this affects the values presented in Box 8 for 2016 actual unit cost incurred by the users, Box 9 for ATSP gain/loss on en-route activity and Box 10 for en-route ATSP estimated surplus.</p>																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Romania

Version: 1.1

Date: 9 October 2017

ROMANIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	61	C	C	C	D	B
ROMATSA	84	D	D	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	N/A
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	CIAS	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	3	4
Occurrence reporting and Investigation	2	0
TOTAL	14	4
ROMATSA	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	19	5

Observations
<p>All four reviewed EoSM Components/areas of the State achieved the 2019 EoSM target Level "C". The only component below the target is Safety Culture, which is not verified by EASA. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.</p>

ROMANIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

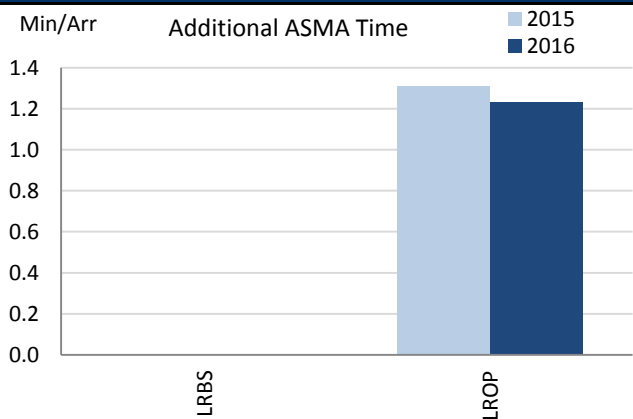
1. Overview

Romania as a member of the Danube FAB has identified two airports as subject to RP2. However currently the only available data concerning environment indicators is the ASMA times for Bucharest/ Otopeni. Member States shall empower the respective airport reporting entity to establish the Airport Operator Data Flow and/or address the remaining data issues.

2. Additional Taxi-Out Time

The additional taxi-out time indicator cannot be monitored at LRBS at the time being due to the lack of data. Submitted data for the monitoring of LROP does not allow for the taxi times calculation due to data quality issues.

3. Additional ASMA Time



The average additional ASMA times at Otopeni airport has decreased to 1.23 min/arr., despite a 12% increase in traffic. This performance is commensurate with the level of traffic

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

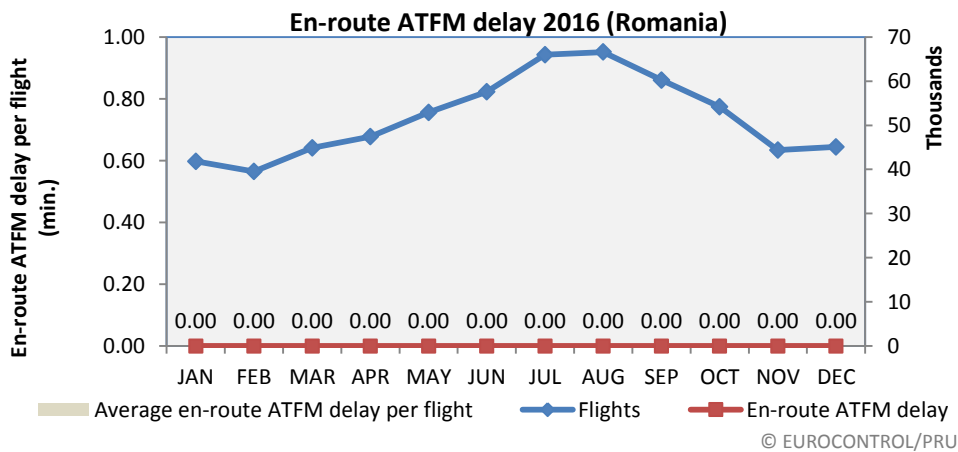
AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bucharest/ Băneasa	LRBS	n/a	n/a				n/a	n/a			
Bucharest/ Otopeni	LROP	n/a	n/a				1.31	1.23			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.00	0.00	0.00	0.00	0.00	Romania's incentive scheme does not include bonuses, only penalties if the performance targets are missed.
Deadband +/-	0.05	0.05	0.05	0.05	0.05	
Actual performance	0.03	0.00				

National capacity incentive scheme
 Romania achieved the national target for en route capacity performance in 2016 with zero actual delay for en route capacity performance. However, according to the Romanian performance scheme, no bonuses can be awarded (only penalties if delays are above 0.05 minutes per flight), therefore no bonus is due.

Compliance issues relating to national capacity incentive scheme
 In the assessment report of the DANUBE FAB RP2 performance plan, the PRB noted that the incentive scheme for Romania is non-symmetrical; no bonuses can be accrued, only penalties. Furthermore, the national incentive scheme for Romania and Bulgaria do not consider the overall FAB performance. Neither of these issue were addressed in the FAB monitoring report.

Observations regarding national capacity performance



En-route ATFM delay per flight (Romania)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00

The continued positive contribution to Union-wide performance from Romania during 2016 is noted. It is also noted that with the slight drop in traffic, Romania was able to handle the actual traffic with reduced sector configuration (Using 11 out of the maximum 16 sectors). The Network Manager does not expect any capacity problems for the remainder of RP2. The latest capacity plans for Romania refer to 14 sectors at maximum configuration instead of the 16/17 sectors planned in 2015 and the 20 sectors that were already in place back in 2014.

Planning and Effective Use of CDRs

Romania did not provide any data on these indicators.

Observations on Planning and effective Use of CDRs

It is noted that Romania, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 70%.
The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 4%
Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

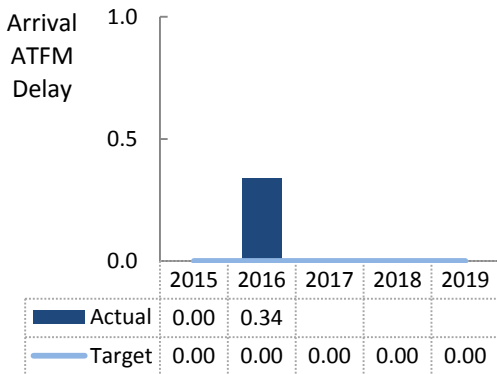
ROMANIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Romania, ANS at Bucharest/Baneasa (LRBS) and Bucharest/Otopeni (LROP) are subject to RP2. Romania has established a constant national target on arrival ATFM delay across the whole reference period. In 2016, due to a significant increase in arrival ATFM delay at LROP, this target is not met. No associated financial penalty is applied. Slot adherence at LRBS improved significantly by 17%. Monitoring of pre-departure delay is effective for 2016 onwards at LROP and needs further verification. The Airport Operator Data Flow is not yet established for LRBS.

2. Arrival ATFM Delay



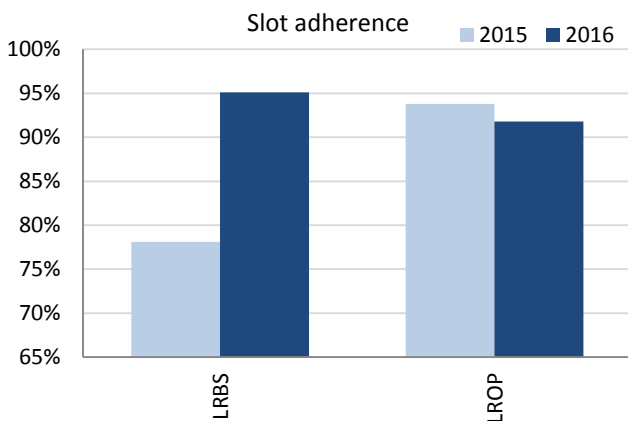
In 2016, arrival ATFM delay has significantly increased at Bucharest/Otopeni (LROP, 2015: 0.00 min/arr. vs 2016: 0.35 min/arr.), while no arrival ATFM delay is accrued at Bucharest/Baneasa (LRBS). The monitoring report points at capacity constraints during the month of July at LROP. The majority of the arrival ATFM delay has been accrued during October and November 2016 (OCT: 1.94 min/arr. and NOV: 1.78 min/arr.), coinciding with resurface works on runway 08R/26L.

The current national average for arrival ATFM delay ranges with 0.34 min/arr. well above the established target of 0.00 min/arr.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Romania has established a national target on arrival ATFM delay. The DANUBE PP presents an incentive scheme based on CRSTMP reasons. Although the achieved performance (all reasons) is significantly lower (2016: 0.35 min/arr.) than the target (i.e. 0.00 min/arr.), the actual value due to CRSTMP reasons only falls within the deadband.

4. ATFM Slot Adherence



There has been a significant improvement of the adherence to ATFM slots at Bucharest/Baneasa (LRBS, 2015: 78.1% vs 2016: 95.1%). A slight deterioration of the compliance with ATFM slots has been observed at Bucharest/Otopeni (LROP). In comparison to 2015, the adherence dropped by 2% (2015: 93.8%, 2016: 91.8%).

5. Pre-departure Delay

The Airport Operator Data Flow has been established for Bucharest/Otopeni (LROP) in the course of 2015 and allows for an initial monitoring of pre-departure delay at LROP in 2016. This data flow is not yet established for Bucharest/Baneasa (LRBS).

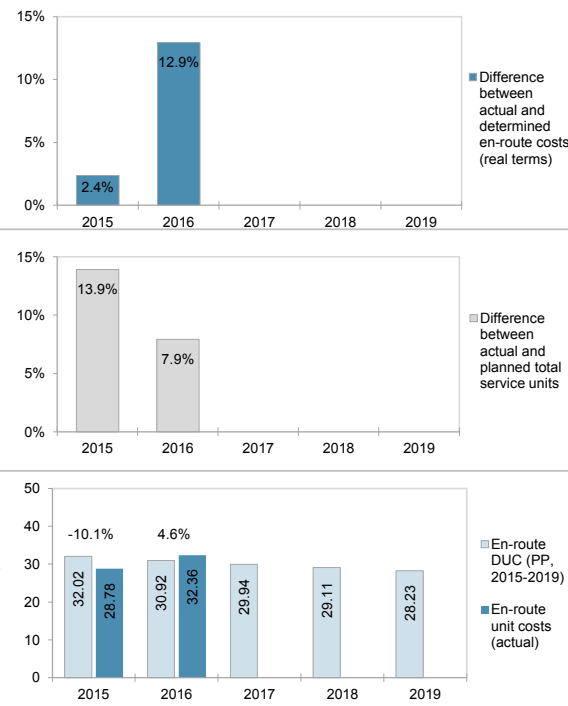
Pre-departure delay at LROP shows a seasonal behaviour with higher values in January, November and December in 2016.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bucharest/ Băneasa	LRBS	0.00	0.00				78.1%	95.1%				n/a	n/a			
Bucharest/ Otopeni	LROP	0.00	0.35				93.8%	91.8%				n/a	n/a			

ROMANIA: En-route charging zone

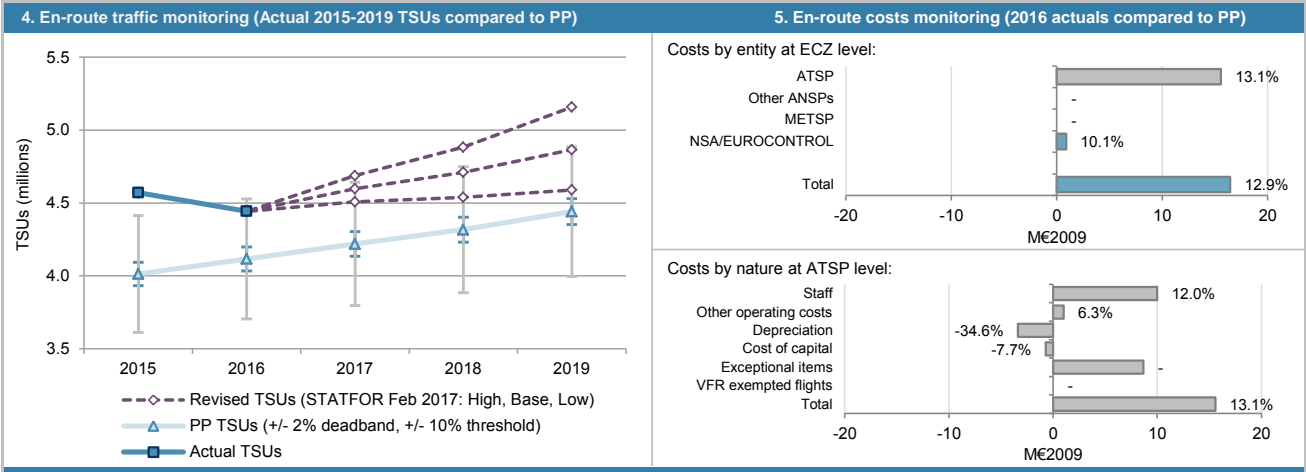
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services					
· Romania ECZ represents 2.1% of the SES en-route ANS determined costs in 2016 · ATSP: ROMATSA · FAB: DANUBE FAB · National currency: RON Exchange rate 2009: 1 EUR = 4.23303 RON					
2. En-route DUC monitoring at Charging Zone level					
Romania: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)	2015D	2016D	2017D	2018D	2019D
En-route costs (nominal RON)	690 507 397	704 650 329	718 659 958	735 119 853	753 216 461
Inflation %	3.1%	3.0%	2.8%	2.8%	2.7%
Inflation index (100 in 2009)	126.9	130.7	134.4	138.2	141.9
Real en-route costs (RON2009)	543 963 841	538 937 162	534 681 066	532 030 334	530 795 951
Total en-route Service Units	4 012 887	4 117 019	4 219 063	4 317 155	4 441 542
Real en-route unit cost per Service Unit (RON2009)	135.55	130.90	126.73	123.24	119.51
Real en-route unit cost per Service Unit (EUR2009)	32.02	30.92	29.94	29.11	28.23
Romania: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
En-route costs (nominal RON)	673 646 297	728 174 165			
Inflation %	-0.4%	-1.1%			
Inflation index (100 in 2009)	121.0	119.6			
Real en-route costs (RON2009)	556 843 745	608 611 836			
Total en-route Service Units	4 570 684	4 442 936			
Real en-route unit cost per Service Unit (RON2009)	121.83	136.98			
Real en-route unit cost per Service Unit (EUR2009)	28.78	32.36			
Difference between Actuals and Planned	2015	2016	2017	2018	2019
En-route costs (nominal RON)	in value -16 861 100	23 523 837			
	in % -2.4%	3.3%			
Inflation %	in p.p. -3.5 p.p.	-4.1 p.p.			
Inflation index (100 in 2009)	in p.p. -6.0 p.p.	-11.1 p.p.			
Real en-route costs (RON2009)	in value 12 879 904	69 674 674			
	in % 2.4%	12.9%			
Total en-route Service Units	in value 557 797	325 917			
	in % 13.9%	7.9%			
Real en-route unit cost per Service Unit (RON2009)	in value -13.72	6.08			
	in % -10.1%	4.6%			
Real en-route unit cost per Service Unit (EUR2009)	in value -3.24	1.44			
	in % -10.1%	4.6%			
3. Focus on en-route at State/Charging Zone level					
En-route unit cost In 2016, the actual en-route unit cost in real terms (136.98 RON2009 or 32.36 €2009) is +4.6% higher than planned in the PP (130.90 RON2009 or 30.92 €2009). The difference results from the combination of higher than planned TSUs (+7.9%) and significantly higher than planned en-route costs in real terms (+12.9%, or +69.7 MRON2009). No corrective measures are reported in the DANUBE FAB 2016 Monitoring Report. However, it indicates that "significant deviations from the inflation assumptions included in the Performance Plan [...] which contributed to the deterioration of inflation index and consequently the actual costs expressed in real terms (2009) artificially increased by 12.9%". See also Note 1 at the end of this Report.					
En-route service units The difference between actual and planned TSUs (+7.9%) falls outside the ±2% dead band, but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional en-route revenues are therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +4.6 M€2009. According to the additional information to June 2017 en-route reporting tables "the difference is due to the changes in the traffic flows of the zone following the closure of the Ukrainian airspace". It is noted that the TSUs selected in the PP are based on STATFOR February 2014 low TSU growth scenario for all years of RP2 at the time of PP adoption. According to the STATFOR February 2017 TSU base case forecast, the en-route TSUs for Romania are expected to remain just below the +10% threshold for the rest of RP2.					
En-route costs In nominal terms, actual en-route costs are +3.3% (+23.5 MRON) higher than planned. However, since the actual inflation index is significantly lower than planned (-11.1 p.p.), actual en-route costs are +12.9% (+69.7 MRON2009 or +16.5 M€2009) higher when expressed in real terms. The higher than planned en-route costs are driven by higher costs in real terms for all the reporting entities: ROMATSA (+13.1%, or +15.6 M€2009) and the NSA/EUROCONTROL (+10.1%, or +0.9 M€2009). A detailed analysis at ATSP level is provided in Box 12. Costs exempt from cost sharing are reported for a total amount of +0.6 M€2009 (+2.9 MRON in nominal terms) comprising +0.4 M€2009 relating to pension costs and +0.1 M€2009 relating to the variation in EUROCONTROL costs. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.					



ROMANIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



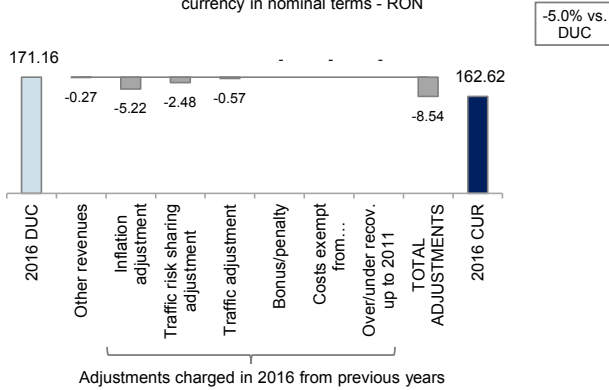
6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	438			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	27	128			
by entity	ATSP	0	438			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	27	128			
Total costs exempt from cost sharing		27	566			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Romania 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - RON

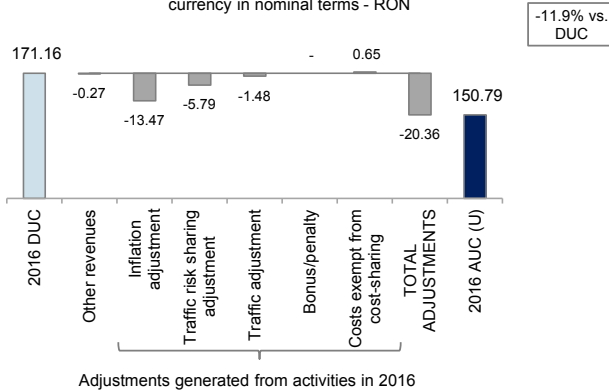


The en-route unit rate charged to airspace users (CUR) in 2016 is 162.62 RON. This is -5.0% lower than the nominal DUC (171.16 RON). The difference between these two figures (-8.54 RON) relates to the inflation adjustment (-5.22 RON), which reflects the impact of a lower than planned inflation index for the year 2014, the traffic risk sharing adjustment (-2.48 RON) and the traffic adjustment (-0.57 RON), which reflect the impact of higher than planned TSUs for the year 2014. These adjustments were carried-over to reduce the costs charged to airspace users in 2016.

These costs and adjustments are divided by the forecast TSUs for 2016 as laid out in the performance plan.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Romania 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - RON



The actual en-route unit cost incurred by airspace users (AUC-U) in respect of activities in 2016 (150.79 RON) is -11.9% (-20.36 RON) lower than the nominal DUC (171.16 RON). The most important factors contributing to this difference are: the inflation adjustment (-13.47 RON), which reflects the impact of significantly lower than planned inflation index in 2016, the traffic risk sharing adjustment (-5.79 RON) and the traffic adjustment (-1.48 RON), reflecting the impact of significantly higher than planned TSUs in 2016. Both over-recoveries will be carried-over to reduce the costs charged to airspace users in 2018.

These costs and adjustments are divided by the actual TSUs in 2016.

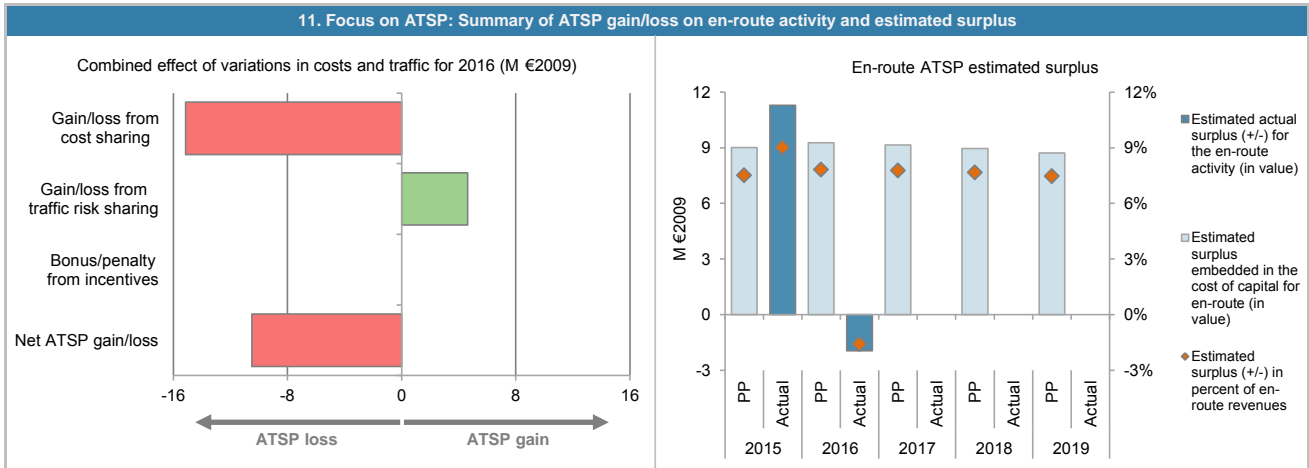
ROMANIA: En-route ATSP (ROMATSA)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	119 885	118 602			
Actual costs for the ATSP	122 482	134 180			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-2 597	-15 579			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	438			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-2 597	-15 140			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	13.9%	7.9%			
Determined costs for the ATSP (PP) - based on actual inflation	119 127	122 737			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	5 242	4 633			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	2 644	-10 507			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	136 694	137 931	134 293	130 340	125 874
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	136 694	137 931	134 293	130 340	125 874
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	9 008	9 275	9 140	8 960	8 714
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.6%	6.7%	6.8%	6.9%	6.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	9 008	9 275	9 140	8 960	8 714
Overall estimated surplus (+/-) for the en-route activity	9 008	9 275	9 140	8 960	8 714
Revenue/costs for the en-route activity	119 885	118 602	117 543	116 890	116 563
Estimated surplus (+/-) in percent of en-route revenues	7.5%	7.8%	7.8%	7.7%	7.5%
Estimated ex-ante RoE pre-tax rate (in %)	6.6%	6.7%	6.8%	6.9%	6.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	131 269	127 296			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	131 269	127 296			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	8 651	8 560			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.6%	6.7%			
Estimated surplus embedded in the cost of capital for en-route (in value)	8 650	8 560			
Net ATSP gain(+)/loss(-) on en-route activity	2 644	-10 507			
Overall estimated surplus (+/-) for the en-route activity	11 294	-1 947			
Revenue/costs for the en-route activity	125 126	123 673			
Estimated surplus (+/-) in percent of en-route revenues	9.0%	-1.6%			
Estimated ex-post RoE pre-tax rate (in %)	8.6%	-1.5%			

ROMANIA: En-route ATSP (ROMATSA)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 ROMATSA en-route costs vs. PP

In 2016, ROMATSA actual en-route costs in real terms are +13.1% (+15.6 M€2009) higher than planned. It is noted that the costs are also higher than planned in nominal terms (+3.5%, or +23.2 MRON). This results from the combination of:

- higher staff costs (+12.0%, or +10.0 M€2009);
- higher other operating costs (+6.3%, or +1.0 M€2009), although it is noted that actual other operating costs are lower than planned in nominal terms (-2.8%, or -2.5 MRON);
- lower depreciation costs (-34.6%, or -3.4 M€2009). Based on the information provided in the DANUBE FAB Monitoring Report 2016, the actual capex for 2016 in nominal terms is significantly lower (-54.3%) than planned in PP;
- lower cost of capital (-7.7%, or -0.7 M€2009), resulting from lower than planned asset base; and,
- exceptional costs (8.7 M€2009 in real or 44.0 MRON in nominal terms).

No drivers underlying the deviation of actual costs for 2016 outlined above are provided in the additional information to June 2017 en-route reporting tables or the DANUBE FAB 2016 Monitoring Report. Similarly, no description is provided on the nature of the actual exceptional costs (44.0 MRON). It is noted, that these costs were reported to result from "increase in the provisions for employee benefits" in the last years' submission of en-route reporting tables (June and November 2016).

ROMATSA net gain/loss on en-route activity in 2016

As shown in Box 9, ROMATSA generated a net loss of -10.5 M€2009 on the en-route activity. This is a combination of two elements:

- a loss of -15.1 M€2009 arising from the cost sharing mechanism; and,
- a gain of +4.6 M€2009 arising from the traffic risk sharing mechanism.

The loss from cost-sharing mentioned above (-15.1 M€2009) includes amounts reported by ROMATSA for costs exempt from cost-sharing (+0.4 M€2009). Should these costs not be deemed eligible by the European Commission, ROMATSA would incur a net loss of -11.0 M€2009 for the en-route activity in 2016.

ROMATSA overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-10.5 M€2009) and the surplus embedded in the actual cost of capital (+8.6 M€2009) amounts to an overall loss of -1.9 M€2009 (1.6% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is negative (-1.5%). This indicates that the part of surplus embedded in the cost of capital through the RoE included in the PP (+6.7%) was not sufficient to compensate for the losses arising from the cost sharing mechanism due to higher than planned en-route cost for ROMATSA.

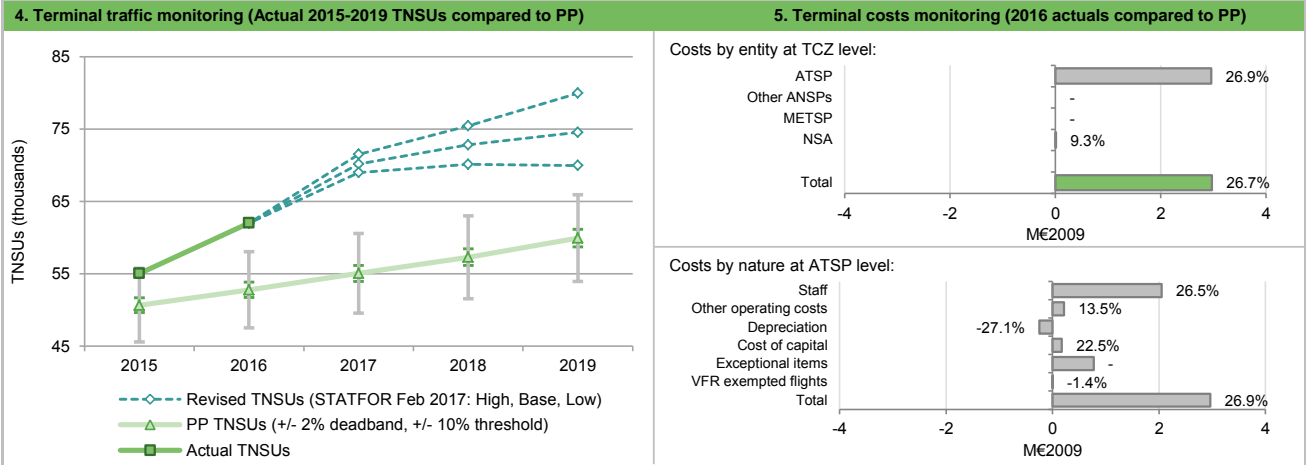
ROMANIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Romania TCZ represents 1.0% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No
· ATSP: ROMATSA					· Airports with fewer than 70,000 IFRs ATMs:	1
· National currency: RON					· Airports with between 70,000 and 225,000 IFRs ATMs:	1
· Number of airports in charging zone in 2016: 2, of which:					· Airports with more than 225,000 IFRs ATMs:	0
2. Terminal DUC monitoring at Charging Zone level						
Romania: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal RON)	57 805 814	61 551 138	65 441 925	67 976 072	69 682 160	
Inflation %	3.1%	3.0%	2.8%	2.8%	2.7%	
Inflation index (100 in 2009)	126.9	130.7	134.4	138.2	141.9	
Real terminal costs (RON2009)	45 537 923	47 076 109	48 688 615	49 196 511	49 105 417	
Total terminal Service Units	50 670	52 793	55 069	57 299	59 938	
Real terminal unit cost per Service Unit (RON2009)	898.72	891.71	884.14	858.60	819.28	
Real terminal unit cost per Service Unit (EUR2009)	212.31	210.66	208.87	202.83	193.54	
Romania: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal RON)	61 953 225	71 379 012				
Inflation %	-0.4%	-1.1%				
Inflation index (100 in 2009)	121.0	119.6				
Real terminal costs (RON2009)	51 211 245	59 658 958				
Total terminal Service Units	55 050	62 012				
Real terminal unit cost per Service Unit (RON2009)	930.27	962.05				
Real terminal unit cost per Service Unit (EUR2009)	219.77	227.27				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
Terminal costs (nominal RON)	in value 4 147 411	9 827 874				
	in % 7.2%	16.0%				
Inflation %	in p.p. -3.5 p.p.	-4.1 p.p.				
Inflation index (100 in 2009)	in p.p. -6.0 p.p.	-11.1 p.p.				
Real terminal costs (RON2009)	in value 5 673 322	12 582 849				
	in % 12.5%	26.7%				
Total terminal Service Units	in value 4 380	9 219				
	in % 8.6%	17.5%				
Real terminal unit cost per Service Unit (RON2009)	in value 31.55	70.34				
	in % 3.5%	7.9%				
Real terminal unit cost per Service Unit (EUR2009)	in value 7.45	16.62				
	in % 3.5%	7.9%				
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Romanian Terminal Charging Zone (TCZ) comprising Bucuresti / Henri Coanda (LROP) and Bucuresti / Baneasa-Aurel Vlaicu (LRBS) airports.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (962.05 RON2009 or 227.27 €2009) is +7.9% higher than planned in the PP (891.71 RON2009 or 210.66 €2009). This difference results from significantly higher than planned TNSUs (+17.5%), which were more than compensated by +26.7%, higher than planned terminal costs in real terms (+12.6 RON2009 or +3.0 ME2009).</p> <p>No corrective measures are reported in the DANUBE FAB 2016 Monitoring Report. However, it indicates that "significant deviations from the inflation assumptions included in the Performance Plan [...] which contributed to the deterioration of inflation index and consequently the actual costs expressed in real terms (2009) artificially increased by 26,7%". See also Note 1 at the end of this Report.</p> <p>Terminal service units The traffic risk sharing mechanism does not apply to Romania TCZ. The difference between actual and planned TNSUs (+17.5%) generates a gain of terminal revenues (+9.7 MRON2009) which will be carried-over and reimbursed to the airspace users in 2018. Based on the STATFOR February 2017 <u>base</u> TNSU growth scenario, Romania TNSUs are expected to significantly exceed the TNSUs planned in the PP for the remainder of RP2. It should be noted that the forecast TNSUs selected in the RP2 PP are in line with the STATFOR February 2014 <u>base</u> case TNSU growth scenario at the time of PP adoption.</p> <p>Terminal costs In nominal terms, the actual terminal costs are +16.0% (+9.8 MRON) higher than planned. However, since the actual inflation index is lower than planned (-11.1 p.p.), actual en-route costs are +26.7% (+12.6 MRON2009 or +3.0 ME2009) above plans when expressed in real terms.</p> <p>The deviation between 2016 actual and planned terminal costs in real terms mainly reflects the deviation for ROMATSA (+26.9%, or +3.0 ME2009), whereas NSA costs are slightly above the plan when expressed in real terms (+9.3%, or +0.01 ME2009), but is in line with the plan when expressed in nominal terms. A detailed analysis at ATSP level is provided in Box 12.</p> <p>Costs exempt from cost-sharing for Romania TCZ are reported for an amount of +0.1ME2009 (+0.3 MRON in nominal terms) relating to pension costs. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						

ROMANIA: Terminal charging zone

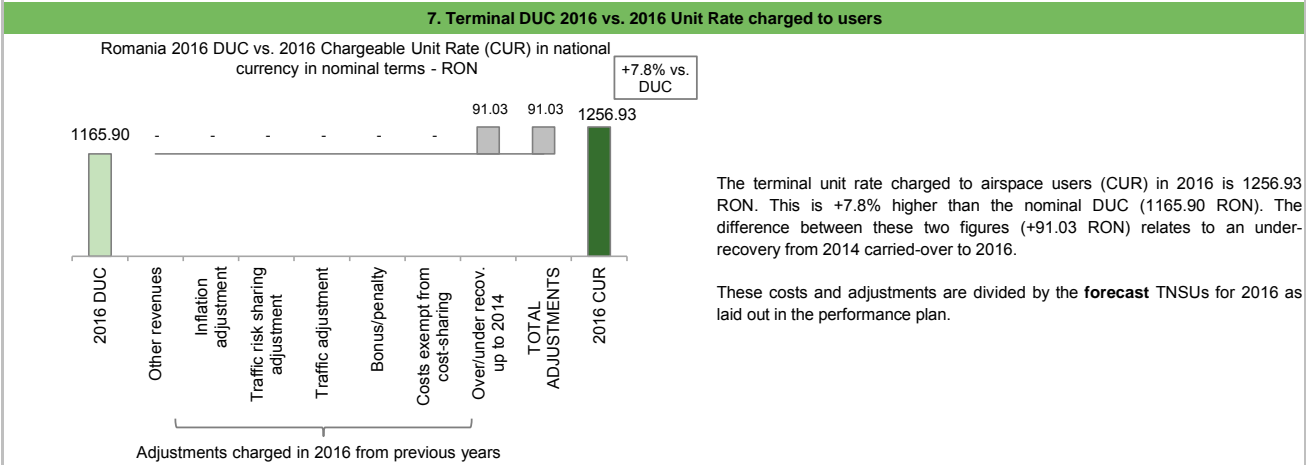
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

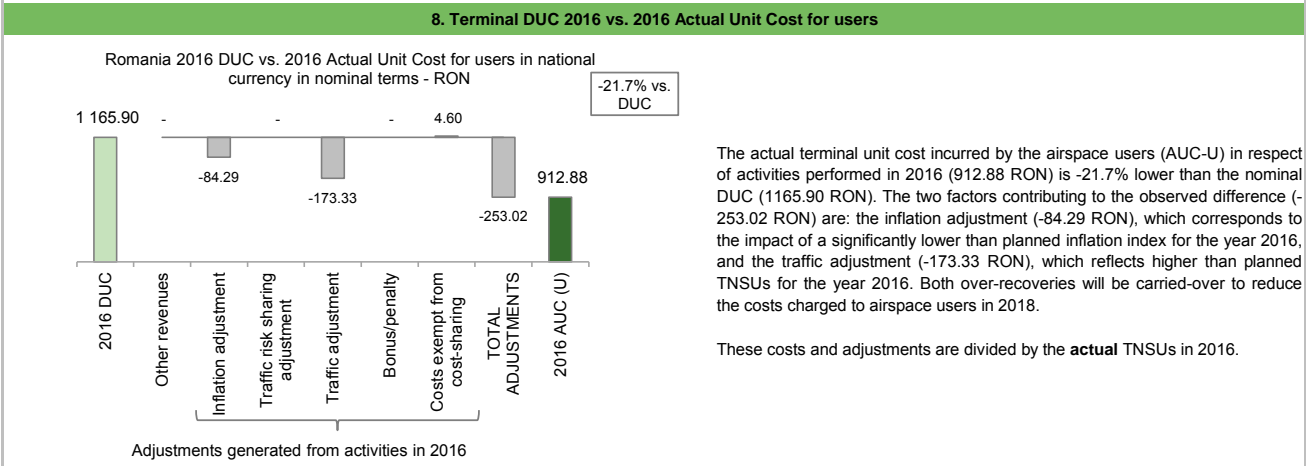
Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	56			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	56			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	56			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



The terminal unit rate charged to airspace users (CUR) in 2016 is 1256.93 RON. This is +7.8% higher than the nominal DUC (1165.90 RON). The difference between these two figures (+91.03 RON) relates to an under-recovery from 2014 carried-over to 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.



The actual terminal unit cost incurred by the airspace users (AUC-U) in respect of activities performed in 2016 (912.88 RON) is -21.7% lower than the nominal DUC (1165.90 RON). The two factors contributing to the observed difference (-253.02 RON) are: the inflation adjustment (-84.29 RON), which corresponds to the impact of a significantly lower than planned inflation index for the year 2016, and the traffic adjustment (-173.33 RON), which reflects higher than planned TNSUs for the year 2016. Both over-recoveries will be carried-over to reduce the costs charged to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

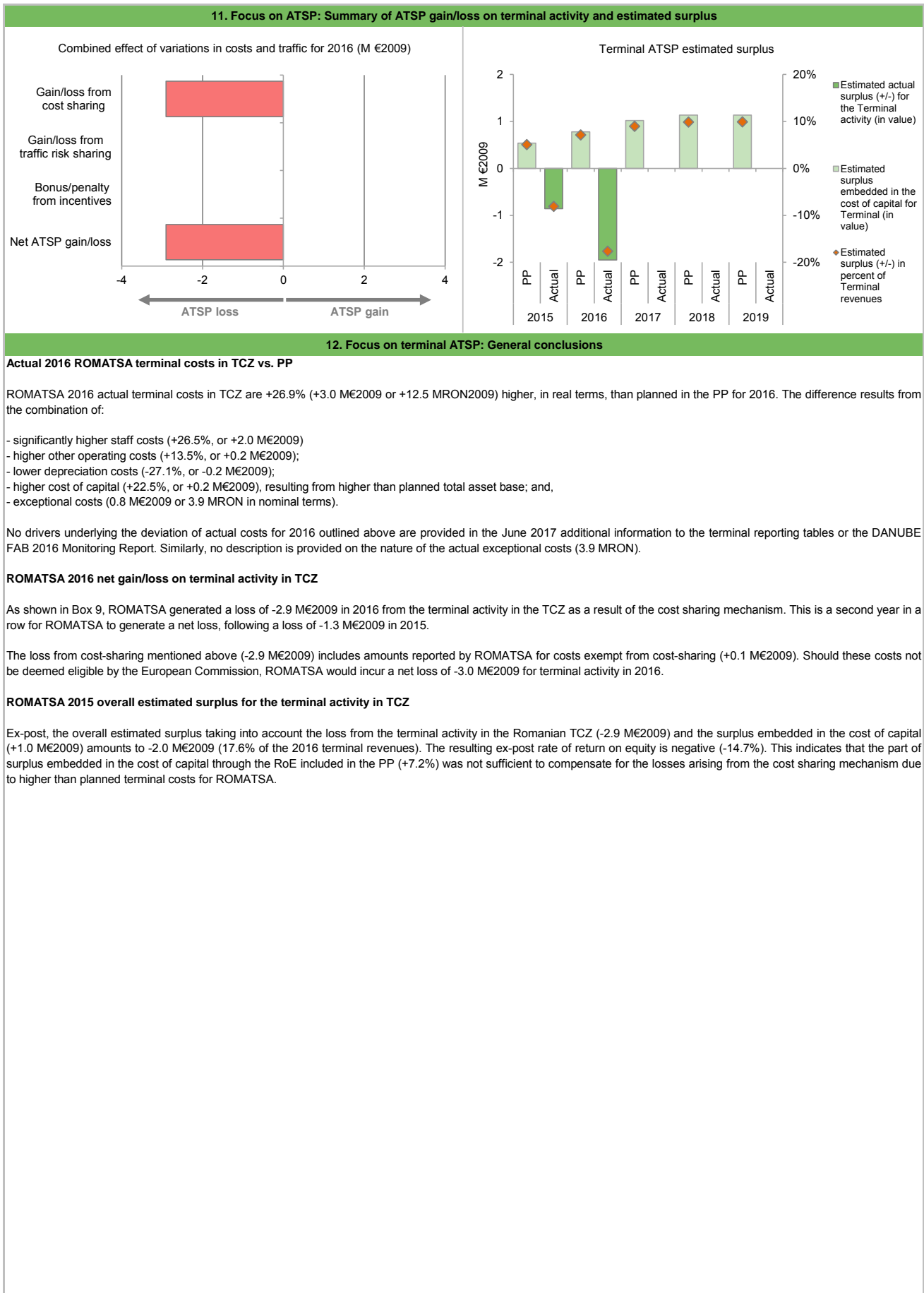
ROMANIA: Terminal ATSP (ROMATSA)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	10 641	11 005			
Actual costs for the ATSP	11 975	13 966			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-1 334	-2 962			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	56			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-1 334	-2 905			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-1 334	-2 905			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	7 869	10 850	13 805	15 203	15 154
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	7 869	10 850	13 805	15 203	15 154
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	538	780	1 018	1 134	1 135
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.8%	7.2%	7.4%	7.5%	7.5%
Estimated surplus embedded in the cost of capital for terminal (in value)	538	780	1 018	1 134	1 135
Overall estimated surplus (+/-) for the terminal activity	538	780	1 018	1 134	1 135
Revenue/costs for the terminal activity	10 641	11 005	11 386	11 506	11 485
Estimated surplus (+/-) in percent of terminal revenues	5.1%	7.1%	8.9%	9.9%	9.9%
Estimated ex-ante RoE pre-tax rate (in %)	6.8%	7.2%	7.4%	7.5%	7.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	6 945	13 292			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	6 945	13 292			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	474	955			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.8%	7.2%			
Estimated surplus embedded in the cost of capital for terminal (in value)	475	955			
Net ATSP gain(+)/loss(-) on terminal activity	-1 334	-2 905			
Overall estimated surplus (+/-) for the terminal activity	-860	-1 950			
Revenue/costs for the terminal activity	10 641	11 061			
Estimated surplus (+/-) in percent of terminal revenues	-8.1%	-17.6%			
Estimated ex-post RoE pre-tax rate (in %)	-12.4%	-14.7%			

ROMANIA: Terminal ATSP (ROMATSA)

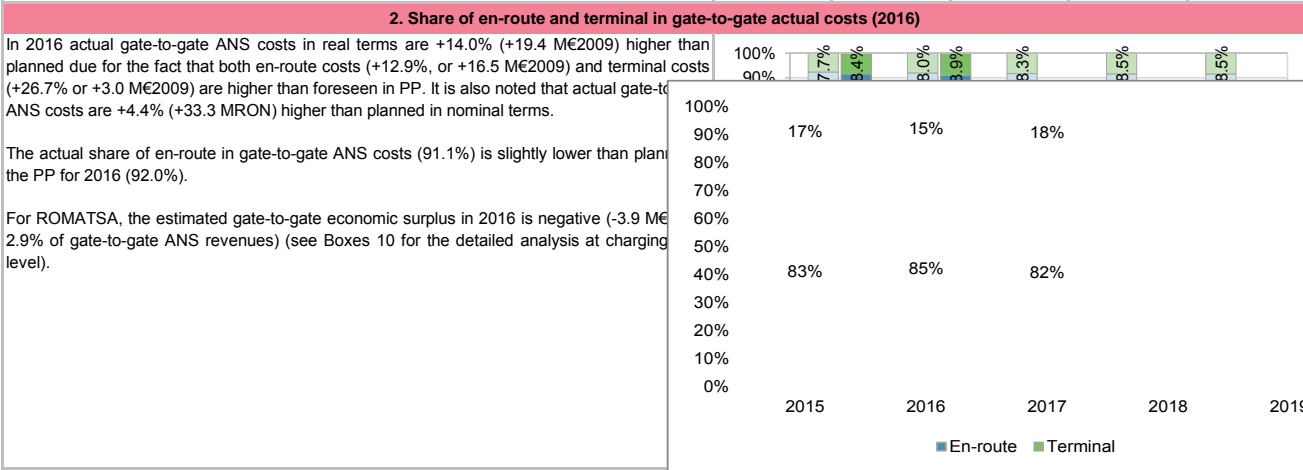
Monitoring of terminal COST-EFFICIENCY for 2016



ROMANIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Romania: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	128 504 603	127 317 114	126 311 665	125 685 463	125 393 855
Real terminal costs (EUR2009)	10 757 760	11 121 138	11 502 072	11 622 056	11 600 536
Real gate-to-gate costs (EUR2009)	139 262 364	138 438 251	137 813 736	137 307 519	136 994 391
En-route share (%)	92.3%	92.0%	91.7%	91.5%	91.5%
Romania: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	131 547 318	143 776 878			
Real terminal costs (EUR2009)	12 098 011	14 093 677			
Real gate-to-gate costs (EUR2009)	143 645 330	157 870 555			
En-route share (%)	91.6%	91.1%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
	in value	4 382 966	19 432 303		
	in %	3.1%	14.0%		
En-route share	in p.p.	-0.7%	-0.9%		



3. Technical notes on en-route and terminal information reported by Romania

Note 1: Romania has submitted a request to the European Commission to revise their RP2 en-route cost-efficiency targets and terminal DUC for the years 2018 to 2019. The figures shown in this report reflect the adopted Performance Plan (EC Decision 2015/348 of 2 March 2015).

PRB Annual monitoring report 2016

Volume 2 – Local Overview

DK SE FAB

Version: 1.1

Date: 9 October 2017

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	A	A			
	ANSPs	For Safety Culture MO	D	D			
	ANSPs	For all other MOs	C	C			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		67%	100%			
	Runway Incursions (RIs)		100%	100%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		57%	100%			
	Runway Incursions (RIs)		75%	100%			
	ATM Specific Occurences (ATM-S)		100%	100%			

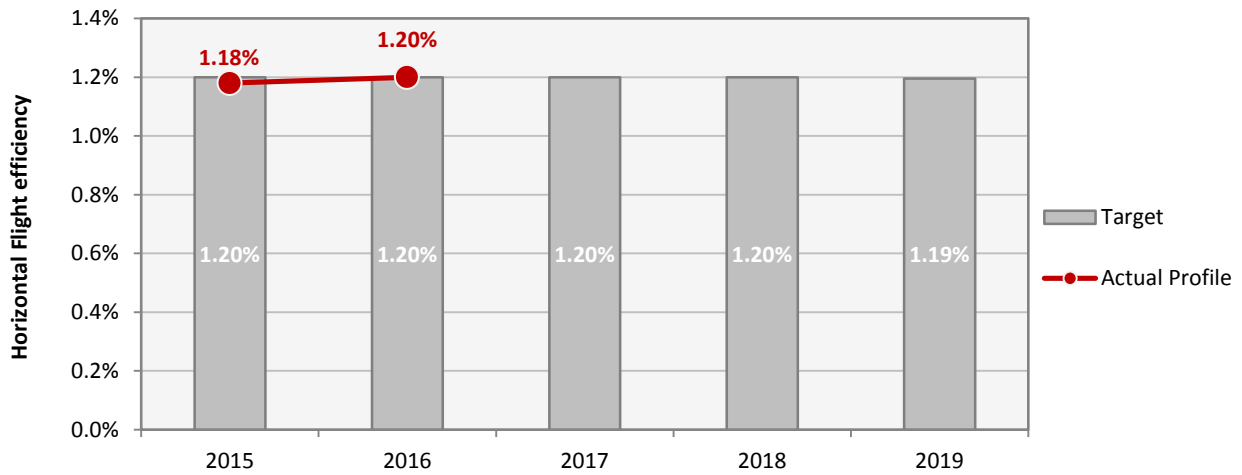
Observations

The lowest answer in each EoSM Component/area of the States is Level "A" in the Safety Promotion component which is below the 2019 EoSM target level. Safety Risk Management is already at the 2019 EoSM target level.

DK-SE FAB

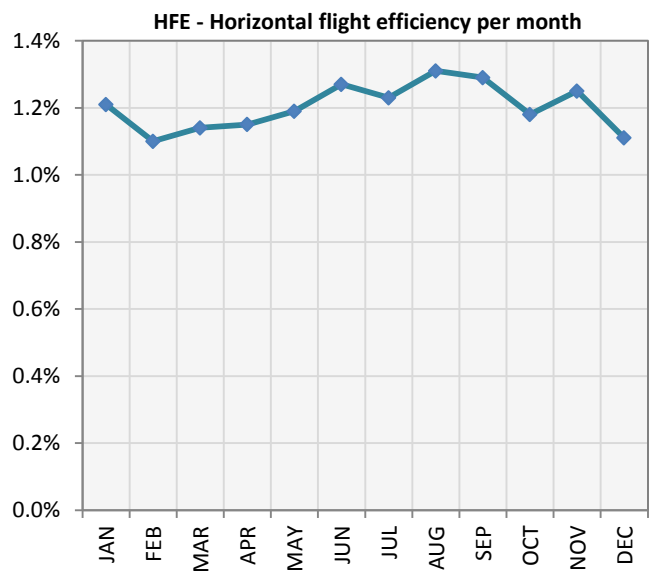
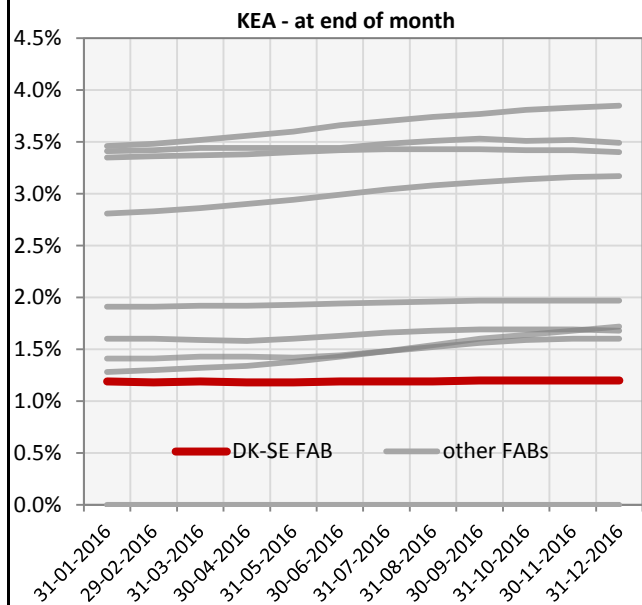
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	1.20%	1.20%	1.20%	1.20%	1.19%
Actual performance	1.18%	1.20%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	1.19%	1.18%	1.19%	1.18%	1.18%	1.19%	1.19%	1.19%	1.20%	1.20%	1.20%	1.20%
HFE	1.21%	1.10%	1.14%	1.15%	1.19%	1.27%	1.23%	1.31%	1.29%	1.18%	1.25%	1.11%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Observations

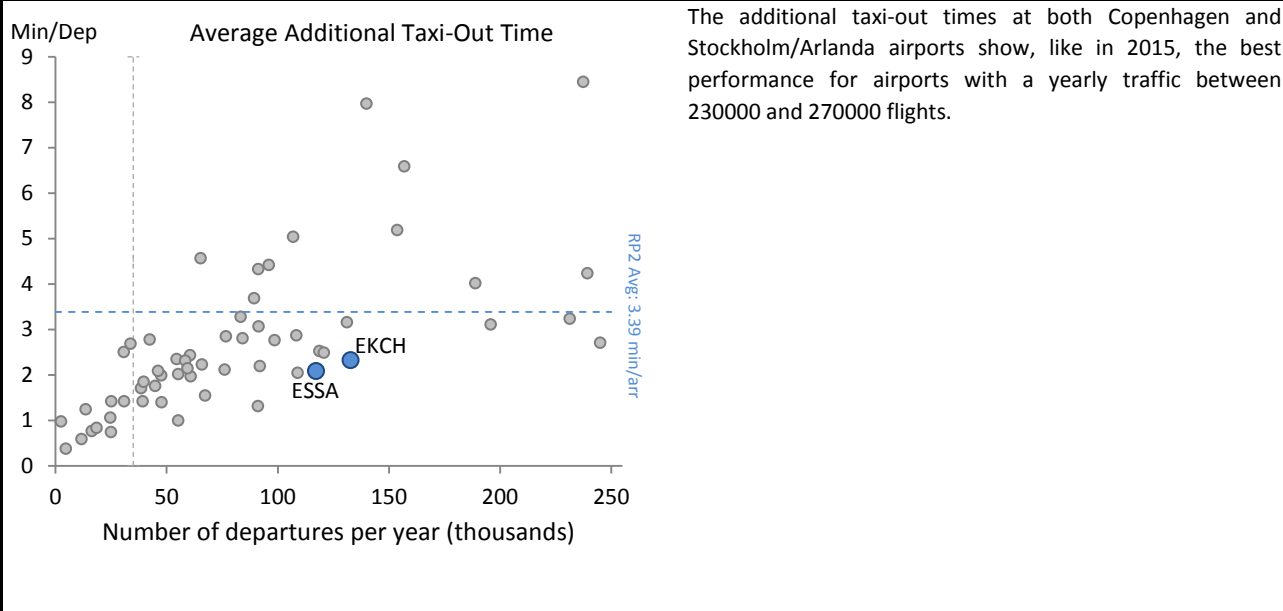
NM proposed measures: Expand cross-border operations within Borealis project and in the future with FABEC.

1. Overview

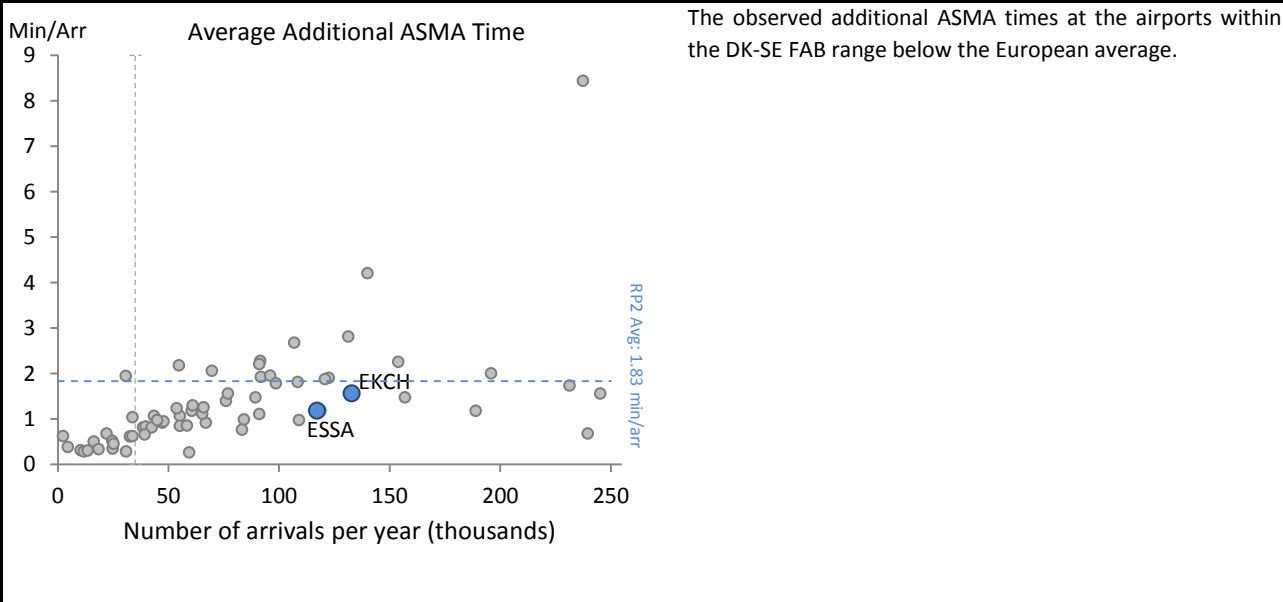
DK-SE FAB is monitored for RP2 at the two main national airports: Copenhagen/ Kastrup and Stockholm/ Arlanda. Both airports have a fully implemented Airport Operator Data Flow and show very similar performance regarding additional times, with figures below the averages for airports under RP2 monitoring.

DK-SE FAB contributes remarkably to the airport-related ANS Capacity performance in Europe.

2. Additional Taxi-Out Time



3. Additional ASMA Time



DK-SE FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.10	0.10	0.10	0.09	0.09	
FAB Target	0.10	0.10	0.10	0.09	0.09	
Actual performance	0.01	0.05				

DK - SE FAB assessment of capacity performance

Nil provided in monitoring report

Monitoring process for capacity performance

The en-route ATFM delay per flight is monitored during the reference period by using PRU web site Pan-European ANS Performance repository.

Application of Corrective Measures for Capacity

None required

Capacity Planning

The capacity planning is consistent with required performance.

Assessment of capacity performance

It is noted that the DK SE FAB provided a positive contribution to the Union-wide en route capacity performance in 2016. The DK SE FAB is expected, by the Network Manager, to provide sufficient capacity to meet the requirements every year in RP2.

En route Capacity Incentive Scheme

A FAB wide incentive scheme was applicable for en route capacity performance. The bonuses and penalties are as illustrated below.

	2015	2016	2017	2018	2019
0,00	0,50%	0,50%	0,50%	0,50%	0,50%
0,01	0,25%	0,25%	0,25%	0,25%	0,25%
0,02					
0,03					
0,04					
0,05	Dead band	Dead band	Dead band	Dead band	Dead band
0,06					
0,07					
0,08					
0,09				Target	Target
0,10	Target	Target	Target		
0,11					
0,12					
0,13				Dead band	Dead band
0,14	Dead band	Dead band	Dead band		
0,15					
0,16					
0,17				-0,25%	-0,25%
0,18				-0,50%	-0,50%
0,19	-0,25%	-0,25%	-0,25%		
0,20	-0,50%	-0,50%	-0,50%		

Result of FAB Capacity Incentive Scheme

The verified actual value of the FAB en route capacity performance was 0,05 minutes delay per flight which falls within the deadband of the FAB wide incentive scheme. Therefore, even though the FAB en route capacity performance was better than the FAB target, and provided a positive contribution to the Union-wide target, no bonus will be applicable to the ANSPs in the DK-SE FAB for 2016 performance.

Update on Military dimension of the plan
<p>Denmark: FUA is fully implemented in Denmark thus it is very hard to increase the capacity further.</p> <p>Sweden: FUA has been implemented in Sweden since 1978, before the concept was defined on European level and the benefit is already achieved, therefore it is very hard to increase the capacity further. Sweden have an implemented extended FUA with the content that not limits the capacity.</p> <p>In spite of the increase in amount of multinational military exercises in Swedish FIR there is still a limited impact on civil traffic flows.</p>
Observations on Military dimension of the plan
<p>The update on the military dimension of the plan is welcomed.</p>
Application of FUA
<p>Denmark: FUA is fully implemented in Denmark thus it is very hard to increase the capacity further.</p> <p>Sweden: FUA has been implemented in Sweden since 1978, before the concept was defined on European level and the benefit is already achieved, therefore it is very hard to increase the capacity further. Sweden have an implemented extended FUA with the content that not limits the capacity.</p>
Observations of the Application of FUA
<p>The established FUA situation in both Sweden and Denmark is noted.</p>

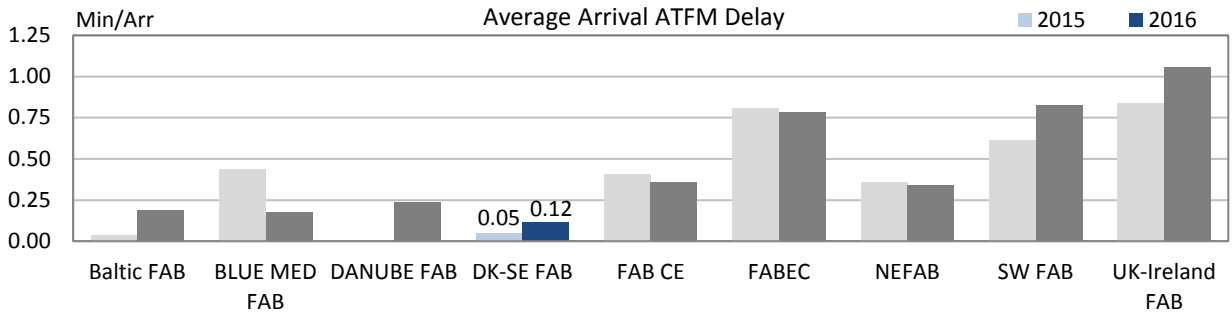
1. Overview

DK-SE FAB contributes adequately to the airport-related ANS Capacity performance in Europe. The observed performance in 2015 and 2016 range within the best-in-class category.

The services at both airports, Copenhagen (EKCH) and Stockholm/Arlanda (ESSA) accrue an average arrival ATFM delay of 0.12 min/arr. in 2016. Equally both airports range above 95% in terms of ATFM slot adherence and accrue only negligible pre-departure delay.

Considering the level of traffic in Denmark and Sweden, DK-SE FAB certainly serves as a benchmark for airport-related ANS Capacity contributions across Europe at airports around and below a yearly number of movements below 225000 flights.

2. Average Arrival ATFM Delay



DK-SE FAB performance in terms of arrival ATFM delay deteriorated in 2016 (i.e. 0.12 min/arr.) in comparison with 2015 (i.e. 0.05 min/arr.). Given the level of air traffic observed at both airports and associated weather conditions, the achieved performance can be considered as best-in-class.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

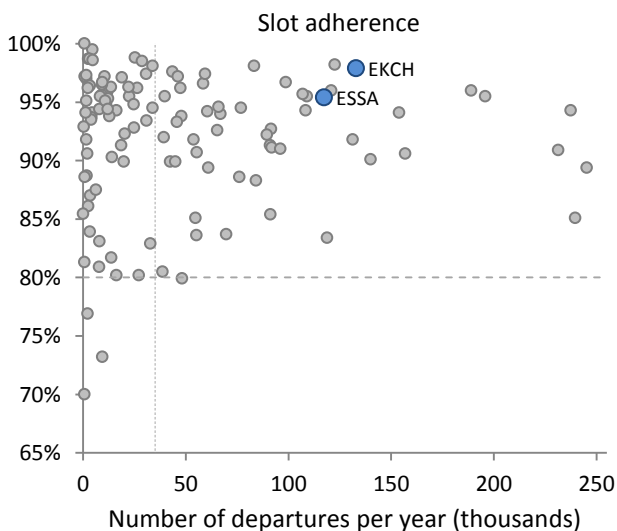
The DK-SE FAB performance plan sets a national target on arrival ATFM delay for each of the states with a breakdown per airport for each of the years of the reference period. For both states, the national target on arrival ATFM delay is consistent with the observed historical performance.

The Danish target is challenging setting the target value at 50% of the historical performance.

Sweden sets an upper bound in line with the maximum of arrival ATFM delay observed throughout the recent years.

The DK-SE FAB performance plan presents no incentive schemes for the national targets on arrival ATFM delay. A reference is provided in the supporting documentation that the establishment of an incentive scheme for terminal ANS may be reviewed in 2017.

4. ATFM Slot Adherence



Both airports, Copenhagen (EKCH) and Stockholm/Arlanda (ESSA) range above 95% compliance with the ATFM slot.

5. Pre-departure Delay

There is only a negligible share of pre-departure delay accrued within DK-SE FAB in 2015 and 2016.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Denmark

Version: 1.1

Date: 9 October 2017

DENMARK

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	46	B	C	B	A	B
NAVIAIR	88	D	E	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	CAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	4	5
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	11	7
NAVIAIR	Number of questions answered	
	YES	NO
Policy and its implementation	9	4
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	17	7

Observations

One out of the four reviewed EoSM Components/areas of the State is at the 2019 EoSM target level "C".After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 5 are below Level C.

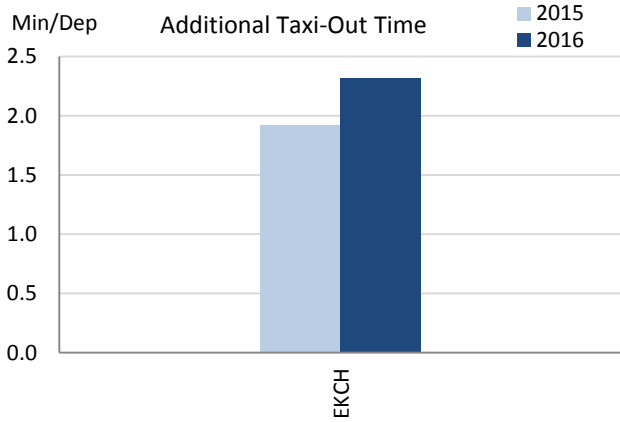
DENMARK

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

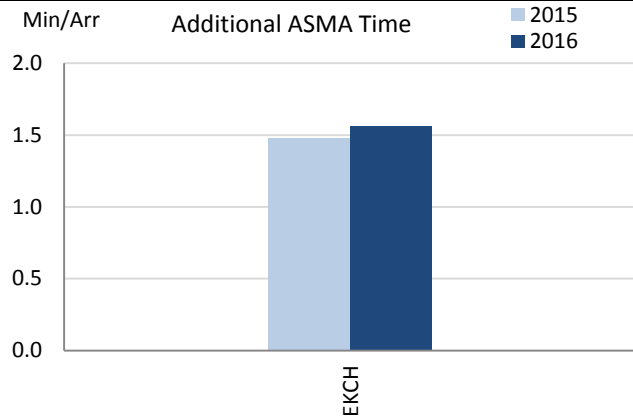
Denmark only has Copenhagen/ Kastrup (EKCH) airport subject to RP2 monitoring for which the APDF is successfully established. The ANS Environment performance at EKCH is one of the best in class for airports with a yearly traffic of around 265000 flights.

2. Additional Taxi-Out Time



Additional taxi-out times in Copenhagen have increased around 20%. However, this increase is only observed in January, June and October. During the summer and in October several maintenance and refurbishing works took place on the taxiway system, with little impact on the indicator.

3. Additional ASMA Time



Additional times in the terminal area are kept around the 1.5 min/arr. in 2016. The main increase is observed in October, when the runway closure associated to the works on the taxiway system took place.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Copenhagen/ Kastrup	EKCH	1.92	2.32				1.48	1.56			

DENMARK

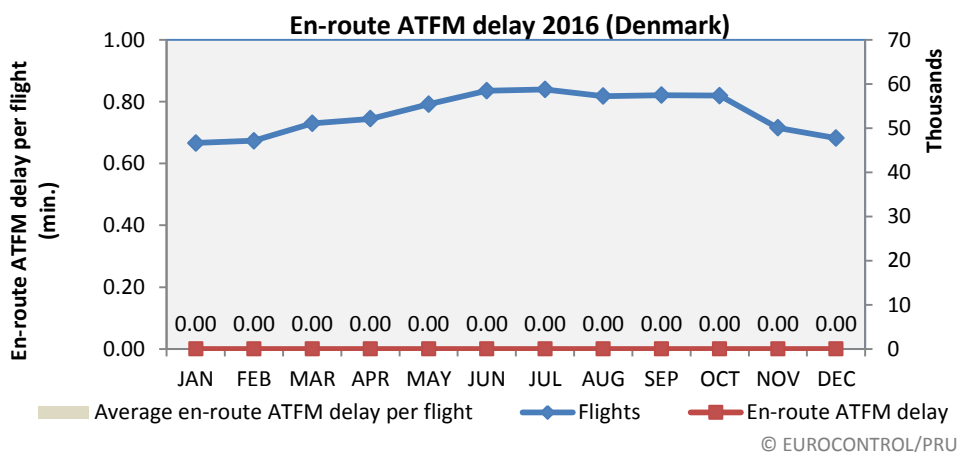
Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	N/A	N/A	N/A	N/A	N/A	FAB wide incentive scheme in place.
Deadband +/-						
Actual performance	0.00	0.00				

National capacity incentive scheme
 Not applicable

Compliance issues relating to national capacity incentive scheme
 Not applicable

Observations regarding national capacity performance



En-route ATFM delay per flight (Denmark)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
1.91	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00

Denmark continues to provide excellent en route capacity performance in 2016.

Planning and Effective Use of CDRs

No data was provided at national (or FAB) level. Instead Denmark reported that "Routing via CDR is expected to be decreasing due to free route airspace implementation."

Observations on Planning and effective Use of CDRs

It is noted that Denmark, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 24%.
 The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 8%
 Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

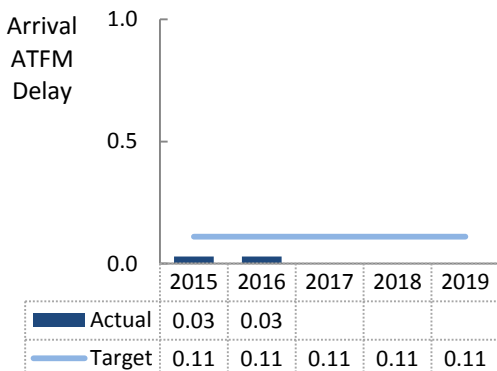
DENMARK

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Denmark, ANS at Copenhagen (EKCH) airport are subject to RP2. The actual performance observed in 2015 and 2016 fully meets the established national target on arrival ATFM delay.
 The local performance is amongst the best-in-class and shows no capacity-related constraints.
 Denmark adequately contributes to the DK-SE FAB and European ANS Capacity performance.

2. Arrival ATFM Delay



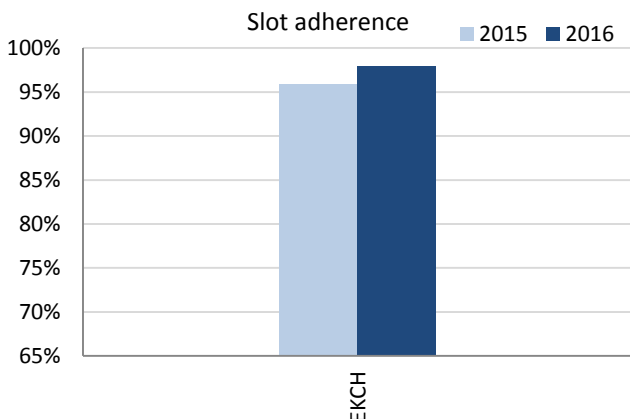
The actual performance in terms of arrival ATFM delay at Copenhagen/Kastrup (EKCH) remained constant throughout the last 2 years. The achieved performance fully meets the national target.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Denmark established a challenging national target on arrival ATFM delay at the level of approximately 50% of the average performance observed throughout the years preceding RP2.

No incentive scheme is established. A reference is provided in the supporting documentation that the establishment of an incentive scheme for terminal ANS may be reviewed in 2017.

4. ATFM Slot Adherence



The compliance with the ATFM slots increased in 2016 by 2% and reaches 97.9%. This best-in-class performance adds positively to the predictability in the network.

5. Pre-departure Delay

Despite the doubling of the pre-departure delay (2015: 0.03 min/dep. vs 2016: 0.07 min/dep.), Copenhagen/Kastrup (EKCH) shows only a negligible share of pre-departure delay compared to other European airports.
 Most of the departure is accrued during January and February.

6. Appendix

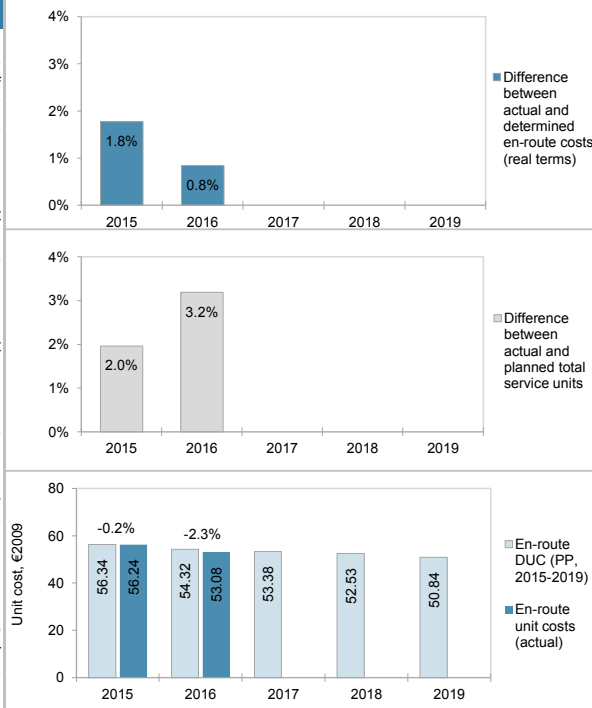
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Copenhagen/ Kastrup	EKCH	0.03	0.03				95.9%	97.9%				0.03	0.07			

DENMARK: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Denmark ECZ represents 1.4% of the SES en-route ANS determined costs in 2016 · ATSP: NAVIAIR · FAB: DK-SE FAB · National currency: DKK Exchange rate 2009: 1 EUR = 7.44337 DKK						
2. En-route DUC monitoring at Charging Zone level						
Denmark: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal DKK)		726 872 134	724 495 393	735 983 926	749 032 040	750 157 741
Inflation %		1.8%	2.2%	2.2%	2.2%	2.2%
Inflation index (100 in 2009)		111.6	114.1	116.6	119.1	121.8
Real en-route costs (DKK2009)		651 263 654	635 160 606	631 342 985	628 704 443	616 095 213
Total en-route Service Units		1 553 000	1 571 000	1 589 000	1 608 000	1 628 000
Real en-route unit cost per Service Unit (DKK2009)		419.36	404.30	397.32	390.99	378.44
Real en-route unit cost per Service Unit (EUR2009)		56.34	54.32	53.38	52.53	50.84
Denmark: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal DKK)		719 545 995	695 318 991			
Inflation %		0.2%	0.0%			
Inflation index (100 in 2009)		108.6	108.6			
Real en-route costs (DKK2009)		662 830 597	640 513 192			
Total en-route Service Units		1 583 445	1 621 145			
Real en-route unit cost per Service Unit (DKK2009)		418.60	395.10			
Real en-route unit cost per Service Unit (EUR2009)		56.24	53.08			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal DKK)	in value	-7 326 139	-29 176 402			
	in %	-1.0%	-4.0%			
Inflation %	in p.p.	-1.6 p.p.	-2.2 p.p.			
Inflation index (100 in 2009)	in p.p.	-3.1 p.p.	-5.5 p.p.			
Real en-route costs (DKK2009)	in value	11 566 943	5 352 586			
	in %	1.8%	0.8%			
Total en-route Service Units	in value	30 445	50 145			
	in %	2.0%	3.2%			
Real en-route unit cost per Service Unit (DKK2009)	in value	-0.76	-9.20			
	in %	-0.2%	-2.3%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-0.10	-1.24			
	in %	-0.2%	-2.3%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (53.08 €2009) is lower (-2.3%) than the planned en-route DUC target (54.32 €2009). This difference results from the combination of higher than planned TSUs (+3.2%) and higher than planned real en-route costs (+0.8%, or +0.7 M€2009), although in nominal terms the costs are (-4.0%) lower than planned (see En-route costs section below).						
En-route service units						
The difference between actual and planned TSUs (+3.2%) is outside the ±2% dead-band but within the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of en-route revenues is therefore shared between airspace users and the ATSP (NAVIAIR), the latter retaining +1.7 M€2009.						
The TSUs forecast underpinning the adopted DUC targets was in line with the STATFOR February 2014 low case forecast scenario. Considering the latest STATFOR February 2017 TSUs forecasts, it appears that actual TSUs are likely to remain higher than planned for the rest of RP2.						
En-route costs						
In nominal terms, the 2016 actual en-route costs are -4.0% lower than planned. However, since the actual inflation and the resulting 2016 inflation index is much lower than planned (-5.5 p.p.), the 2016 actual en-route costs are +0.8% higher than planned in real terms (+0.7 M€2009). The higher than planned en-route costs in real terms are driven by higher costs for the ATSP-NAVIAIR (+2.0%, or +1.4 M€2009) and MET provider-DMI (+4.9%, or +0.2 M€2009), while NSA/EUROCONTROL costs are lower than planned (-7.7%, or -0.8 M€2009). NAVIAIR being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.						
Costs exempt from cost-sharing are reported for a total amount of -0.4 M€2009 corresponding to lower than planned EUROCONTROL costs. This amount will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.						



DENMARK: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

4. En-route traffic monitoring (Actual 2015-2019 TSUs compared to PP)

5. En-route costs monitoring (2016 actuals compared to PP)

Costs by entity at ECZ level:

ATSP	2.0%
Other ANSPs	-
METSP	4.9%
NSA/EUROCONTROL	-7.7%
Total	0.8%

Costs by nature at ATSP level:

Staff	6.5%
Other operating costs	-2.2%
Depreciation	-4.6%
Cost of capital	-14.7%
Exceptional items	-14.5%
VFR exempted flights	21.3%
Total	2.0%

6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-3	-359			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-3	-359			
Total costs exempt from cost sharing		-3	-359			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Denmark 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - DKK

The CUR charged to airspace users in 2016 is 460.05 DKK, which is slightly lower (-0.2%) than the nominal DUC (461.17 DKK). The difference between these two figures (-1.12 DKK) relates to the traffic risk sharing adjustment (+8.46 DKK) and traffic adjustment (+5.75 DKK), which are counterbalanced by the inflation adjustment (-8.04 DKK) and cost exempt from cost sharing (-6.14 DKK). It is noted that, according to additional information (3.d), NAVIAIR is reimbursing an amount (-1.14 DKK) corresponding to write-off of under recoveries prior to RP1, which is recorded under line 3.7 Bonus/penalty in the reporting tables.

These costs and adjustments are divided by the 2016 forecast TSUs.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Denmark 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - DKK

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (432.23 DKK) is -6.3% (or -28.94 DKK) lower than the nominal DUC (461.17 DKK). The main driver for this difference is the inflation adjustment (-21.58 DKK), which reflects a much lower than planned inflation in 2016 to be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the actual TSUs in 2016.

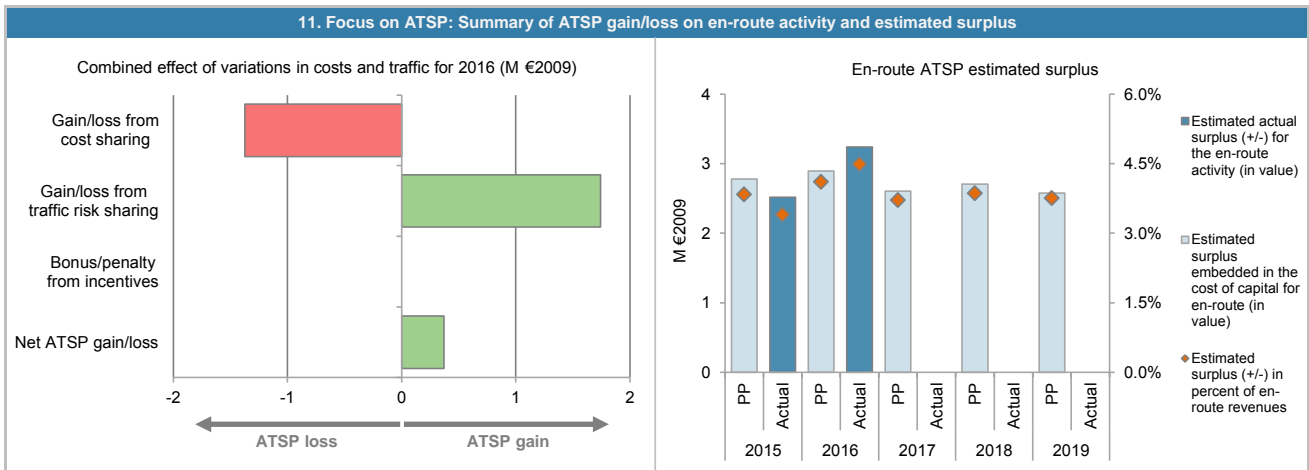
DENMARK: En-route ATSP (NAVIAR)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	72 364	70 391			
Actual costs for the ATSP	74 365	71 764			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-2 001	-1 373			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-2 001	-1 373			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	2.0%	3.2%			
Determined costs for the ATSP (PP) - based on actual inflation	74 399	73 963			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 459	1 744			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	190	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-353	371			
	<i>*see Note 1</i>				
10. Focus on ATSP: En-route ATSP estimated surplus *					
<small>* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.</small>					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	162 405	160 889	159 999	160 494	160 817
Estimated proportion of financing through equity (in %)	34.2%	36.0%	32.6%	33.7%	32.0%
Estimated proportion of financing through equity (in value)	55 546	57 849	52 092	54 147	51 526
Estimated proportion of financing through debt (in %)	65.8%	64.0%	67.4%	66.3%	68.0%
Estimated proportion of financing through debt (in value)	106 859	103 040	107 907	106 347	109 291
Cost of capital pre-tax (in value)	7 372	6 499	6 273	6 004	5 746
Average interest on debt (in %)	4.3%	3.5%	3.4%	3.1%	2.9%
Interest on debt (in value)	4 595	3 606	3 669	3 297	3 169
Determined RoE pre-tax rate (in %)	5.0%	5.0%	5.0%	5.0%	5.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	<i>*see Note 2</i>	2 777	2 892	2 707	2 576
Overall estimated surplus (+/-) for the en-route activity	<i>*see Note 2</i>	2 777	2 892	2 605	2 576
Revenue/costs for the en-route activity	72 364	70 391	70 121	70 039	68 601
Estimated surplus (+/-) in percent of en-route revenues	3.8%	4.1%	3.7%	3.9%	3.8%
Estimated ex-ante RoE pre-tax rate (in %)	5.0%	5.0%	5.0%	5.0%	5.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	150 659	149 569			
Estimated proportion of financing through equity (in %)	38.1%	38.3%			
Estimated proportion of financing through equity (in value)	57 412	57 340			
Estimated proportion of financing through debt (in %)	61.9%	61.7%			
Estimated proportion of financing through debt (in value)	93 247	92 229			
Cost of capital pre-tax (in value)	7 067	5 542			
Average interest on debt (in %)	4.5%	2.9%			
Interest on debt (in value)	4 196	2 675			
Determined RoE pre-tax rate (in %)	5.0%	5.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	<i>*see Note 2</i>	2 871	2 867		
Net ATSP gain(+)/loss(-) on en-route activity	-353	371			
Overall estimated surplus (+/-) for the en-route activity	<i>*see Notes 1-2</i>	2 518	3 238		
Revenue/costs for the en-route activity	74 012	72 135			
Estimated surplus (+/-) in percent of en-route revenues	3.4%	4.5%			
Estimated ex-post RoE pre-tax rate (in %)	4.4%	5.6%			

DENMARK: En-route ATSP (NAVIAIR)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 NAVIAIR en-route costs vs. PP

In 2016, NAVIAIR actual en-route costs, in real terms, are +2.0% (+1.4 M€2009) higher than planned. Based on the June 2017 Reporting Tables, this results from the combination of:

- Higher than planned staff costs in real terms (+6.5%, or +2.9 M€2009). However, as highlighted in box 3, the lower than planned inflation index (-5.5 p.p.) is an important factor affecting the comparison in real terms. In nominal terms, the staff costs for NAVIAIR are (+1.4%) higher than planned, reported to be due to "Increased staff costs because of provisions made due to the "Savings programme 2016" and a general increase in wages due to seniority and collective agreements. A part of the difference is offset by received Funding to EU-projects."
- Lower than planned other operating costs (-2.2%, or -0.3 M€2009), reported to be mainly due to "fewer other operating costs with regards to NUAC, and costs related to energy and buildings. Naviair also received Funding for EU-projects".
- Lower than planned depreciation costs (-4.6%, or -0.4 M€2009), "Lower depreciations is due to a lower level of investment than expected. Furthermore EU-funding received for projects implemented during RP1 and earlier."
- Lower cost of capital (-14.7%, or -1.0 M€2009), due to lower payment of interests to the State. "Late 2016 Naviair reduced the subordinated loan by 136.6 mDKK."
- Lower than planned revenue recorded as (negative) exceptional costs (-14.5%), resulting in actual costs in this category being +0.3 M€2009 higher than planned. This deviation is due to "lower investment activities than planned resulting in less capitalised work".

Through the compliance assessment of the en-route unit rate, clarifications have been sought on the rationale for netting-off staff costs, other operating costs and depreciation costs with EU-funding, which could impact on the cost risk sharing. See **Note 1**.

NAVIAIR net gain/loss on en-route activity in 2016

As shown in box 9, NAVIAIR generated a net gain of +0.4 M€2009 on the en-route activity. This is a combination of two elements:

- a loss of -1.4 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +1.8 M€2009 arising from the traffic risk-sharing mechanism.

It is noted that "In 2016 the performance by the Danish/Swedish FAB does not qualify for a bonus nor a penalty to be reflected in the 2018 unit rate".

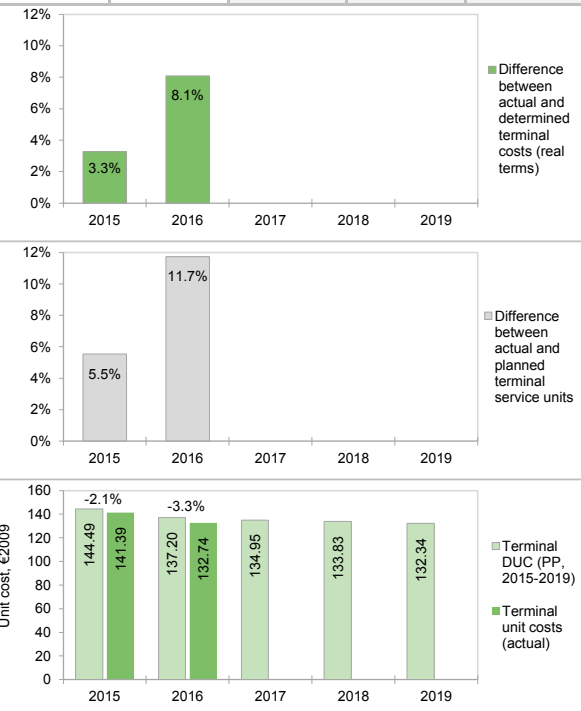
NAVIAIR overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+0.4 M€2009) and the surplus embedded in the actual cost of capital (+2.9 M€2009) amounts to +3.2 M€2009 (4.5% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 5.6%, which is slightly higher than the 5.0% planned in the PP. See also **Notes 1** and **2** at the end of this report.

DENMARK: Terminal charging zone

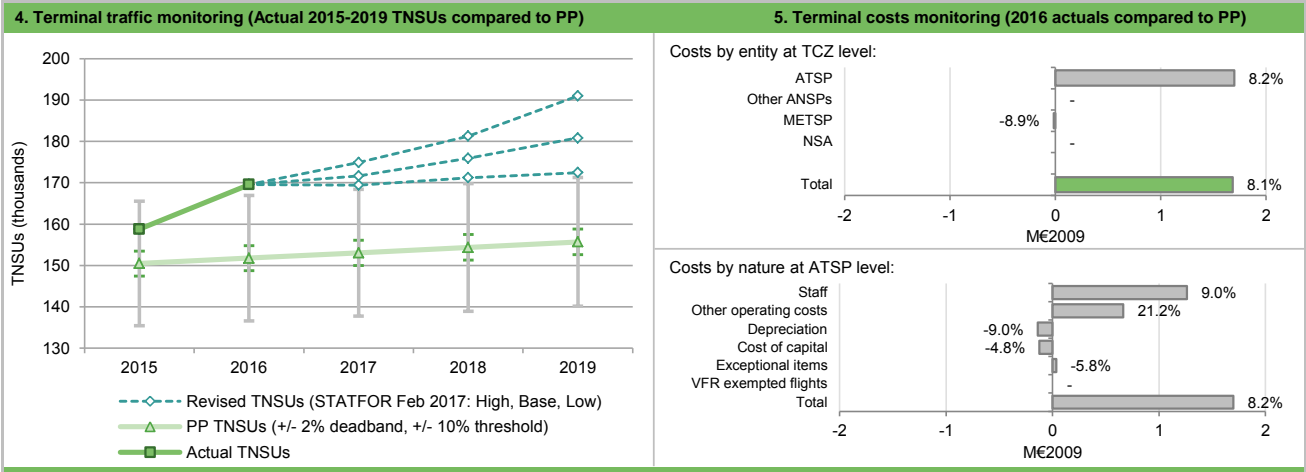
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Denmark TCZ represents 1.9% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	Yes
· ATSP: NAVIAIR					· Airports with fewer than 70,000 IFRs ATMs:	0
· National currency: DKK					· Airports with between 70,000 and 225,000 IFRs ATMs:	0
· Number of airports in charging zone in 2016: 1, of which:					· Airports with more than 225,000 IFRs ATMs:	1
2. Terminal DUC monitoring at Charging Zone level						
Denmark: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal DKK)	180 631 201	176 790 835	179 242 261	183 226 026	186 756 637	
Inflation %	1.8%	2.2%	2.2%	2.2%	2.2%	
Inflation index (100 in 2009)	111.6	114.1	116.6	119.1	121.8	
Real terminal costs (DKK2009)	161 842 132	154 991 426	153 757 902	153 791 841	153 380 900	
Total terminal Service Units	150 479	151 768	153 069	154 381	155 704	
Real terminal unit cost per Service Unit (DKK2009)	1 075.51	1 021.24	1 004.50	996.18	985.08	
Real terminal unit cost per Service Unit (EUR2009)	144.49	137.20	134.95	133.83	132.34	
Denmark: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal DKK)	181 422 000	181 867 000				
Inflation %	0.2%	0.0%				
Inflation index (100 in 2009)	108.6	108.6				
Real terminal costs (DKK2009)	167 122 121	167 532 045				
Total terminal Service Units	158 800	169 561				
Real terminal unit cost per Service Unit (DKK2009)	1 052.41	988.03				
Real terminal unit cost per Service Unit (EUR2009)	141.39	132.74				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
Terminal costs (nominal DKK)	in value 790 799	5 076 165				
	in % 0.4%	2.9%				
Inflation %	in p.p. -1.6 p.p.	-2.2 p.p.				
Inflation index (100 in 2009)	in p.p. -3.1 p.p.	-5.5 p.p.				
Real terminal costs (DKK2009)	in value 5 279 988	12 540 620				
	in % 3.3%	8.1%				
Total terminal Service Units	in value 8 321	17 793				
	in % 5.5%	11.7%				
Real terminal unit cost per Service Unit (DKK2009)	in value -23.11	-33.20				
	in % -2.1%	-3.3%				
Real terminal unit cost per Service Unit (EUR2009)	in value -3.10	-4.46				
	in % -2.1%	-3.3%				
3. Focus on terminal at State/Charging Zone level						
This analysis focuses on Denmark Terminal Charging Zone (TCZ) comprising only Copenhagen airport for which Denmark decided to apply the traffic risk sharing mechanism.						
Terminal unit cost						
In 2016, the actual terminal unit cost in real terms (132.74 €2009) is -3.3% lower than planned (137.20 €2009). This difference results from the combination of higher than planned TNSUs (+11.7%) and higher than planned terminal costs in real terms (+8.1%, +12.5 M DKK2009 or +1.7 M€2009).						
Terminal service units						
The difference between actual and planned TNSUs (+11.7%) exceeds the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting additional terminal revenues are therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to close to +1.0 M€2009.						
Based on the STATFOR February 2017 traffic forecast, the level of TNSUs for Denmark TCZ is expected to remain substantially higher than planned for the remaining years of RP2, exceeding the +10% threshold foreseen in the traffic risk-sharing mechanism. It is noteworthy that the TNSUs forecast selected for RP2 was rather prudent since it was between STATFOR (February 2014) low and base case scenarios.						
Terminal costs						
In nominal terms, the 2016 actual terminal costs are +2.9% higher than planned. However, since the 2016 actual inflation index is lower than planned (-5.5 p.p.), the actual terminal costs are +8.1% higher than planned when expressed in real terms (+1.7 M€2009).						
The higher than planned terminal costs in real terms are entirely driven by higher costs for NAVIAIR (+8.2%, or +1.7 M€2009), while DMI actual costs are lower than planned (-8.9%, or -0.01 M€2009). NAVIAIR being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.						
There are no costs exempt from cost-sharing reported for the Denmark TCZ in 2016.						



DENMARK: Terminal charging zone

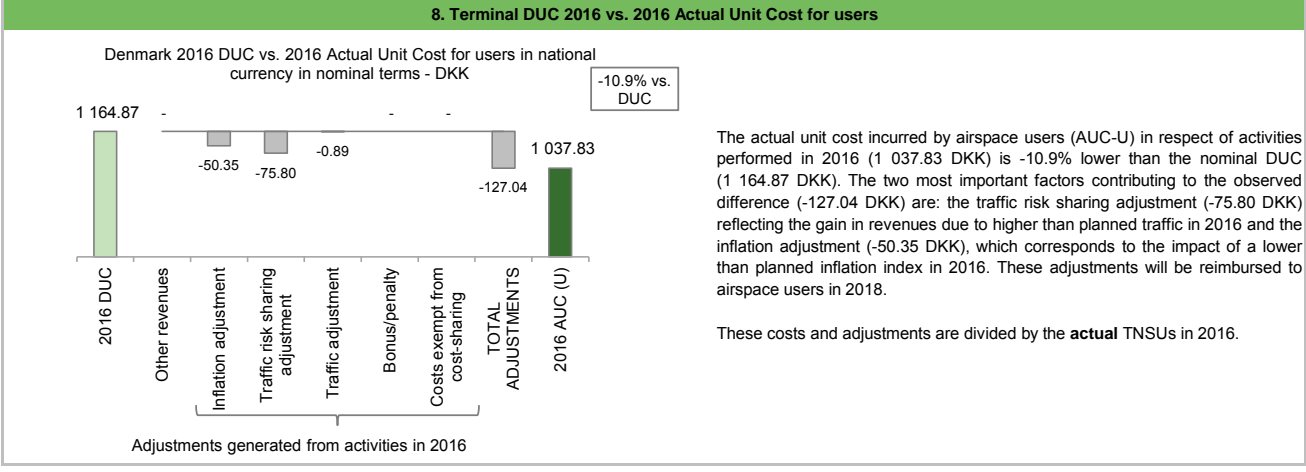
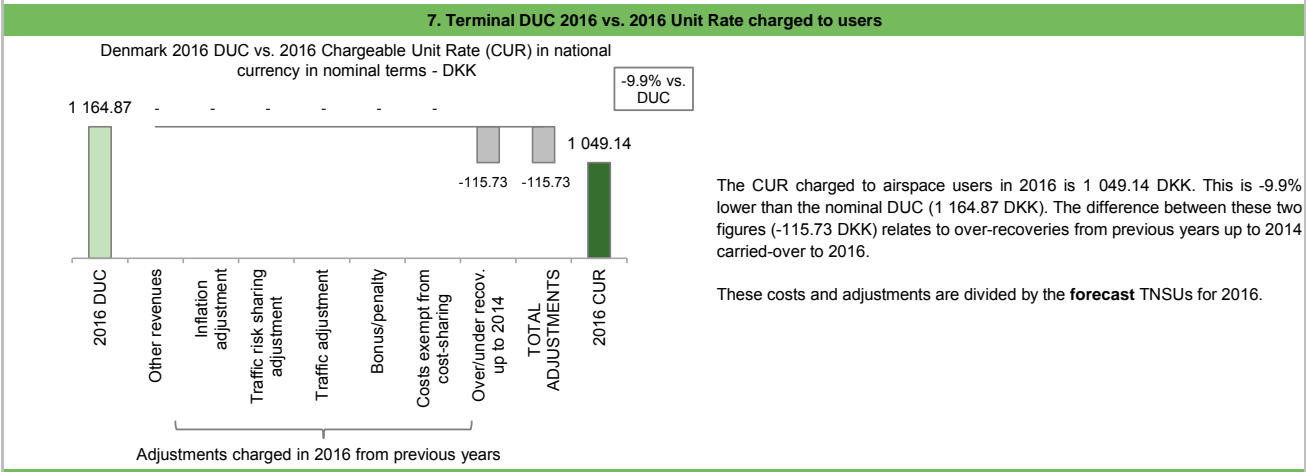
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



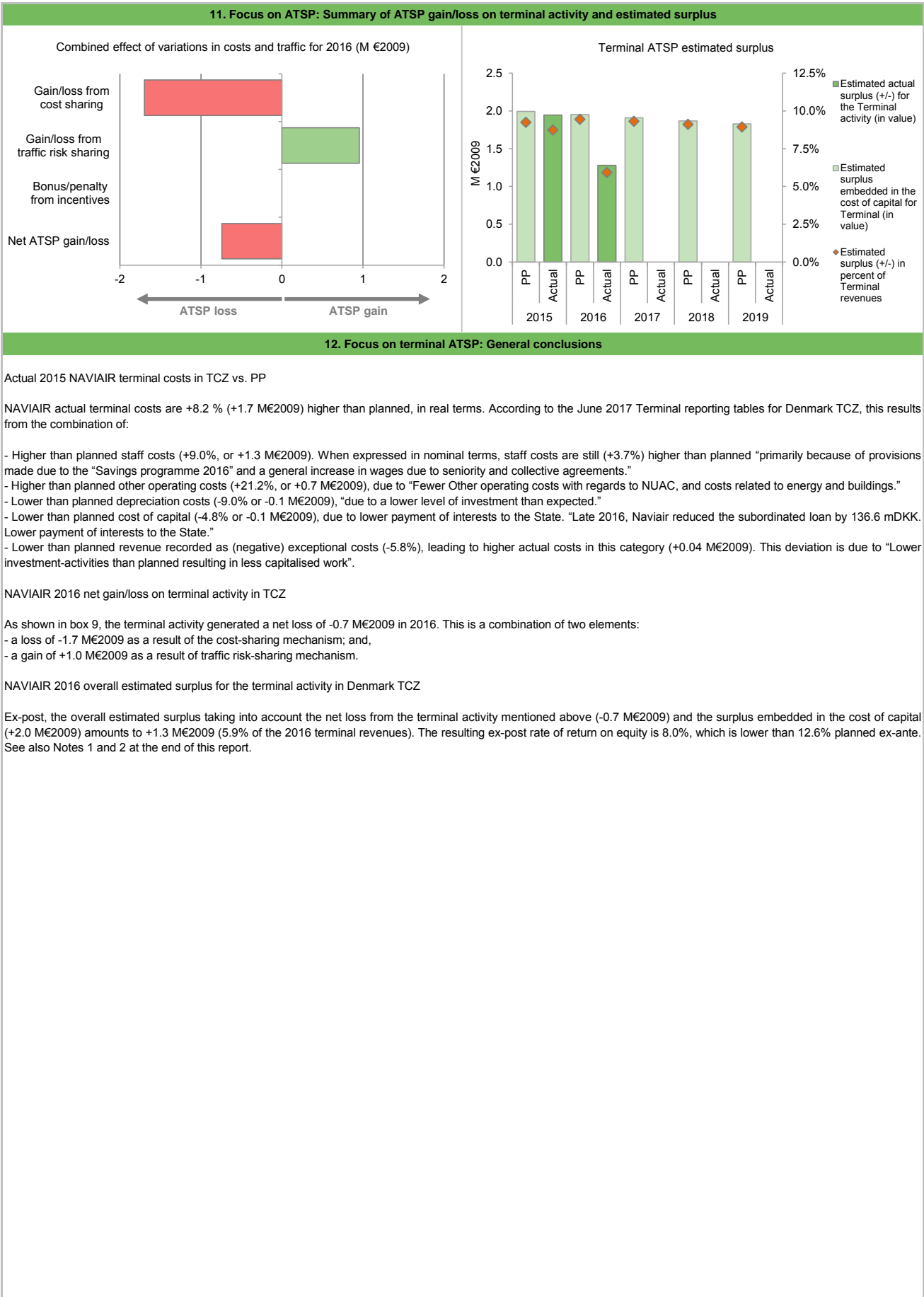
DENMARK: Terminal ATSP (NAVIAR)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	21 588	20 671			
Actual costs for the ATSP	22 314	22 369			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-726	-1 698			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-726	-1 698			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	5.5%	11.7%			
Determined costs for the ATSP (PP) - based on actual inflation	22 195	21 720			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	679	956			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-47	-743			
	<i>*see Note 1</i>				
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	25 448	25 211	25 071	25 149	25 199
Estimated proportion of financing through equity (in %)	62.0%	61.2%	60.2%	58.7%	57.4%
Estimated proportion of financing through equity (in value)	15 769	15 430	15 097	14 772	14 454
Estimated proportion of financing through debt (in %)	38.0%	38.8%	39.8%	41.3%	42.6%
Estimated proportion of financing through debt (in value)	9 679	9 781	9 974	10 376	10 745
Cost of capital pre-tax (in value)	2 813	2 574	2 497	2 409	2 325
Average interest on debt (in %)	8.5%	6.4%	5.9%	5.2%	4.6%
Interest on debt (in value)	818	622	587	541	497
Determined RoE pre-tax rate (in %)	12.6%	12.6%	12.6%	12.6%	12.6%
Estimated surplus embedded in the cost of capital for terminal (in value)	<i>*see Note 2</i>	1 995	1 952	1 869	1 828
Overall estimated surplus (+/-) for the terminal activity	<i>*see Note 2</i>	1 995	1 952	1 910	1 869
Revenue/costs for the terminal activity	21 588	20 671	20 508	20 516	20 464
Estimated surplus (+/-) in percent of terminal revenues	9.2%	9.4%	9.3%	9.1%	8.9%
Estimated ex-ante RoE pre-tax rate (in %)	12.6%	12.6%	12.6%	12.6%	12.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	26 082	22 342			
Estimated proportion of financing through equity (in %)	60.4%	71.6%			
Estimated proportion of financing through equity (in value)	15 755	15 988			
Estimated proportion of financing through debt (in %)	39.6%	28.4%			
Estimated proportion of financing through debt (in value)	10 327	6 355			
Cost of capital pre-tax (in value)	2 726	2 451			
Average interest on debt (in %)	7.1%	6.7%			
Interest on debt (in value)	733	429			
Determined RoE pre-tax rate (in %)	12.6%	12.6%			
Estimated surplus embedded in the cost of capital for terminal (in value)	<i>*see Note 2</i>	1 993	2 022		
Net ATSP gain(+)/loss(-) on terminal activity	-47	-743			
Overall estimated surplus (+/-) for the terminal activity	<i>*see Notes 1-2</i>	1 946	1 280		
Revenue/costs for the terminal activity	22 267	21 627			
Estimated surplus (+/-) in percent of terminal revenues	8.7%	5.9%			
Estimated ex-post RoE pre-tax rate (in %)	12.4%	8.0%			

DENMARK: Terminal ATSP (NAVIAR)

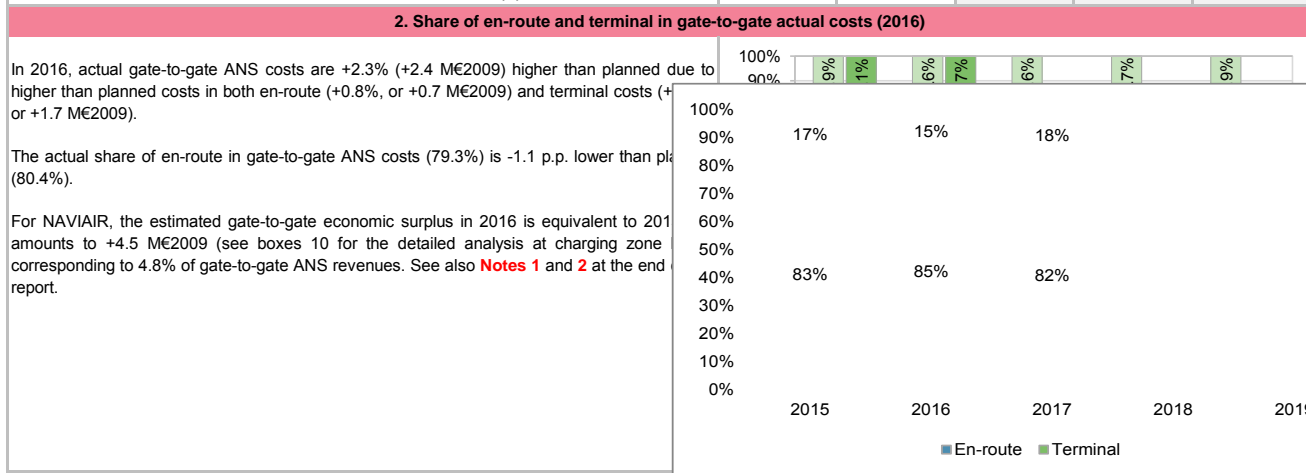
Monitoring of terminal COST-EFFICIENCY for 2016



DENMARK: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Denmark: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	87 495 806	85 332 397	84 819 509	84 465 026	82 771 005
Real terminal costs (EUR2009)	21 743 126	20 822 749	20 657 028	20 661 588	20 606 379
Real gate-to-gate costs (EUR2009)	109 238 932	106 155 146	105 476 537	105 126 614	103 377 383
En-route share (%)	80.1%	80.4%	80.4%	80.3%	80.1%
Denmark: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	89 049 798	86 051 505			
Real terminal costs (EUR2009)	22 452 481	22 507 553			
Real gate-to-gate costs (EUR2009)	111 502 279	108 559 058			
En-route share (%)	79.9%	79.3%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	2 263 347	2 403 912			
in %	2.1%	2.3%			
En-route share					
in p.p.	-0.2%	-1.1%			



3. Technical notes on en-route and terminal information reported by Denmark

Note 1: Reporting of 2015-2016 actual costs

Denmark reports that 2016 actual costs are netted off by an amount of 6.8M DKK for en-route and 0.5M DKK for terminal (nominal terms) but that similar amounts were anticipated and deducted from the 2016 DC. The same applies to 2015 (see June 2017 Reporting Tables (additional information)). In addition to EU funding, Denmark reports that NAVIAIR netted off en-route cost with income from Entry Point North Training and from off-shore activities. Denmark reports that they anticipated and deducted back in 2014 similar amounts from their determined costs. These issues, which affect actual costs and possibly the cost sharing for Denmark, are being addressed through the assessment of the compliance of the unit rates process.

En route (DKK 1 000)	2016A	deducted	
		funding	Excl. funding
1.1 Staff	384.906	3.935	388.841
1.2 Other operating costs	99.371	1.312	100.683
1.3 Depreciation	75.808	1.523	77.331
1.4 Cost of capital	44.778		44.778
1.5 Exceptional items	-15.755		-15.755
1.6 Total costs	589.108	6.770	595.878

TNC CPH (DKK 1 000)	2016A	deducted	
		funding	Excl. funding
1.1 Staff	123.632	343	123.975
1.2 Other operating costs	30.589	115	30.704
1.3 Depreciation	11.324	79	11.403
1.4 Cost of capital	19.803		19.803
1.5 Exceptional items	-4.599		-4.599
1.6 Total costs	180.749	537	181.286

Note 2: Naviair capital structure

There is an inconsistency in the assumptions for the calculation of the cost of capital between en-route and terminal activities (in particular in respect of the proportion of financing through equity and the interest rate on debt).

According to the Additional Information provided with the June 2017 Reporting Tables, Naviair does not have a dedicated balance sheet for different business units, and its assets are allocated to either en-route, terminal or a third activity based on the entire asset base of Naviair. Moreover, Naviair cost of capital is the combined amount of return on equity, interest payment on debt, and the deduction of capitalisation of interim interest. The combination of the three and the allocation of the entire asset base may affect the calculation of the surplus embedded in the cost of capital and the assessment of the Naviair overall estimated surplus on the en-route/terminal activity calculated in box 10.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Sweden

Version: 1.1

Date: 9 October 2017

SWEDEN

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	61	C	C	C	B	B
LFV NUAC	77	D	D	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	STA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	14	4
LFV	Number of questions answered	
	YES	NO
Policy and its implementation	10	3
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	18	6

Observations

One out of the four reviewed EoSM Components/areas of the State is at the 2019 EoSM target level "C".After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 2 are below Level C.

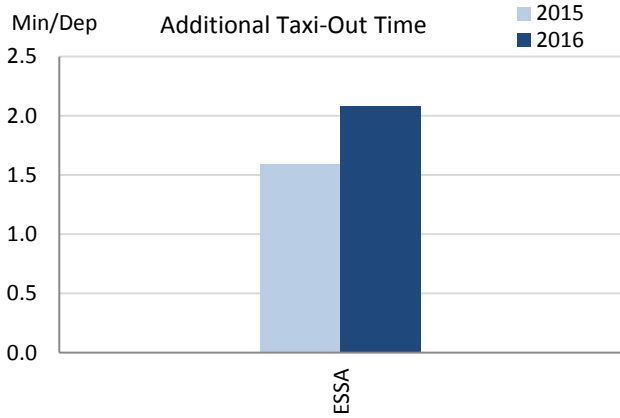
SWEDEN

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

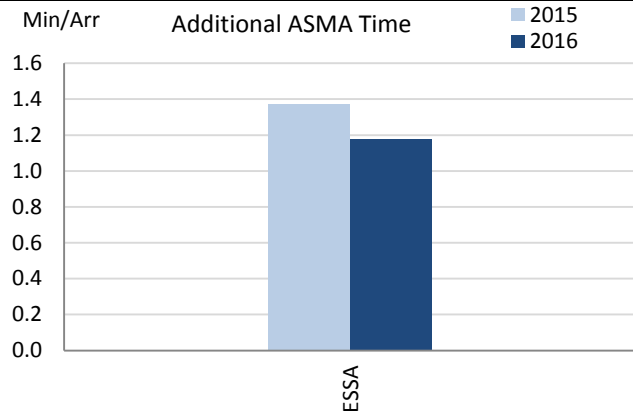
Stockholm/ Arlanda (ESSA) is the only Swedish airport subject to RP2 monitoring. The APDF is successfully established and the data shows a remarkable performance at ESSA, being one of the best in class for airports with that level of traffic (235000 flights per year).

2. Additional Taxi-Out Time



The additional taxi-out time in Stockholm Arlanda is slightly above 2 min/arr., around 30% more than last year. This increment is observed throughout the entire year, and not only concentrated around the runway 01R/19L closure in July.

3. Additional ASMA Time



As of March 2016, there is a visible reduction of the additional times in the terminal airspace at Stockholm airport with respect to 2015. The yearly average drops in 2016 to 1.18 min/arr.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Stockholm/ Arlanda	ESSA	1.59	2.08				1.37	1.18			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	N/A	N/A	N/A	N/A	N/A	FAB wide incentive scheme in place.
Deadband +/-						
Actual performance	0.02	0.07				

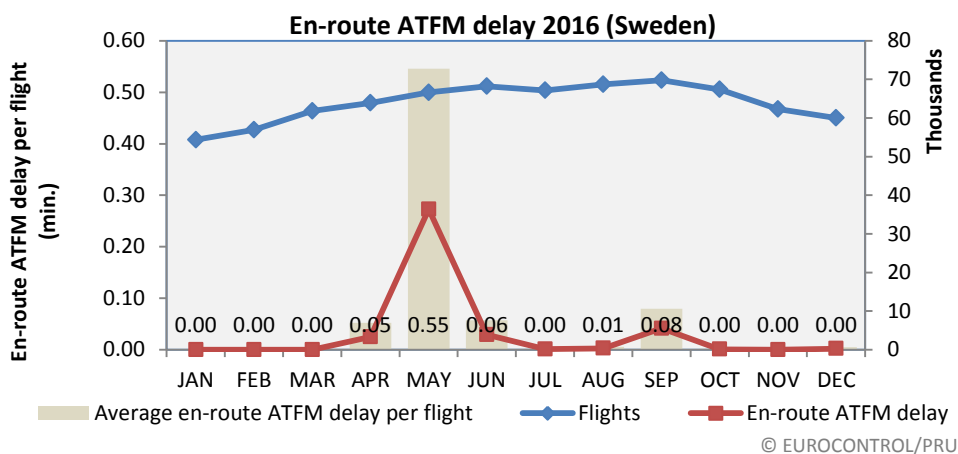
National capacity incentive scheme

Not applicable

Compliance issues relating to national capacity incentive scheme

Not applicable

Observations regarding national capacity performance



En-route ATFM delay per flight (Sweden)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.11	0.03	0.16	0.11	0.04	0.03	0.03	0.02	0.07

Sweden continues to satisfy the national contribution required to meet the FAB target for en route capacity in 2016.

Planning and Effective Use of CDRs

Sweden did not provide any data on this indicator

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 99%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 1%

Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

Even though Sweden did not specify the segregated or restricted areas used for calculation of the PI, the monitoring report states that use of Prior Coordination Areas (PCA) means that airspace is still available for general air traffic even during military exercises and that the figures provided only represent closed airspace.

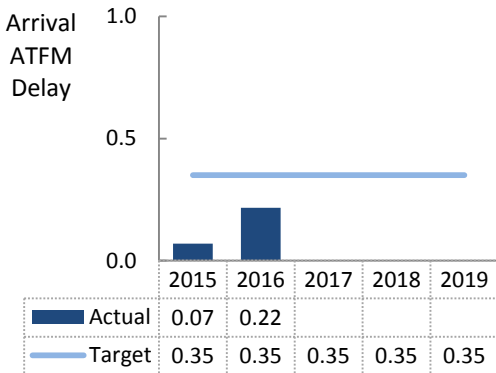
SWEDEN

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Sweden, ANS at Stockholm/Arlanda (ESSA) airport are subject to RP2. Despite a significant increase in arrival ATFM delay, the actual performance observed in 2015 and 2016 fully meets the established national target on arrival ATFM delay. The local performance is amongst the best-in-class and shows no capacity-related constraints. Sweden adequately contributes to the DK-SE FAB and European ANS Capacity performance.

2. Arrival ATFM Delay

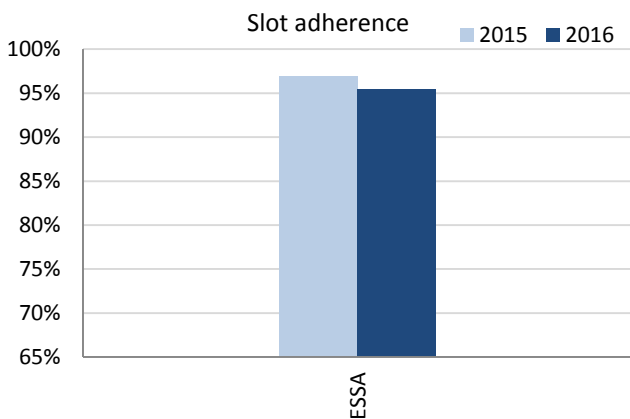


In 2016, the arrival ATFM delay approximately tripled at Stockholm/Arlanda (ESSA) in comparison with 2015. The majority of the arrival ATFM delay was accrued in November 2016 due to severe weather conditions. Despite these adverse conditions, the overall performance ranges in the best-in-class for airports with a yearly movement above 225000 flights. The actual performance exceeds the established national target. It must be noted that this target has been established as an upper bound in line with the maximum arrival ATFM delay observed throughout the years preceding RP2.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Sweden established a national target on arrival ATFM delay based on an upper bound of the maximum arrival ATFM delay observed throughout the years preceding RP2. This target has been met in 2015 and 2016. No incentive scheme is established. A reference is provided in the supporting documentation that the establishment of an incentive scheme for terminal ANS may be reviewed in 2017.

4. ATFM Slot Adherence



Slot adherence at Stockholm/Arlanda (ESSA) reduced by 1.5% and reaches now 95.4% in 2016. This actual performance ranges still in the group of best-in-class performers across Europe.

5. Pre-departure Delay

The share of pre-departure delay roughly doubled to 0.09 min/dep. in 2016. A significant spike of pre-departure delay has been observed in May 2016 which drives the average yearly value.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Stockholm/ Arlanda	ESSA	0.07	0.22				96.9%	95.4%				0.04	0.09			

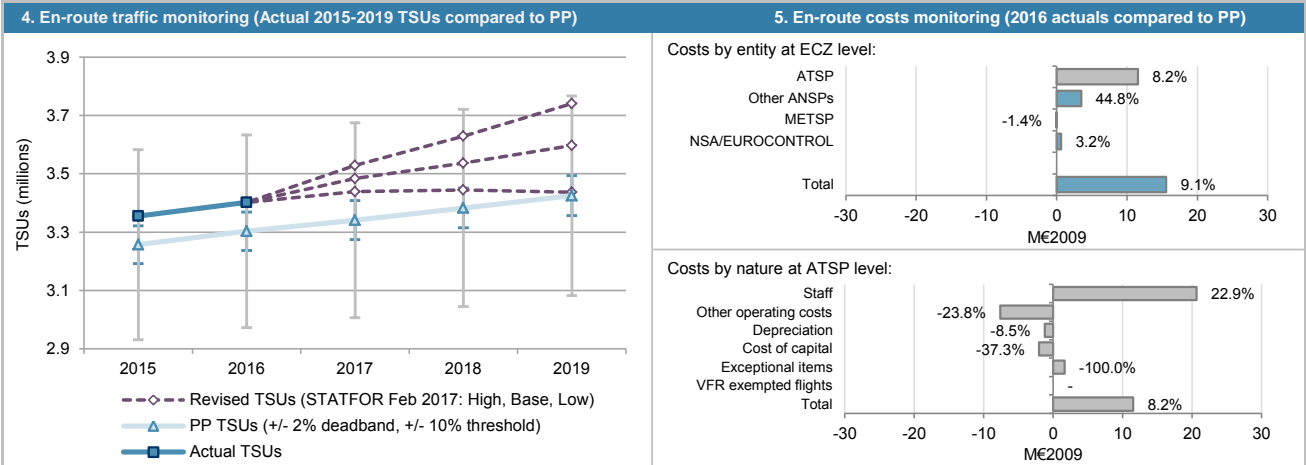
SWEDEN: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services																								
<ul style="list-style-type: none"> Sweden ECZ represents 2.8% of the SES en-route ANS determined costs in 2016 ATSP: LJV FAB: DK-SE FAB National currency: SEK Exchange rate 2009: 1 EUR = 10.6102 SEK 																								
2. En-route DUC monitoring at Charging Zone level																								
Sweden: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)	2015D	2016D	2017D	2018D	2019D																			
En-route costs (nominal SEK)	1 951 544 485	1 974 263 091	1 970 314 688	1 964 628 986	1 958 887 595																			
Inflation %	1.6%	2.4%	2.1%	2.0%	2.0%																			
Inflation index (100 in 2009)	106.1	108.6	110.9	113.1	115.4																			
Real en-route costs (SEK2009)	1 840 204 091	1 817 994 673	1 777 040 937	1 737 169 570	1 698 130 296																			
Total en-route Service Units	3 257 000	3 303 000	3 341 000	3 383 000	3 425 000																			
Real en-route unit cost per Service Unit (SEK2009)	565.00	550.41	531.89	513.50	495.80																			
Real en-route unit cost per Service Unit (EUR2009)	53.25	51.88	50.13	48.40	46.73																			
Sweden: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A																			
En-route costs (nominal SEK)	2 373 538 863	2 103 180 988																						
Inflation %	0.7%	1.1%																						
Inflation index (100 in 2009)	104.9	106.0																						
Real en-route costs (SEK2009)	2 262 850 219	1 983 284 204																						
Total en-route Service Units	3 354 938	3 401 901																						
Real en-route unit cost per Service Unit (SEK2009)	674.48	582.99																						
Real en-route unit cost per Service Unit (EUR2009)	63.57	54.95																						
Difference between Actuals and Planned	2015	2016	2017	2018	2019																			
En-route costs (nominal SEK)	in value 421 994 378	128 917 896																						
	in % 21.6%	6.5%																						
Inflation %	in p.p. -0.9 p.p.	-1.3 p.p.																						
Inflation index (100 in 2009)	in p.p. -1.2 p.p.	-2.6 p.p.																						
Real en-route costs (SEK2009)	in value 422 646 128	165 289 531																						
	in % 23.0%	9.1%																						
Total en-route Service Units	in value 97 938	98 901																						
	in % 3.0%	3.0%																						
Real en-route unit cost per Service Unit (SEK2009)	in value 109.48	32.59																						
	in % 19.4%	5.9%																						
Real en-route unit cost per Service Unit (EUR2009)	in value 10.32	3.07																						
	in % 19.4%	5.9%																						
3. Focus on en-route at State/Charging Zone level																								
<p>En-route unit cost In 2016, the actual en-route unit cost in real terms (582.99 SEK2009, or 54.95 €2009) is +5.9% higher than the DUC target (550.41 SEK2009, or 51.88 €2009). This difference results from the combination of higher than planned TSUs (+3.0%) and significantly higher than planned en-route costs in real terms (+9.1%, or +15.6 M€2009). It should be noted that the deviation in en-route costs is mainly driven by a large increase in LJV pension costs resulting from a significantly lower actual discount rate set by the Swedish Pension Authority. Excluding the effect of this increase, the actual en-route unit cost in real terms would be 521.94 SEK2009, which is -5.2% lower than planned.</p>																								
<p>En-route service units The difference between actual and planned TSUs (+3.0%) falls outside the ±2% dead-band, but within the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting additional en-route revenues relating to traffic risk sharing are therefore shared between the main en-route ATSP (LJV) and the airspace users, with the gain retained by the ATSP amounting to +3.3 M€2009. Considering the STATFOR February 2017 TSUs forecasts, it appears that the TSUs are very likely to remain higher than planned throughout RP2 in all forecast scenarios. It is noteworthy that the TSUs forecasts underpinning the en-route DUC targets were rather prudent since they were in line with the STATFOR February 2014 TSUs low case forecast scenario.</p>																								
<p>En-route costs In nominal terms, actual en-route costs are +6.5% higher than planned. However, since the actual inflation index is lower than foreseen (-2.6 p.p.), the actual en-route costs are +9.1% higher than planned when expressed in €2009. The higher than planned en-route costs in real terms are mainly driven by higher actual costs for the main ATSP-LJV (+8.2%, or +11.5 M€2009). Actual costs are also higher than planned for other ANSPs (+44.8%, or +3.5 M€2009). Smaller deviations are observed for the MET provider (-1.4%, or -0.1 M€2009) and the NSA/EUROCONTROL (+3.2%, or +0.6 M€2009). A detailed analysis of the main en-route ATSP (LJV) costs is provided in Box 12. Costs exempt from cost-sharing are reported for a total amount of +18.5 M€2009 relating to LJV pension costs (+19.6 M€2009) and EUROCONTROL costs (-1.0 M€2009). These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>																								
		<table border="1"> <caption>Difference between actual and determined en-route costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>23.0%</td> </tr> <tr> <td>2016</td> <td>9.1%</td> </tr> <tr> <td>2017</td> <td></td> </tr> <tr> <td>2018</td> <td></td> </tr> <tr> <td>2019</td> <td></td> </tr> </tbody> </table>					Year	Difference (%)	2015	23.0%	2016	9.1%	2017		2018		2019							
Year	Difference (%)																							
2015	23.0%																							
2016	9.1%																							
2017																								
2018																								
2019																								
		<table border="1"> <caption>Difference between actual and planned total service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>3.0%</td> </tr> <tr> <td>2016</td> <td>3.0%</td> </tr> <tr> <td>2017</td> <td></td> </tr> <tr> <td>2018</td> <td></td> </tr> <tr> <td>2019</td> <td></td> </tr> </tbody> </table>					Year	Difference (%)	2015	3.0%	2016	3.0%	2017		2018		2019							
Year	Difference (%)																							
2015	3.0%																							
2016	3.0%																							
2017																								
2018																								
2019																								
		<table border="1"> <caption>En-route DUC (PP, 2015-2019) vs En-route unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>En-route DUC (PP, 2015-2019) (€2009)</th> <th>En-route unit costs (actual) (€2009)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>53.25</td> <td>63.57</td> </tr> <tr> <td>2016</td> <td>51.88</td> <td>54.95</td> </tr> <tr> <td>2017</td> <td>50.13</td> <td></td> </tr> <tr> <td>2018</td> <td>48.40</td> <td></td> </tr> <tr> <td>2019</td> <td>46.73</td> <td></td> </tr> </tbody> </table>					Year	En-route DUC (PP, 2015-2019) (€2009)	En-route unit costs (actual) (€2009)	2015	53.25	63.57	2016	51.88	54.95	2017	50.13		2018	48.40		2019	46.73	
Year	En-route DUC (PP, 2015-2019) (€2009)	En-route unit costs (actual) (€2009)																						
2015	53.25	63.57																						
2016	51.88	54.95																						
2017	50.13																							
2018	48.40																							
2019	46.73																							

SWEDEN: En-route charging zone

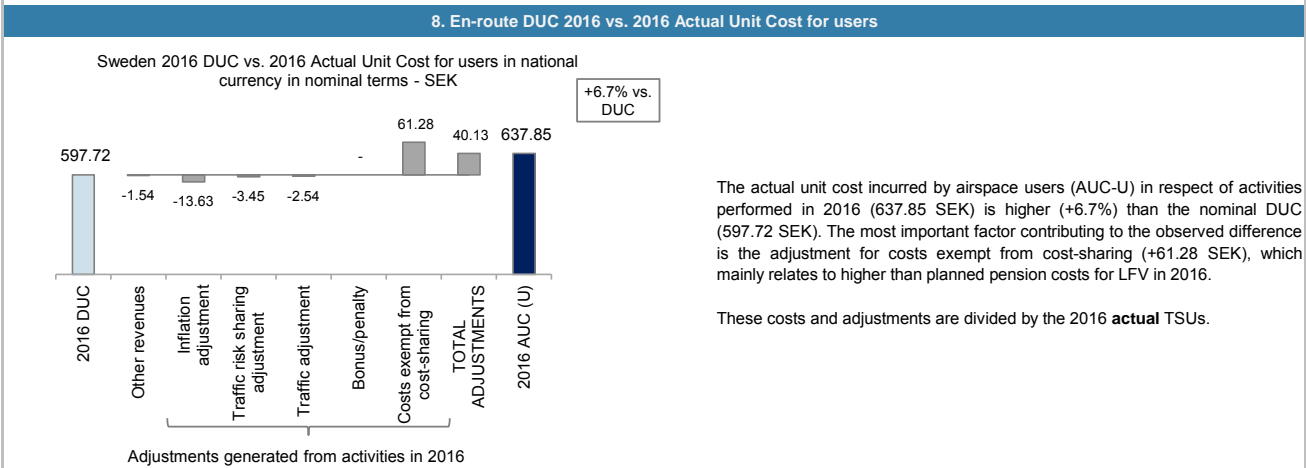
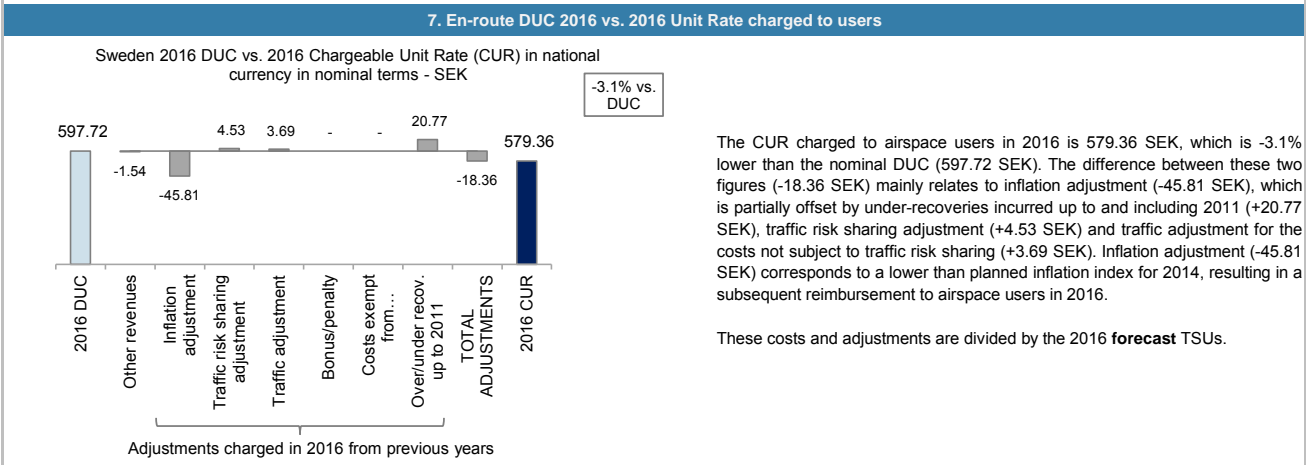
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	39 843	19 574			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	284	-1 046			
by entity	ATSP	39 843	19 574			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	284	-1 046			
Total costs exempt from cost sharing		40 127	18 528			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



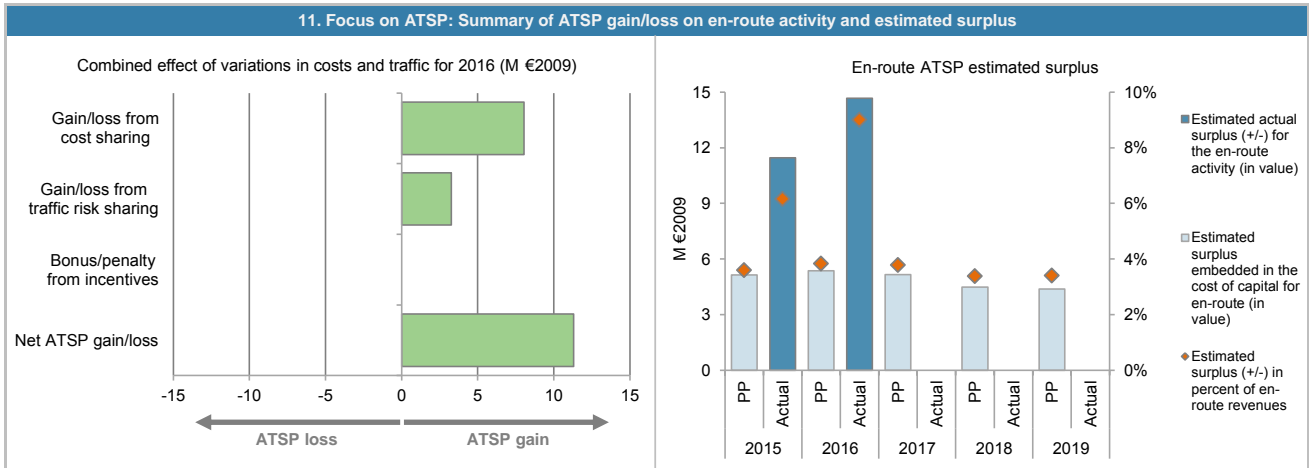
SWEDEN: En-route ATSP (LFV)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	142 525	140 007			
Actual costs for the ATSP	178 067	151 533			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-35 542	-11 526			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	39 843	19 574			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	4 301	8 048			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	3.0%	3.0%			
Determined costs for the ATSP (PP) - based on actual inflation	142 582	141 910			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	3 282	3 261			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	362	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	7 945	11 309			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	143 708	127 587	116 010	105 112	102 862
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	143 708	127 587	116 010	105 112	102 862
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	5 135	5 373	5 152	4 479	4 375
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	3.6%	4.2%	4.4%	4.3%	4.3%
Estimated surplus embedded in the cost of capital for en-route (in value)	5 135	5 373	5 152	4 479	4 375
Overall estimated surplus (+/-) for the en-route activity	5 135	5 373	5 152	4 479	4 375
Revenue/costs for the en-route activity	142 525	140 007	136 052	132 252	128 529
Estimated surplus (+/-) in percent of en-route revenues	3.6%	3.8%	3.8%	3.4%	3.4%
Estimated ex-ante RoE pre-tax rate (in %)	3.6%	4.2%	4.4%	4.3%	4.3%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	112 788	107 724			
Estimated proportion of financing through equity (in %) *see Note 1	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	112 788	107 724			
Estimated proportion of financing through debt (in %) *see Note 1	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	3 516	3 367			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %) *see Note 1	3.1%	3.1%			
Estimated surplus embedded in the cost of capital for en-route (in value)	3 516	3 367			
Net ATSP gain(+)/loss(-) on en-route activity	7 945	11 309			
Overall estimated surplus (+/-) for the en-route activity	11 461	14 676			
Revenue/costs for the en-route activity	186 012	162 842			
Estimated surplus (+/-) in percent of en-route revenues	6.2%	9.0%			
Estimated ex-post RoE pre-tax rate (in %)	10.2%	13.6%			

SWEDEN: En-route ATSP (LFV)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 LFV en-route costs vs. PP

In 2016, LFV actual en-route costs, in real terms, are significantly higher than planned (+8.2%, or +11.5 M€2009). Based on the Additional Information provided with the en-route Reporting Tables in June 2017, the observed deviation results from the combination of:

- Significantly higher than planned staff costs (+22.9%, or +20.7 M€2009), mainly due to higher pension costs driven by a lower discount rate than assumed in the PP. The difference between the actual and planned pension costs is reported as costs exempt from cost/sharing (see Box 6).
- Significantly lower than planned other operating costs (-23.8%, or -7.6 M€2009), reflecting the cost-cutting measures implemented by LFV, including lower costs for the training of ATCOs, lower maintenance costs and lower SESAR-costs.
- Lower than planned depreciation costs (-8.5%, or -1.2 M€2009), "mainly a result of the extra depreciations made in 2015 (scrapping, write-downs and extraordinary depreciation)."
- Significantly lower than planned cost of capital (-37.3%, or -2.0 M€2009), mainly reflecting a lower asset base than planned. See also **Note 1**.

It is also noteworthy that a deduction of -1.7 M€2009 was foreseen in the PP as (negative) exceptional costs for LFV, reflecting a "top-down" approach used by Sweden to ensure that each party in Sweden en-route cost-base contributes to the objective of cost-efficiency. This deduction also contributes to the observed deviation between LFV actual and determined costs in 2016.

LFV net gain/loss on en-route activity in 2016

As shown in Box 9, LFV generated a net gain of +11.3 M€2009 on the en-route activity, assuming the costs exempt from cost sharing are allowed by the European Commission, or a net loss of -8.3 M€2009 otherwise.

This is a combination of two elements:

- a gain of +8.0 M€2009 arising from the cost-sharing mechanism, taking into account the costs exempt from cost sharing as submitted in the Reporting Tables (+19.6 M€2009), or a loss of -11.5 M€2009 otherwise; and,
- a gain of +3.3 M€2009 arising from the traffic risk-sharing mechanism.

According to the NSA Monitoring Report the capacity performance in 2016 remained within the dead-band.

LFV overall 2016 estimated surplus for the en-route activity (see Note 2)

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+11.3 M€2009) and the surplus embedded in the actual cost of capital (+3.4 M€2009) amounts to +14.7 M€2009 (9.0% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 13.6%, which is higher than the 4.2% planned for 2016.

Excluding the effect of the cost exempt from cost sharing, LFV would incur a negative surplus of -4.9 M€2009 in 2016 or -3.4% of the en-route revenue.

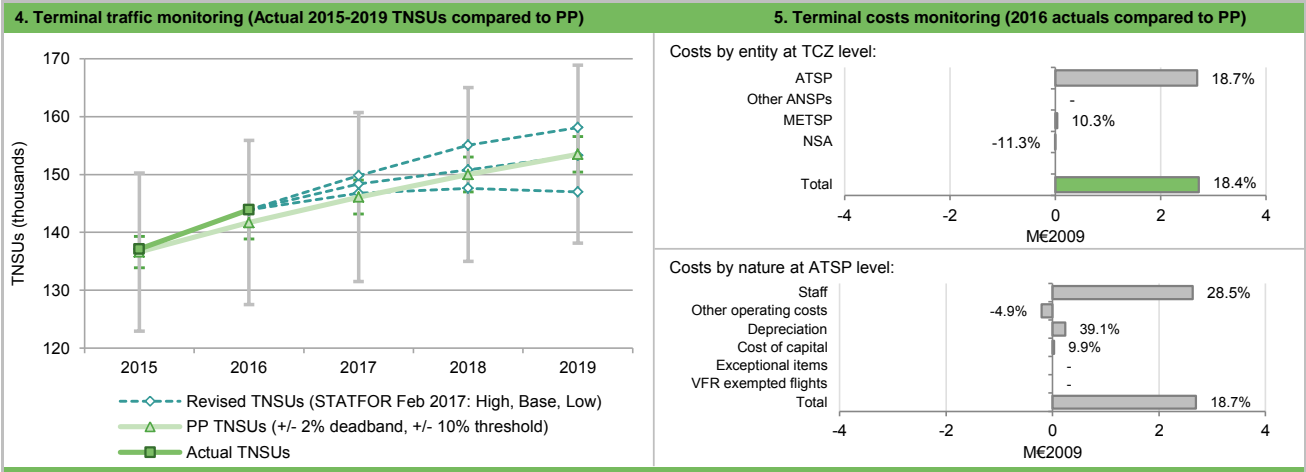
SWEDEN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services																							
· Sweden TCZ represents 1.3% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No																	
· ATSP: LFV					· Airports with fewer than 70,000 IFRs ATMs:	0																	
· National currency: SEK					· Airports with between 70,000 and 225,000 IFRs ATMs:	1																	
· Number of airports in charging zone in 2016: 1,	of which:				· Airports with more than 225,000 IFRs ATMs:	0																	
2. Terminal DUC monitoring at Charging Zone level																							
Sweden: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Terminal costs (nominal SEK)	169 678 803	170 109 786	172 098 429	175 956 588	178 967 182																		
Inflation %	1.6%	2.4%	2.1%	2.0%	2.0%																		
Inflation index (100 in 2009)	106.1	108.6	110.9	113.1	115.4																		
Real terminal costs (SEK2009)	159 998 211	156 645 123	155 216 806	155 584 812	155 143 968																		
Total terminal Service Units	136 600	141 700	146 100	150 000	153 500																		
Real terminal unit cost per Service Unit (SEK2009)	1 171.29	1 105.47	1 062.40	1 037.23	1 010.71																		
Real terminal unit cost per Service Unit (EUR2009)	110.39	104.19	100.13	97.76	95.26																		
Sweden: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Terminal costs (nominal SEK)	207 983 086	196 748 751																					
Inflation %	0.7%	1.1%																					
Inflation index (100 in 2009)	104.9	106.0																					
Real terminal costs (SEK2009)	198 283 912	185 532 625																					
Total terminal Service Units	137 100	143 900																					
Real terminal unit cost per Service Unit (SEK2009)	1 446.27	1 289.32																					
Real terminal unit cost per Service Unit (EUR2009)	136.31	121.52																					
Difference between Actuals and Planned																							
	2015	2016	2017	2018	2019																		
Terminal costs (nominal SEK)	in value 38 304 283	in value 26 638 965																					
	in % 22.6%	in % 15.7%																					
Inflation %	in p.p. -0.9 p.p.	in p.p. -1.3 p.p.																					
Inflation index (100 in 2009)	in p.p. -1.2 p.p.	in p.p. -2.6 p.p.																					
Real terminal costs (SEK2009)	in value 38 285 701	in value 28 887 502																					
	in % 23.9%	in % 18.4%																					
Total terminal Service Units	in value 500	in value 2 200																					
	in % 0.4%	in % 1.6%																					
Real terminal unit cost per Service Unit (SEK2009)	in value 274.98	in value 183.85																					
	in % 23.5%	in % 16.6%																					
Real terminal unit cost per Service Unit (EUR2009)	in value 25.92	in value 17.33																					
	in % 23.5%	in % 16.6%																					
3. Focus on terminal at State/Charging Zone level																							
<p>This analysis focuses on Sweden Terminal Charging Zone (TCZ) comprising only Stockholm-Arlanda airport for which no traffic risk sharing applies.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (1 289.32 SEK2009, or 121.52 €2009) is +16.6% higher than the DUC target (1 105.47 SEK2009, or 104.19 €2009). This difference results from the combination of higher than planned TNSUs (+1.6%) and significantly higher than planned terminal costs in real terms (+18.4%, or +28.9 M€2009, or +2.7 M€2009).</p> <p>Similarly to en-route, it is important to note that significantly higher than planned terminal costs are mainly driven by a large increase in LfV pension costs resulting from a significantly lower actual discount rate set by the Swedish Pension Authority. Excluding the effect of this increase, the actual terminal unit cost in real terms would be 1 141.26 SEK2009, which is +3.2% above plans.</p> <p>Terminal service units The traffic risk sharing mechanism does not apply in the Sweden TCZ. The difference between actual and planned TNSUs (+1.6%) therefore generates additional terminal revenues, which will be fully reimbursed to airspace users.</p> <p>Terminal costs In nominal terms, actual terminal costs are +15.7% higher than planned. However, since the 2016 actual inflation index is lower than planned (-2.6 p.p.), the actual terminal costs are +18.4% higher than planned when expressed in real terms.</p> <p>The higher than planned 2016 terminal costs, in real terms, are mainly driven by higher than planned actual costs for ATSPs (LfV and Swedavia, +18.7%, or +2.7 M€2009). Actual costs are also higher than planned for the MET provider (+10.3%, or +0.04 M€2009), while actual NSA costs are lower than planned (-11.3%, or -0.004 M€2009). A detailed analysis of ATSPs (LfV and Swedavia) costs is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for an amount of +2.0 M€2009 corresponding to LfV pension costs. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>																							
<table border="1"> <caption>Difference between actual and determined terminal costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>23.9%</td> </tr> <tr> <td>2016</td> <td>18.4%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	23.9%	2016	18.4%												
Year	Difference (%)																						
2015	23.9%																						
2016	18.4%																						
<table border="1"> <caption>Difference between actual and planned terminal service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>0.4%</td> </tr> <tr> <td>2016</td> <td>1.6%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	0.4%	2016	1.6%												
Year	Difference (%)																						
2015	0.4%																						
2016	1.6%																						
<table border="1"> <caption>Terminal DUC (PP, 2015-2019) and Terminal unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>Terminal DUC (PP, 2015-2019) (€2009)</th> <th>Terminal unit costs (actual) (€2009)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>110.39</td> <td>136.31</td> </tr> <tr> <td>2016</td> <td>104.19</td> <td>121.52</td> </tr> <tr> <td>2017</td> <td>100.13</td> <td>-</td> </tr> <tr> <td>2018</td> <td>97.76</td> <td>-</td> </tr> <tr> <td>2019</td> <td>95.26</td> <td>-</td> </tr> </tbody> </table>						Year	Terminal DUC (PP, 2015-2019) (€2009)	Terminal unit costs (actual) (€2009)	2015	110.39	136.31	2016	104.19	121.52	2017	100.13	-	2018	97.76	-	2019	95.26	-
Year	Terminal DUC (PP, 2015-2019) (€2009)	Terminal unit costs (actual) (€2009)																					
2015	110.39	136.31																					
2016	104.19	121.52																					
2017	100.13	-																					
2018	97.76	-																					
2019	95.26	-																					

SWEDEN: Terminal charging zone

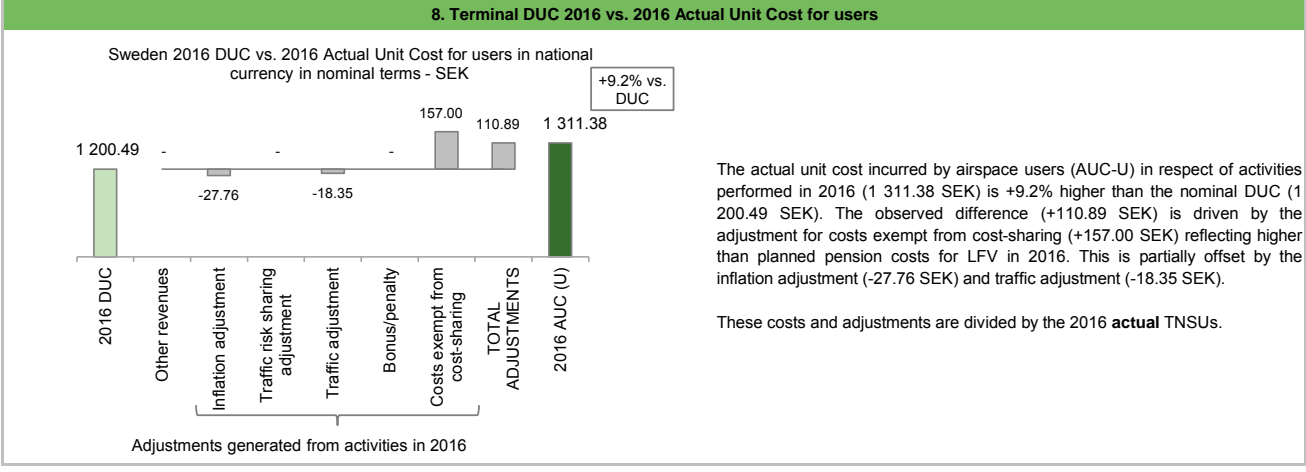
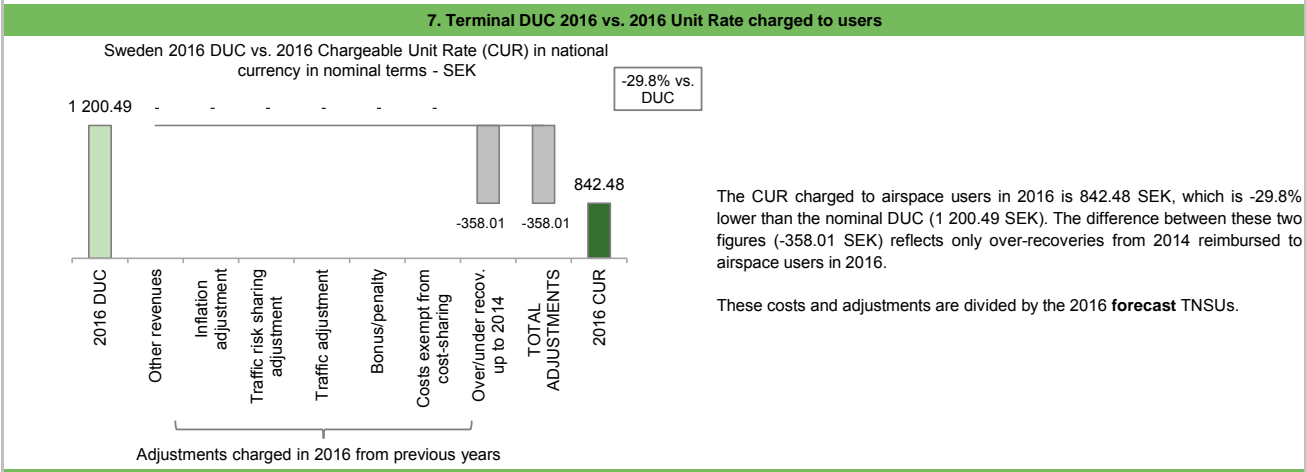
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	3 449	2 008			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	3 449	2 008			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		3 449	2 008			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



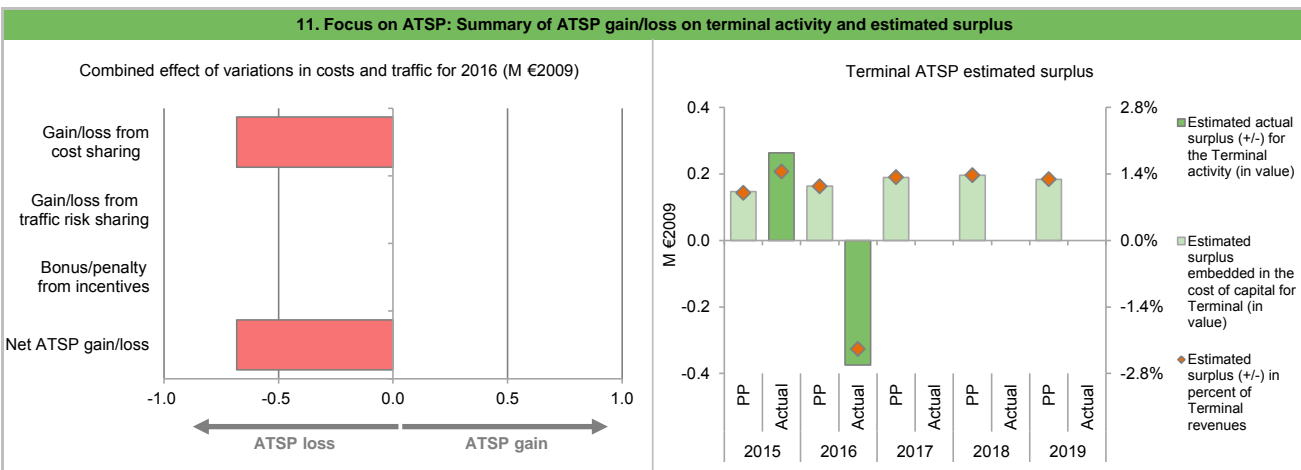
SWEDEN: Terminal ATSP (LFV)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	14 731	14 382			
Actual costs for the ATSP	18 173	17 073			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-3 442	-2 691			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	3 449	2 008			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	7	-683			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	7	-683			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	4 588	4 764	4 974	5 078	4 613
Estimated proportion of financing through equity (in %)	27.7%	29.7%	32.9%	33.5%	34.4%
Estimated proportion of financing through equity (in value)	1 273	1 416	1 639	1 701	1 586
Estimated proportion of financing through debt (in %)	72.3%	70.3%	67.1%	66.5%	65.6%
Estimated proportion of financing through debt (in value)	3 316	3 348	3 335	3 377	3 027
Cost of capital pre-tax (in value)	263	281	306	314	289
Average interest on debt (in %)	3.5%	3.5%	3.5%	3.5%	3.5%
Interest on debt (in value)	116	117	117	118	106
Determined RoE pre-tax rate (in %)	11.5%	11.5%	11.5%	11.5%	11.5%
Estimated surplus embedded in the cost of capital for terminal (in value)	147	163	189	196	183
Overall estimated surplus (+/-) for the terminal activity	147	163	189	196	183
Revenue/costs for the terminal activity	14 731	14 382	14 262	14 294	14 242
Estimated surplus (+/-) in percent of terminal revenues	1.0%	1.1%	1.3%	1.4%	1.3%
Estimated ex-ante RoE pre-tax rate (in %)	11.5%	11.5%	11.5%	11.5%	11.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	4 682	4 034			
Estimated proportion of financing through equity (in %)	47.4%	66.2%			
Estimated proportion of financing through equity (in value)	2 220	2 672			
Estimated proportion of financing through debt (in %)	52.6%	33.8%			
Estimated proportion of financing through debt (in value)	2 462	1 362			
Cost of capital pre-tax (in value)	342	308			
Average interest on debt (in %)	3.5%	0.0%			
Interest on debt (in value)	86	0			
Determined RoE pre-tax rate (in %)	11.5%	11.5%			
Estimated surplus embedded in the cost of capital for terminal (in value)	256	308			
Net ATSP gain(+)/loss(-) on terminal activity	7	-683			
Overall estimated surplus (+/-) for the terminal activity	263	-375			
Revenue/costs for the terminal activity	18 180	16 390			
Estimated surplus (+/-) in percent of terminal revenues	1.4%	-2.3%			
Estimated ex-post RoE pre-tax rate (in %)	11.8%	-14.0%			

SWEDEN: Terminal ATSP (LFV)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 ATSPs (LFV and Swedavia) terminal costs vs. PP

Actual terminal costs for ATSPs (LFV and Swedavia), in real terms, are significantly higher than planned (+18.7%, or +2.7 M€2009). This results from the combination of:

- Significantly higher than planned staff costs (+28.5%, or +2.6 M€2009). As for en-route, this difference is mainly due to significantly higher than planned pension costs for LFV;
- Lower than planned other operating costs (-4.9%, or -0.2 M€2009) reflecting entirely the cost-cutting measures implemented by LFV (lower costs for training of ATCOs and lower SESAR-costs);
- Higher than planned depreciation costs (+39.1%, or +0.2 M€2009); and,
- Higher than planned cost of capital (+9.9%, or +0.03 M€2009).

It is noteworthy that no capital related costs (depreciation and cost of capital) are reported for LFV in the terminal Reporting Tables. These costs are fully borne by the airport operator (Swedavia, see also **Note 2**) that owns the CNS infrastructure used by LFV to provide terminal ANS services.

According to Additional Information provided with the terminal Reporting Tables “Swedavia’s determined costs contain a calculation error which make the comparison of actual costs and determined costs by each row in the table below not applicable. The actual costs 2016 were higher than the determined costs mainly due to increased joint expertise in ATM centrally in Swedavia and increased activities in operating and maintaining equipment.”

ATSPs (LFV and Swedavia) 2016 net gain/loss on terminal activity

As shown in box 9 above, the terminal activity generated a net loss of -0.7 M€2009 in 2016 as a result of the cost sharing mechanism, assuming the costs exempt from cost sharing are allowed by the European Commission. If the exemptions are not found eligible, ATSPs would incur a net loss of -2.7 M€2009.

ATSPs (LFV and Swedavia) 2016 overall estimated surplus for the terminal activity (see Note 2)

Ex-post, the overall estimated surplus for ATSPs (LFV and Swedavia) taking into account the net loss from the terminal activity mentioned above (-0.7 M€2009) and the surplus embedded in the cost of capital (+0.3 M€2009) amounts to -0.4 M€2009, which implies a negative surplus (-2.3% of the 2016 terminal revenues) and a negative ex-post RoE (-14.0%) in 2016. This indicates that the part of surplus embedded in the cost of capital through the return on equity was not sufficient to compensate for the losses arising from the higher than planned actual costs. *Excluding the costs exempt from cost sharing, ATSPs would incur even larger negative surplus of -2.4 M€2009 in 2016 (or -16.6% of the 2016 terminal revenues).*

Finally, considering the fact that LFV does not report any cost of capital (i.e. there is no part of surplus embedded in the cost of capital), the 2016 overall economic surplus for LFV (excluding Swedavia’s part) is equal to the net loss incurred by LFV (-0.1 M€2009), as shown in the table below.

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
	2015	2016	2017	2018	2019
Cost sharing ('000 €2009)					
Determined costs for the ATSP (PP) - based on planned inflation	10 498	10 299			
Actual costs for the ATSP	13 895	12 389			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-3 397	-2 091			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	3 449	2 008			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	52	-83			
Traffic risk sharing ('000 €2009)					
	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)					
	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/p	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	52	-83			

SWEDEN: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
Sweden: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	173 437 267	171 344 053	167 484 207	163 726 374	160 046 964																		
Real terminal costs (EUR2009)	15 079 660	14 763 635	14 629 018	14 663 702	14 622 153																		
Real gate-to-gate costs (EUR2009)	188 516 927	186 107 688	182 113 225	178 390 076	174 669 117																		
En-route share (%)	92.0%	92.1%	92.0%	91.8%	91.6%																		
Sweden: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	213 271 212	186 922 415																					
Real terminal costs (EUR2009)	18 688 047	17 486 251																					
Real gate-to-gate costs (EUR2009)	231 959 259	204 408 666																					
En-route share (%)	91.9%	91.4%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	43 442 332	18 300 978																					
in %	23.0%	9.8%																					
En-route share																							
in p.p.	-0.1%	-0.6%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
<p>In 2016, actual gate-to-gate ANS costs are significantly higher than planned (+9.8%, or +18.3 ME2009) due to higher than planned actual costs in both en-route (+9.1%, or +15.6 ME2009) and terminal ANS activities (+18.4%, or +2.7 ME2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (91.4%) is -0.6 p.p. lower than planned the PP for 2016 (92.1%).</p> <p>For LFV (see Note 2), the estimated gate-to-gate economic surplus in 2016 amounts to ME2009 (see boxes 10 for the detailed analysis at charging zone level), corresponding to of gate-to-gate revenues.</p>																							
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																					
2015	83%	17%																					
2016	85%	15%																					
2017	82%	18%																					
2018																							
2019																							
3. Technical notes on en-route and terminal information reported by Sweden																							
Note 1: ATSP return on equity (RoE) and cost of capital																							
<p>In preparing this report, some 'adjustments' were made to the en-route data disclosed by Sweden relating to the LFV cost of capital. According to the Additional Information provided with the June 2017 en-route Reporting Tables, LFV has "no external loans" and the only debt considered for the Weighted Average Cost of Capital (WACC) calculation is the pension liability, with the interest rate on debt being the estimated interest rate on the pension liabilities. On the other hand, it is noted that the planned asset base does NOT include the pension debt. To reflect this, the table in box 10 has been amended, by changing the actual proportion of financing through equity to 100% and revising the RoE pre-tax rate (in %) to reflect the pre-tax cost of capital amount as a proportion of the total asset base.</p> <p>It is to be noted that the actual en-route cost of capital reported for LFV is calculated using a lower RoE pre-tax rate (3.1%) compared to the planned one (4.2%, see also Note 2 below).</p>																							
Note 2: ATSP costs reported in en-route and terminal Reporting Tables																							
<p>In the en-route Reporting Tables, the data provided for the ATSPs (LFV and ACR) include also the costs relating to the CNS infrastructure owned by the airport operators. This reporting impairs the analysis of the overall estimated en-route surplus for LFV calculated in box 10. For compliance with the charging regulation, it is required to present separately the costs of the different ATSPs and other entities (i.e. airport operators).</p> <p>In the terminal Reporting Tables, the costs of the main terminal ATSP (LFV) and airport operator (Swedavia) are now presented separately. For monitoring purposes, the overall estimated terminal surplus for ATSPs (LFV and Swedavia) is presented in box 10, while the estimation of LFV surplus is provided in box 12.</p>																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

FAB CE

Version: 1.1

Date: 9 October 2017

FAB CE

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	B			
	ANSPs	For Safety Culture MO	C	D			
	ANSPs	For all other MOs	C	C			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	100%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		95%	100%			
	ATM Specific Occurences (ATM-S)		91%	85%			

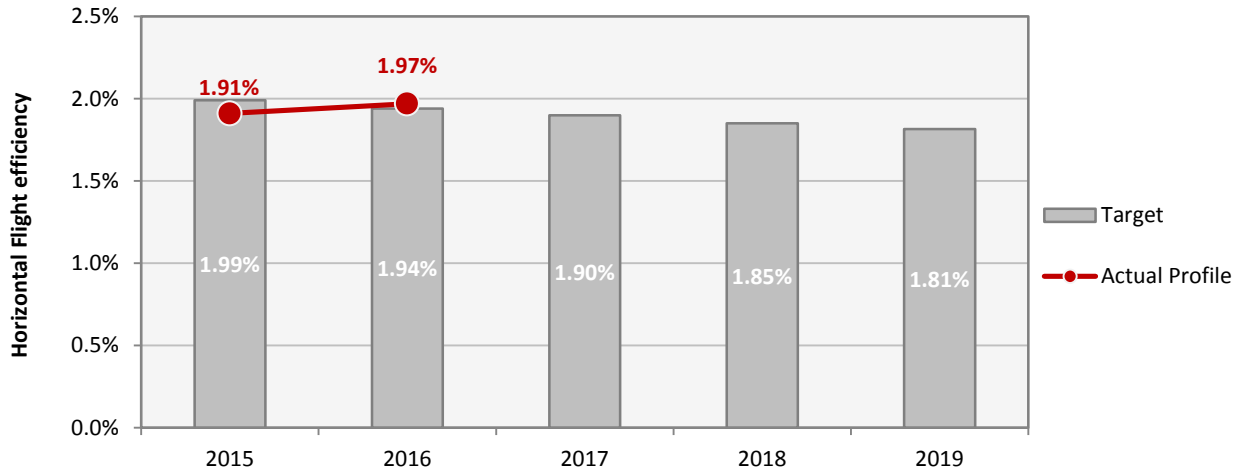
Observations

The lowest answer in all EoS Component/area of the States is Level "B" which is below the 2019 EoS target level. All components are at this level.

FAB CE

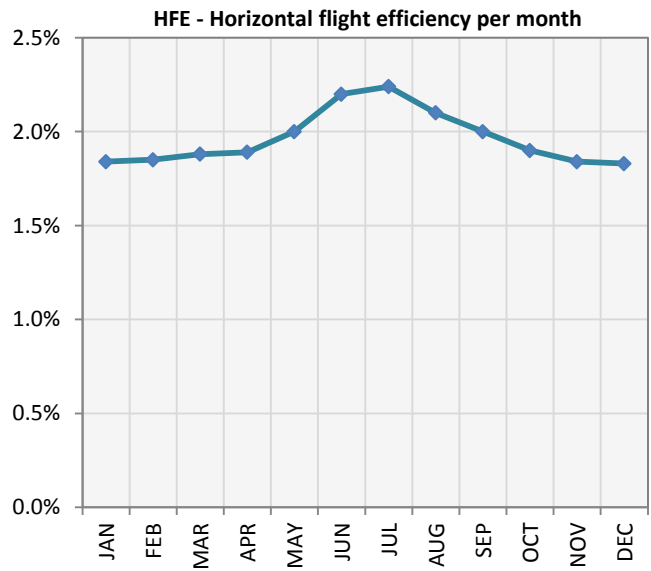
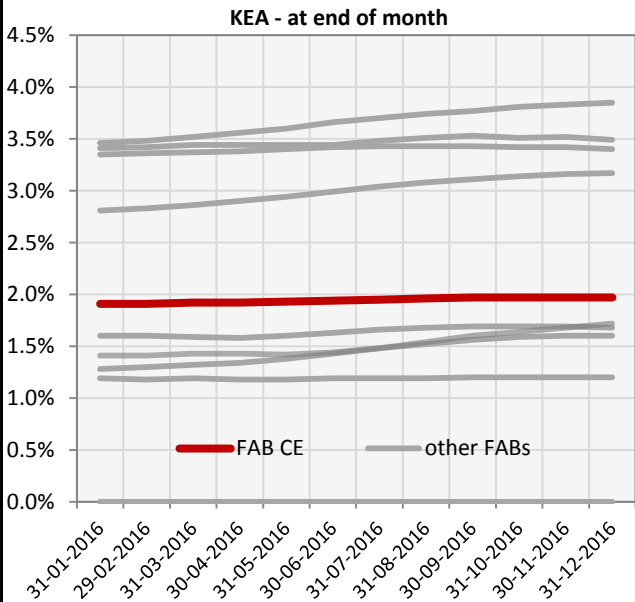
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	1.99%	1.94%	1.90%	1.85%	1.81%
Actual performance	1.91%	1.97%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	1.91%	1.91%	1.92%	1.92%	1.93%	1.94%	1.95%	1.96%	1.97%	1.97%	1.97%	1.97%
HFE	1.84%	1.85%	1.88%	1.89%	2.00%	2.20%	2.24%	2.10%	2.00%	1.90%	1.84%	1.83%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

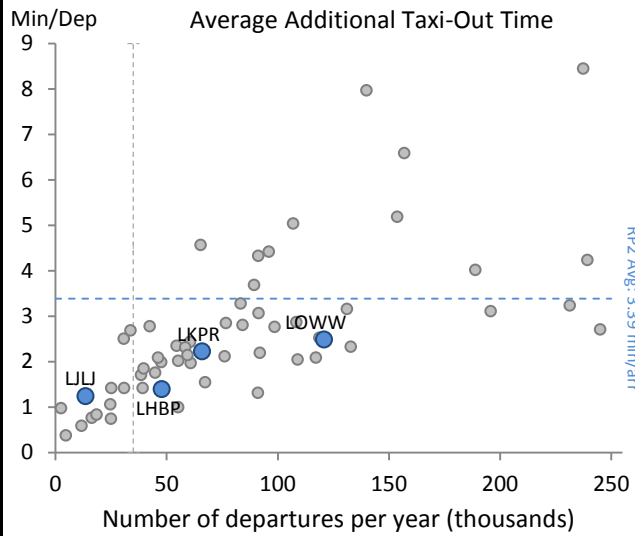
Observations

NM proposed measures: Maintain current implementation plans, including cross-border FRA implementation with adjacent FABs.

1. Overview

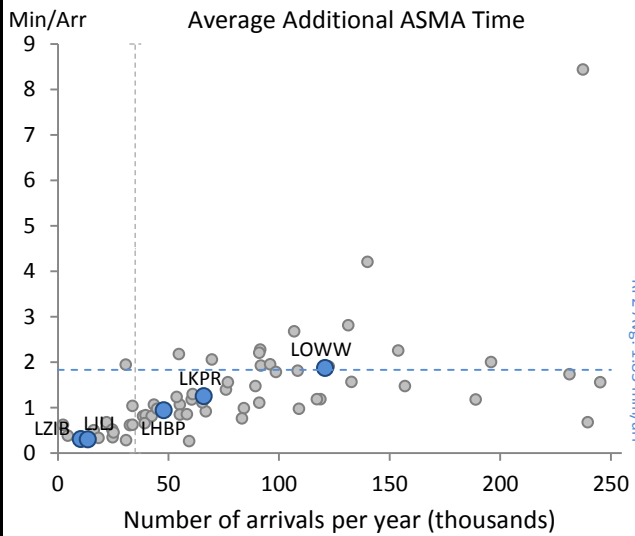
There are 16 airports in FAB CE under RP2 monitoring. Nevertheless, the monitoring of 12 of them cannot be performed due to the lack of data. Only 4 airports have properly established the Airport Operator Data Flow for 2016. The performance of these few airports that can be monitored show values in line with the European trend.

2. Additional Taxi-Out Time



Available data allows for calculation of additional taxi-out times only at Vienna (LOWW), Prague (LKPR), Budapest (LHBP) and Ljubljana (LJU). All of them show performances below the RP2 average.

3. Additional ASMA Time



The additional ASMA times at available airports in FAB CE are commensurate with the level of traffic.

FAB CE

Monitoring of CAPACITY for 2016

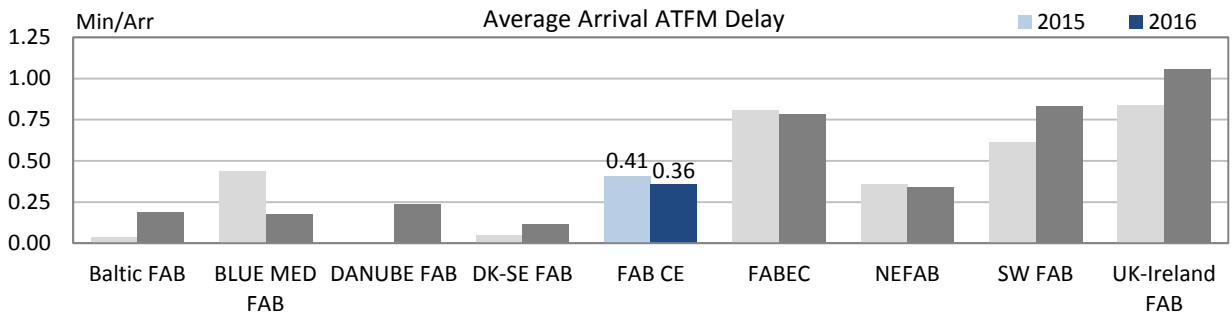
Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.30	0.29	0.29	0.29	0.29	
FAB Target	0.29	0.29	0.28	0.28	0.27	
Actual performance	0.21	0.08				
FAB CE assessment of capacity performance						
<p>FAB CE met and exceeded its en-route capacity target by 0.21 minutes. All states have exceeded their capacity targets except for Hungary where the capacity target was missed only by a small margin in spite of the traffic increase by more than 18% due to the situation in Ukraine. The overall performance of all FAB CE states is constantly excellent, without any major disruptions or industrial actions.</p> <p>At a FAB level, en-route traffic was +4.6% higher than forecast (in terms of service units). However, this increase was not uniform across states; Hungary’s traffic experienced +18% more service units than planned, the Czech Republic had +3.8% more traffic than planned while the outturn traffic was broadly in line with the forecasts for the other states (+/-1%). FAB CE significantly exceeded its en-route capacity target</p>						
Monitoring process for capacity performance						
<p>The FAB CE monitoring process is established through the FAB CE Network OPS Group (FNOPG) responsible for the development and annual maintenance of the FAB CE Network Operations Plan (FNOP), in line with the European Network Operations Plan (process coordinated and managed by the Network Manager, and the Network Manager reports to the member states via the Single Sky Committee) and European Performance Scheme, satisfying FAB CE operational needs. The FNOP includes and considers ANSP strategic operational planning issues, State strategic operational planning (National Performance Plans), and contributes to the FAB CE Performance Plan and its coordination and validation.</p>						
Application of Corrective Measures for Capacity						
<p>Any corrective measures are applied as necessary during the review process performed annually for regular updates of the FAB CE Network Operations Plan and the FAB CE Airspace Plan.</p>						
Capacity Planning						
<p>Planned capacity enhancement measures of individual States are listed in detail in the European Network Operations Plan 2017-2021, as well as in the national LSSIPs (chapter 2) and updated version of the FAB CE Network Operations Plan that is currently going through the approval process.</p>						
Assessment of capacity performance						
<p>It is noted that FAB CE provided a positive contribution to the Union-wide target for en route capacity in 2016 by achieving a level of en route capacity performance that surpassed the FAB CE target. It is also noted that the Network Manager expects FAB CE to continue providing a positive contribution to the Union-wide target for each year of RP2.</p>						
En route Capacity Incentive Scheme						
<p>Annex E of the revised FAB CE performance plan, submitted in July 2015, contained details of the en route capacity incentive scheme to be implemented within FAB CE during RP2. The incentive scheme would be based upon both FAB-wide and national performance levels according to the formula: Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. In cases where the FAB capacity performance is better than the FAB target, then ONLY bonuses would be paid - no penalty would apply even if the local ANSP performed worse than the national target. (Vice versa, if FAB capacity performance was worse than the FAB target, then only penalties would be paid - no bonuses even if the local ANSP performed better than the national target.)</p>						

Compliance Issues Regarding FAB Capacity Incentive Scheme
<p>The PRB noted a compliance issue relating to the en route capacity incentive scheme proposed in the FAB CE revised performance plan, in the assessment of the RP2 FAB Performance Plans - FAB CE. The compliance issue concerned the fact that the ANSP contribution was not consistent with the FAB targets or the FAB reference value.</p> <p>The FAB CE monitoring report stated that no compliance issues were addressed.</p>
Result of FAB Capacity Incentive Scheme
<p>The FAB CE reports that the actual FAB delay of 0.08 minutes per flight instead of the FAB target of 0.29 minutes per flight, a percentage deviation of 72%, results in a FAB PONDER of 50% to be applied for the five States that surpassed their national capacity target, by at least the 3pp dead-band: Austria, Croatia, Czech Republic, Slovakia and Slovenia. Neither penalties nor bonuses will be applied to the State that did not meet its national target, Hungary. Further details of capacity related bonuses are presented in the national reports following.</p>
Update on Military dimension of the plan
<p>No new information was provided on how civil and military cooperation is providing additional capacity.</p>
Observations on Military dimension of the plan
<p>Whilst the plans for improved civil military cooperation within FAB CE, are noted, information on how these plans are actually improving capacity for airspace users would be appreciated.</p>
Application of FUA
<p>No new information was provided on how the Member States of FAB CE are applying the FUA concept to provide the optimum for both civil and military airspace users.</p>
Observations of the Application of FUA
<p>Whilst the plans of the FAB CE Member States, to further implement aspects of FUA, are acknowledged, information to show how the FAB authorities determine if optimum benefit to airspace users is being delivered would be appreciated.</p>

1. Overview

FAB CE contributes adequately to the airport-related ANS Capacity performance in Europe. The aggregated average of arrival ATFM delay ranges well below the European average and improved in 2016 by an additional 0.05 min/arr. The overall performance in FAB CE is driven by Austria, and primarily by the observed performance at Vienna (LOWW). Relatively low levels of compliance with the ATFM slot have been observed at the seasonal airports Innsbruck (LOWI) and Salzburg (LOWS). The ANS performance at other FAB CE airports is commensurate with the level of traffic and shows no specific capacity constraint. These airports accrue negligible arrival ATFM delay and demonstrate a best-in-class compliance with ATFM slots.

2. Arrival ATFM Delay

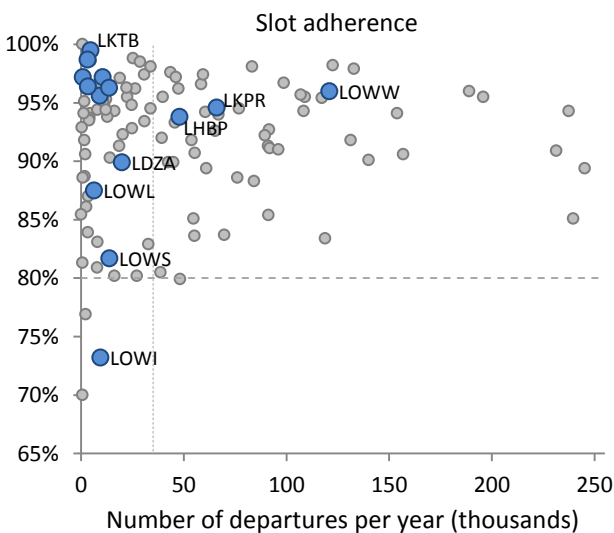


Across Europe, FAB CE achieves a good performance in terms of arrival ATFM delay of 0.36 min/arr. in 2016 improving by 0.05 min/arr. in comparison to 2015.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

The plan sets a national target on arrival ATFM delay with a breakdown for each of the major airports per FAB CE Member State. For Austria, a challenging target has been established entailing an improvement of 0.5 minutes per arrival as of 2016. The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for FAB CE Member States.

4. ATFM Slot Adherence



There is a varied performance in terms of adherence to ATFM slots. While the majority range above 95%, the observed performance at Linz (LOWL) and Zagreb (LDZA) differs significantly from the better performing services at the other airports. Notable is also the relatively weak compliance with ATFM slots at Salzburg (LOWS) and Innsbruck (LOWI) considering the level of traffic experienced at these airports.

5. Pre-departure Delay

Across FAB CE the implementation of the Airport Operator Data Flow is limited to the airports that started reporting under RP1. In particular the implementation of the data specification for RP2 is on-going and FAB CE is encouraged to strengthen the effort to ensure the timely implementation and consistency of monitoring of pre-departure delay.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Austria

Version: 1.1

Date: 9 October 2017

AUSTRIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	61	C	C	C	B	C
Austro Control	91	D	E	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	AustroControl	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	16	2
Austro Control	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	22	2

Observations
<p>Three reviewed EoSM Components/areas of the State meet the 2019 EoSM target level, with the exception of safety promotion. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 1 is below Level C.</p>

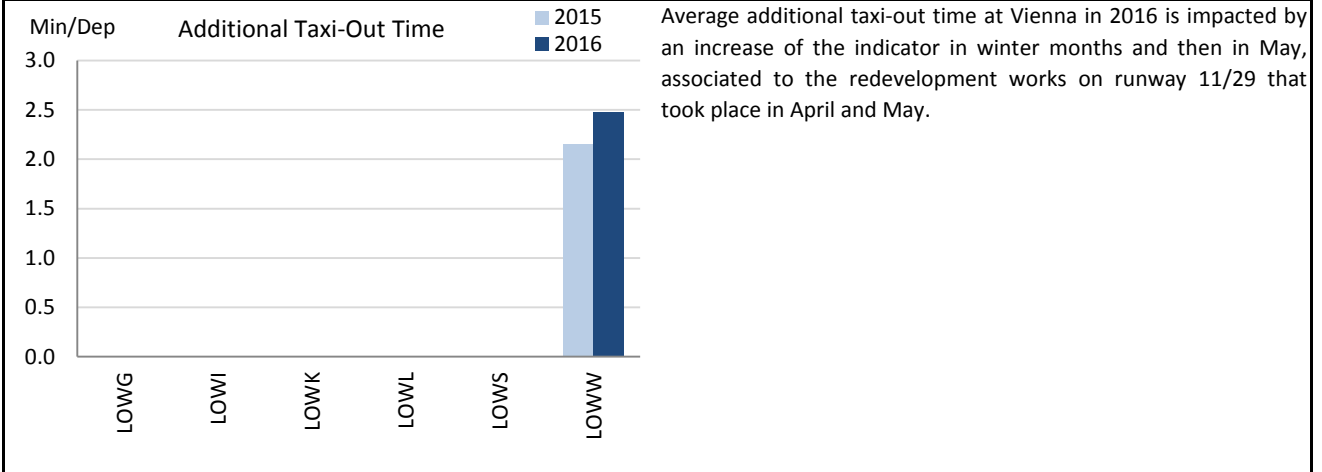
AUSTRIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

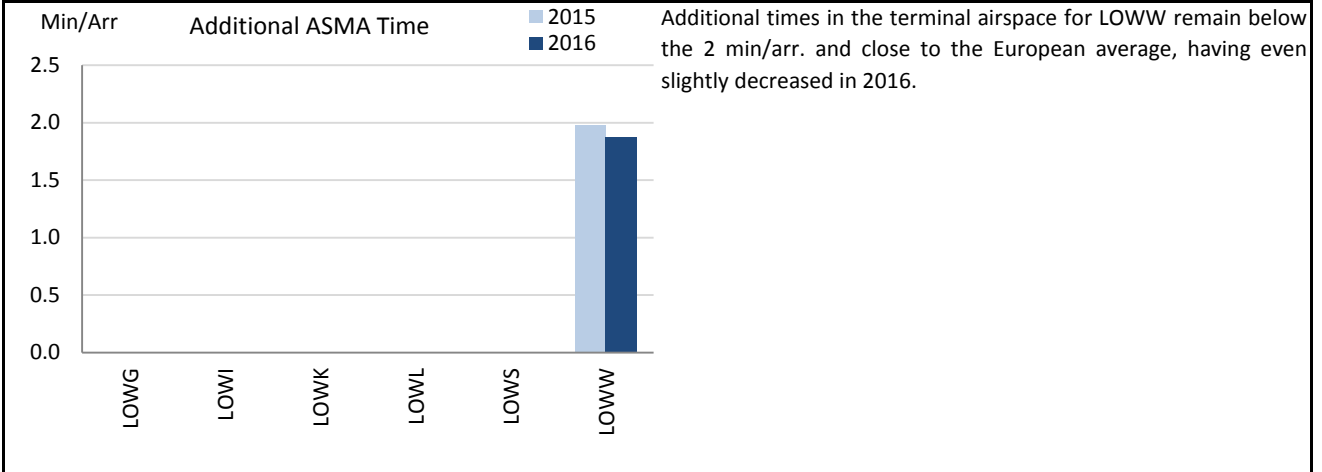
1. Overview

Austria identified six airports as subject to RP2. However there is only available data from Vienna (LOWW) as the rest of airports have not yet established the Airport Operator Data Flow. Vienna's performance is commensurate to its number of movements, which has remained at the same level than in 2015. The rest of Austrian airports should implement the APDF for an adequate monitoring.

2. Additional Taxi-Out Time



3. Additional ASMA Time



4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Graz	LOWG	n/a	n/a				n/a	n/a			
Innsbruck	LOWI	n/a	n/a				n/a	n/a			
Klagenfurt	LOWK	n/a	n/a				n/a	n/a			
Linz	LOWL	n/a	n/a				n/a	n/a			
Salzburg	LOWS	n/a	n/a				n/a	n/a			
Vienna	LOWW	2.15	2.48				1.98	1.87			

AUSTRIA

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.21	0.21	0.20	0.19	0.19	FAB CE reports national performance for Austria according to the Vienna FIR, consistent with the FAB CE performance plan.
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.06	0.05				

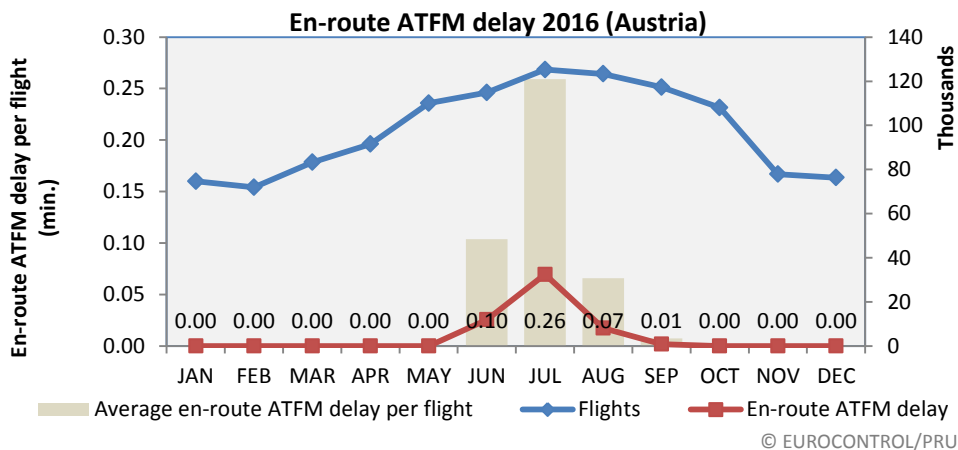
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Austria 0.05 minutes per flight instead of the national target of 0.21 minutes per flight, a percentage deviation of 76%, results in a NATIONAL ANSP ELEMENT of 76%. Therefore the national en route capacity incentive for Austria = 50% * 76% * 0.5% (0.19%) of en route revenue of Austro Control = 385,661.76 EUR

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Austria)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
1.10	0.97	1.23	0.18	0.13	0.21	0.02	0.06	0.05

The positive contribution to capacity performance from Austria during 2016, with the vast majority of ATFM delay occurring during the Summer Months and attributed to adverse weather phenomena is noted. Even though the Network Manager expects Vienna ACC to have sufficient capacity to handle traffic for the remainder of RP2, significant capacity shortfalls are expected in Austria, in the Tyrol region, where traffic is handled by the DFS based in Germany. It would be expected that FAB CE and Austria in particular determine if and what corrective measures are needed to ensure sufficient capacity for airspace users in Austria.

Planning and Effective Use of CDRs

Austria did not provide any data. Since AIRAC Nov 2016, Austria has declared Free Route Airspace from GND-UNL.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 74%.

No information was provided regarding the allocation of airspace at H-3, it is impossible to determine how much restricted or segregated airspace, that was surplus to requirements, was released for GAT use.

Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

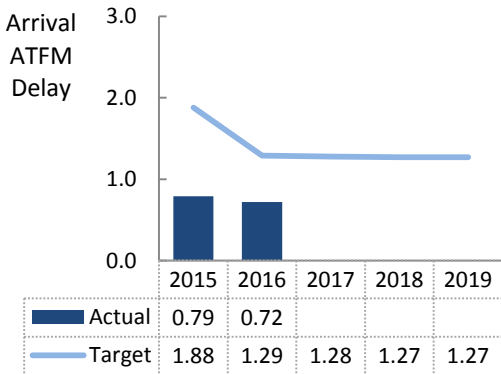
AUSTRIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Austria, ANS at a total of 6 airports is subject to RP2. Austria established a national target on arrival ATFM delay. The actual performance in terms of arrival ATFM delay improved from 0.79 min/arr. in 2015 to 0.72 min/arr. in 2016. In both years the national target is fully met. Austria has not established an incentive scheme for the national target. The adherence to ATFM slots is varied in Austria. With Vienna (LOWW), Graz (LOWG), and Klagenfurt (LOWK) high levels of compliance above 95% are observed. Innsbruck (LOWI) and Salzburg (LOWS) show a weak adherence to ATFM slot. To ensure the consistent monitoring of pre-departure delay, Austria is encouraged to strengthen the level of implementation of the Airport Operator Data Flow across the airports. The flow is currently only implemented for LOWW.

2. Arrival ATFM Delay



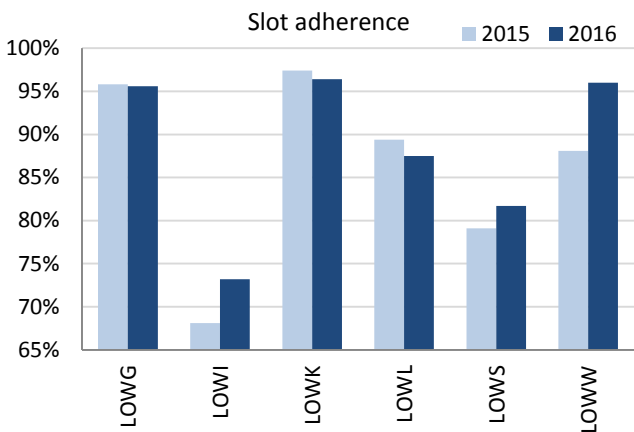
The national average of arrival ATFM delay improved in 2016 slightly (2015: 0.79 min/arr. vs 2016: 0.72 min/arr.) in comparison to 2015. The major driver for the national arrival ATFM performance is Vienna airport (LOWW). LOWW improved in 2016 by 0.1 min/arr. (2015: 1.06 min/arr. vs 2016: 0.96 min/arr.) and added positively to the national average. A shallow increase of arrival ATFM delay has been observed at Salzburg (LOWS) and Innsbruck (LOWI). Both airports experienced this increase in delay during the month of January 2016 and in combination with seasonal traffic and weather conditions. The national target of 1.29 min/arr. has been fully met.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target on arrival ATFM delay for Austria.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Austria.

4. ATFM Slot Adherence



There has been a significant improvement in terms of slot adherence at Vienna (LOWW, 2015: 88.1%, 2016: 96.0%) by just under 8%. Accordingly the compliance rate of LOWW ranges now above the 95% threshold. ATFM slot adherence improved also in Innsbruck (LOWI) and Salzburg (LOWS). However, the observed performance is relatively low for both airports considering the level of traffic experienced. It must also be noted that the compliance with the slot window occurs across the year with no clear correlation to the number of regulated flight or aforementioned seasonal weather and traffic.

5. Pre-departure Delay

The Airport Operator Data Flow is currently only established for Vienna (LOWW). To ensure consistency of the reporting, Austria shall encourage and empower the respective airport operator reporting entities to implement the Airport Operator Data Flow.

The observed performance at LOWW deteriorated in 2016 to 1.16 min/dep. (2015: 1.00 min/dep.).

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Graz	LOWG	0.00	0.00				95.8%	95.6%				n/a	n/a			
Innsbruck	LOWI	0.01	0.05				68.1%	73.2%				n/a	n/a			
Klagenfurt	LOWK	0.00	0.00				97.4%	96.4%				n/a	n/a			
Linz	LOWL	0.00	0.00				89.4%	87.5%				n/a	n/a			
Salzburg	LOWS	0.07	0.12				79.1%	81.7%				n/a	n/a			
Vienna	LOWW	1.06	0.96				88.1%	96.0%				1.00	1.16			

AUSTRIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> · Austria ECZ represents 2.7% of the SES en-route ANS determined costs in 2016 · ATSP: Austro Control · FAB: FAB CE · National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Austria: Data from RP2 Performance Plan (EC Decision 2016/599 of 15 April 2016)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		188 243 000	194 934 000	204 696 000	209 564 000	207 200 000
Inflation %		1.7%	1.7%	1.7%	1.7%	1.7%
Inflation index (100 in 2009)		114.2	116.1	118.1	120.1	122.1
Real en-route costs (EUR2009)		164 901 573	167 908 470	173 369 786	174 525 859	169 672 673
Total en-route Service Units		2 693 000	2 777 000	2 850 000	2 928 000	3 014 000
Real en-route unit cost per Service Unit (EUR2009)		61.23	60.46	60.83	59.61	56.29
Austria: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		177 369 528	185 344 157			
Inflation %		0.8%	1.0%			
Inflation index (100 in 2009)		113.1	114.3			
Real en-route costs (EUR2009)		156 763 660	162 189 938			
Total en-route Service Units		2 739 285	2 749 863			
Real en-route unit cost per Service Unit (EUR2009)		57.23	58.98			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-10 873 472	-9 589 843			
	in %	-5.8%	-4.9%			
Inflation %	in p.p.	-0.9 p.p.	-0.7 p.p.			
	in p.p.	-1.0 p.p.	-1.8 p.p.			
Real en-route costs (EUR2009)	in value	-8 137 913	-5 718 531			
	in %	-4.9%	-3.4%			
Total en-route Service Units	in value	46 285	-27 137			
	in %	1.7%	-1.0%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-4.01	-1.48			
	in %	-6.5%	-2.5%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (58.98 €2009) is -2.5% lower than planned in the PP (60.46 €2009). This difference results from the combination of lower than planned TSUs (-1.0%) and lower than planned en-route costs (-3.4%, or -5.7 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (-1.0%) does not fall outside the ±2% dead band. The resulting loss of en-route revenues (-1.4 M€2009) is therefore borne solely by the ATSP.</p> <p>The number of en-route service units (SUs) planned in the PP for the 2017-2019 period is slightly higher than the STATFOR February 2017 base case. If this scenario materialises, the traffic is expected to stay within the ±2% dead band foreseen in the traffic risk-sharing mechanism for the remainder of RP2.</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -4.9% lower than planned. However, since the actual inflation index is also lower than planned (-1.8 p.p.), actual en-route costs are -3.4% below the planned level when expressed in €2009.</p> <p>The lower than planned en-route costs in real terms are driven by reductions across all the reporting entities: Austro Control (-1.8% or some -2.6 M€2009), METSP (-18.7% or -2.9 M€2009) and the NSA/EUROCONTROL (-2.4%, or -0.3 M€2009). Austro control being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of +5.7 M€2009 relating to pension costs and EUROCONTROL costs (see technical note 1 in gate-to-gate box 3). These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed eligible by the European Commission.</p>						

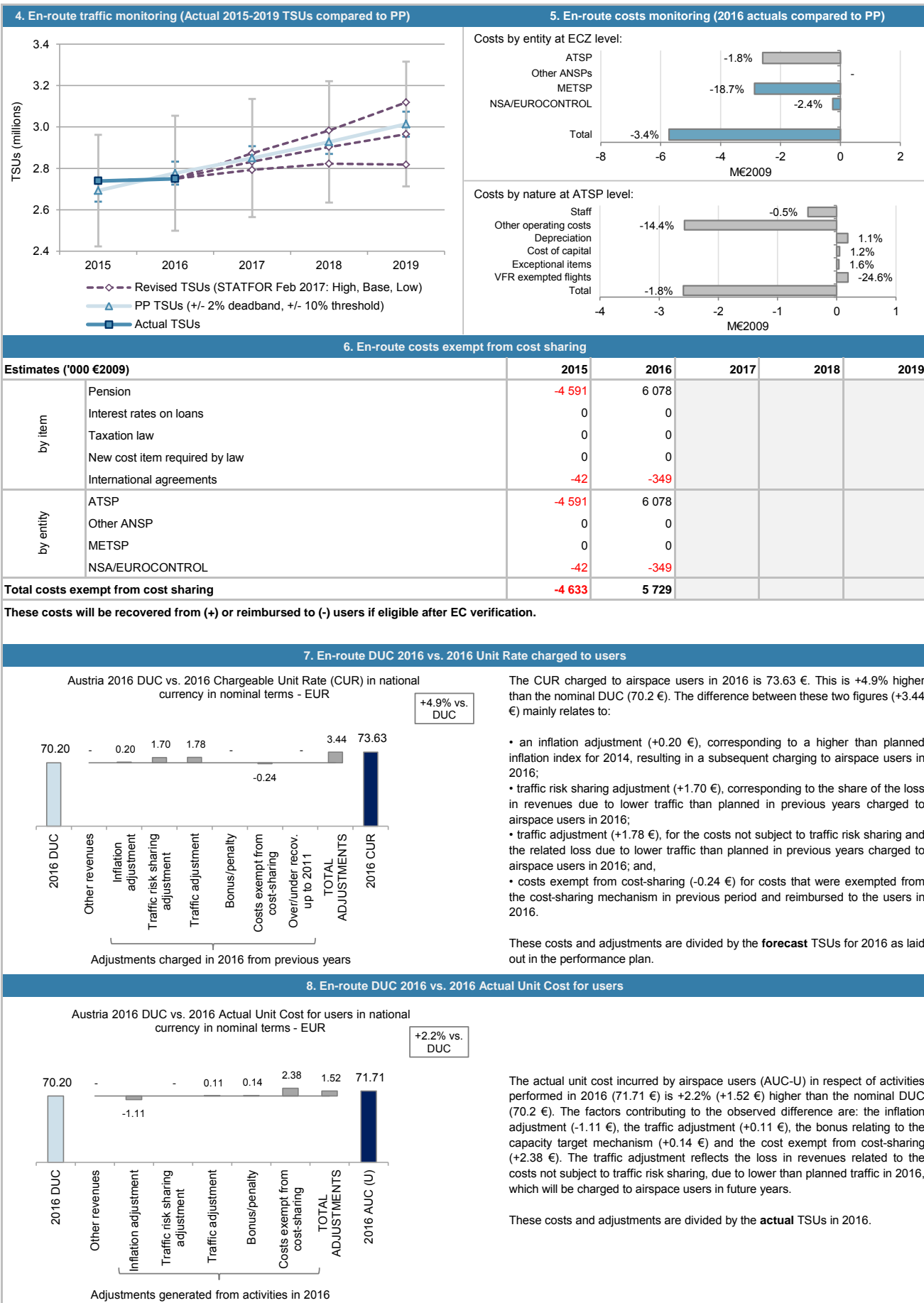
Year	Difference (%)
2015	-4.9%
2016	-3.4%
2017	
2018	
2019	

Year	Difference (%)
2015	1.7%
2016	-1.0%
2017	
2018	
2019	

Year	En-route DUC (PP) (€2009)	En-route unit costs (actual) (€2009)
2015	61.23	57.23
2016	60.46	58.98
2017	60.83	
2018	59.61	
2019	56.29	

AUSTRIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



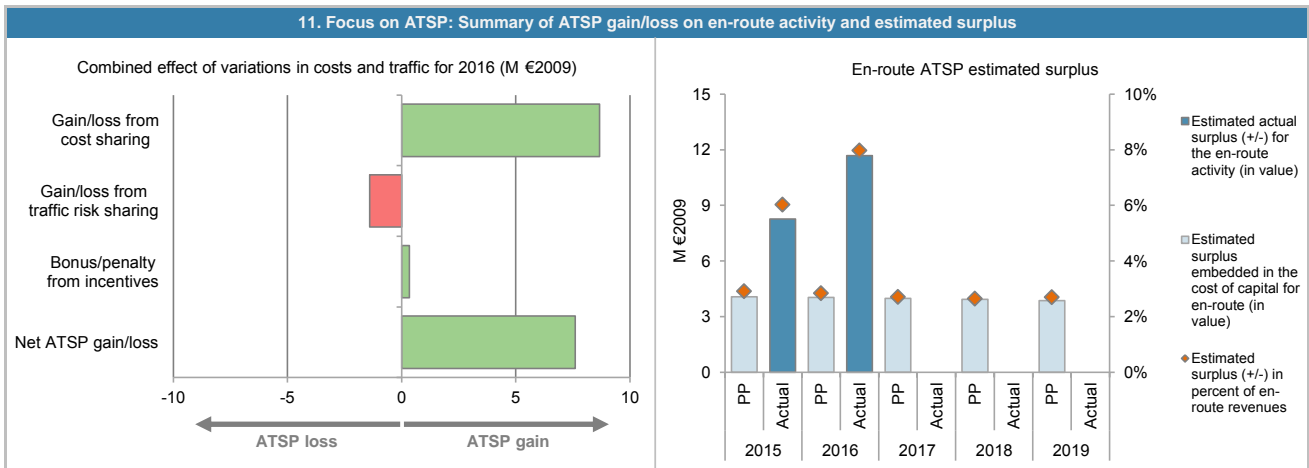
AUSTRIA: En-route ATSP (Austro Control)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	139 252	141 598			
Actual costs for the ATSP	133 108	139 005			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	6 144	2 593			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-4 591	6 078			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 554	8 671			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.7%	-1.0%			
Determined costs for the ATSP (PP) - based on actual inflation	140 496	143 853			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	2 415	-1 406			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	127	337			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 095	7 603			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	101 595	100 801	99 772	98 292	96 669
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	101 595	100 801	99 772	98 292	96 669
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	4 064	4 032	3 991	3 932	3 867
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	4 064	4 032	3 991	3 932	3 867
Overall estimated surplus (+/-) for the en-route activity	4 064	4 032	3 991	3 932	3 867
Revenue/costs for the en-route activity	139 252	141 598	147 184	148 168	143 170
Estimated surplus (+/-) in percent of en-route revenues	2.9%	2.8%	2.7%	2.7%	2.7%
Estimated ex-ante RoE pre-tax rate (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	104 379	102 024			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	104 379	102 024			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	4 175	4 081			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	4.0%	4.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	4 175	4 081			
Net ATSP gain(+)/loss(-) on en-route activity	4 095	7 603			
Overall estimated surplus (+/-) for the en-route activity	8 270	11 684			
Revenue/costs for the en-route activity	137 203	146 608			
Estimated surplus (+/-) in percent of en-route revenues	6.0%	8.0%			
Estimated ex-post RoE pre-tax rate (in %)	7.9%	11.5%			

AUSTRIA: En-route ATSP (Austro Control)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 Austro Control en-route costs vs. PP

In 2016, Austro Control actual en-route costs are -1.8% (-2.6 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- lower staff costs (-0.5% or -0.5 M€2009), as indicated in the Additional Information to the June 2017 en-route Reporting Tables mainly due to costs containment measures (collective agreement) applicable for RP1 and 2016, a lower inflation than planned and deviation from social capital/pensions cost;
- lower other operating costs (-14.4% or -2.6 M€2009), mainly due to costs optimisation programs decided in RP1 that have been maintained including training, external services, optimisation of maintenance contracts and travel costs;
- higher depreciation costs (+1.1% or +0.2 M€2009);
- a higher cost of capital (+1.2% or +0.05 M€2009); and,
- higher exceptional items (+1.6% or +0.2 M€2009).

From the Additional Information to the June 2017 en-route Reporting Tables, it is our understanding that the staff costs have been impacted by the recognition of actuarial losses for pension liabilities up to 2012 following the cancellation of the so-called "corridor method". This loss will be recovered over 14 years starting in 2016.

Austro Control net gain/loss on en-route activity in 2016

As shown in box 9, Austro Control generated a net gain of +7.6 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +8.7 M€2009 arising from the cost-sharing mechanism;
- a loss of -1.4 M€2009 arising from the traffic risk-sharing mechanism; and,
- a gain of +0.3 M€2009, corresponding to a bonus eligible for payment to Austro Control as part of the capacity target incentive mechanism. This amount corresponds to 0.2% of Austro Control en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission.

Note that if the costs exempt from cost-sharing included in this analysis for the year 2016 (+6.1 M€2009) are not deemed eligible by the European Commission, the net gain generated by Austro Control on its en-route activity would amount to +1.5 M€2009.

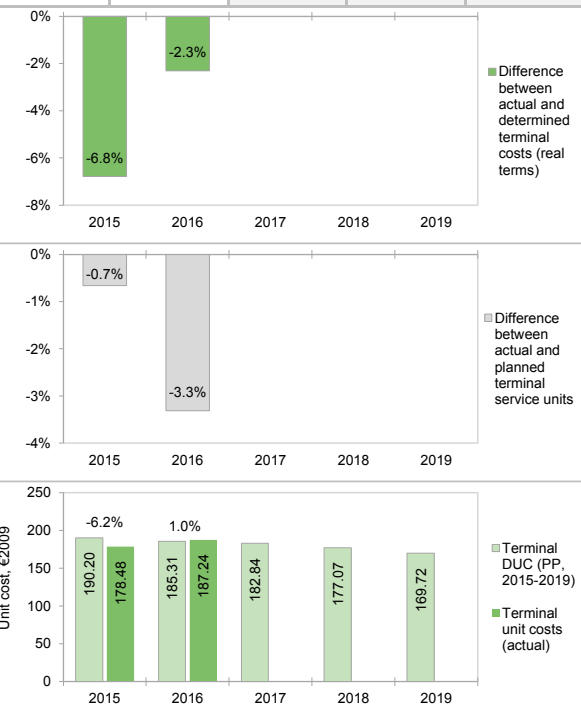
Austro Control overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+7.6 M€2009) and the surplus embedded in the actual cost of capital (+4.1 M€2009) amounts to +11.7 M€2009 (8% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 11.5%, which is higher than the 4.0% planned in the PP.

AUSTRIA: Terminal charging zone

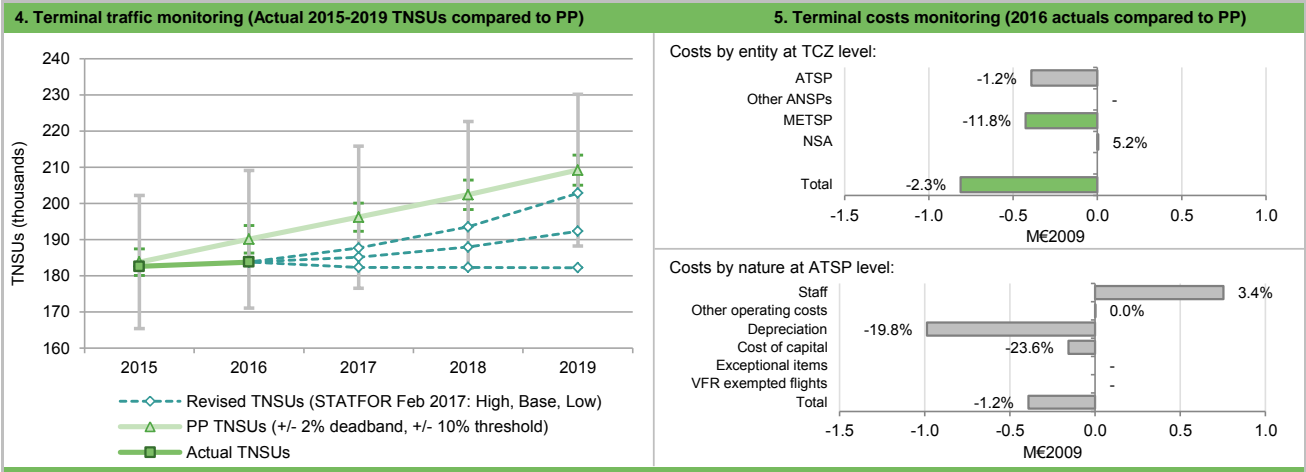
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Austria TCZ represents 3.2% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	Austro Control	· Airports with fewer than 70,000 IFRs ATMs:		5	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	6,	of which:	· Airports with more than 225,000 IFRs ATMs:	1	
2. Terminal DUC monitoring at Charging Zone level					
Austria: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	39 907 000	40 897 000	42 355 000	43 033 000	43 359 000
Inflation %	1.7%	1.7%	1.7%	1.7%	1.7%
Inflation index (100 in 2009)	114.2	116.1	118.1	120.1	122.1
Real terminal costs (EUR2009)	34 958 681	35 227 065	35 873 086	35 838 079	35 505 972
Total terminal Service Units	183 800	190 100	196 200	202 400	209 200
Real terminal unit cost per Service Unit (EUR2009)	190.20	185.31	182.84	177.07	169.72
Austria: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	36 870 804	39 327 723			
Inflation %	0.8%	1.0%			
Inflation index (100 in 2009)	113.1	114.3			
Real terminal costs (EUR2009)	32 587 346	34 414 686			
Total terminal Service Units	182 586	183 801			
Real terminal unit cost per Service Unit (EUR2009)	178.48	187.24			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -3 036 196	in value -1 569 277			
	in % -7.6%	in % -3.8%			
Inflation %	in p.p. -0.9 p.p.	in p.p. -0.7 p.p.			
Inflation index (100 in 2009)	in p.p. -1.0 p.p.	in p.p. -1.8 p.p.			
Real terminal costs (EUR2009)	in value -2 371 335	in value -812 379			
	in % -6.8%	in % -2.3%			
Total terminal Service Units	in value -1 214	in value -6 299			
	in % -0.7%	in % -3.3%			
Real terminal unit cost per Service Unit (EUR2009)	in value -11.72	in value 1.93			
	in % -6.2%	in % 1.0%			
3. Focus on terminal at State/Charging Zone level					
This analysis focuses on the Austria Terminal Charging Zone (TCZ) comprising 6 airports: Wien-Schwechat, Linz, Salzburg, Innsbruck, Graz and Klagenfurt.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (187.24 €2009) is +1% higher than planned in the PP (185.31 €2009). This difference results from the combination of lower than planned TNSUs (-3.3%) and lower than planned terminal costs (-2.3%, or -0.8 M€2009).					
Terminal service units					
Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (-3.3%) falls outside the ±2% dead band, but does not exceed the -10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the airspace users and the ATSP, the latter bearing a loss of -0.8 M€2009. Based on the STATFOR February 2017 base TNSU scenario, Austria TNSUs are expected to exceed the TNSUs planned in the PP for the remainder of RP2. If this scenario materialises, the traffic is expected to exceed the ±2% dead band foreseen in the traffic risk-sharing mechanism but remain within the 10% threshold for the remainder of RP2.					
Terminal costs					
In nominal terms, actual terminal costs are -3.8% lower than planned. However, since the actual inflation index is also lower than planned (-1.8 p.p.) the actual terminal costs are -2.3% below the planned level when expressed in €2009. The lower than planned terminal costs in real terms are driven by reductions in the following reporting entities: Austro Control (-1.2% or some -0.4 M€2009), METSP (-11.8% or -0.4 M€2009); and an increase for the NSA entity (+5.2%, or +0.01 M€2009). Austro control being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12. Costs exempt from cost-sharing are reported for the TCZ for a total amount of +1.3 M€2009 relating to pension costs. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.					



AUSTRIA: Terminal charging zone

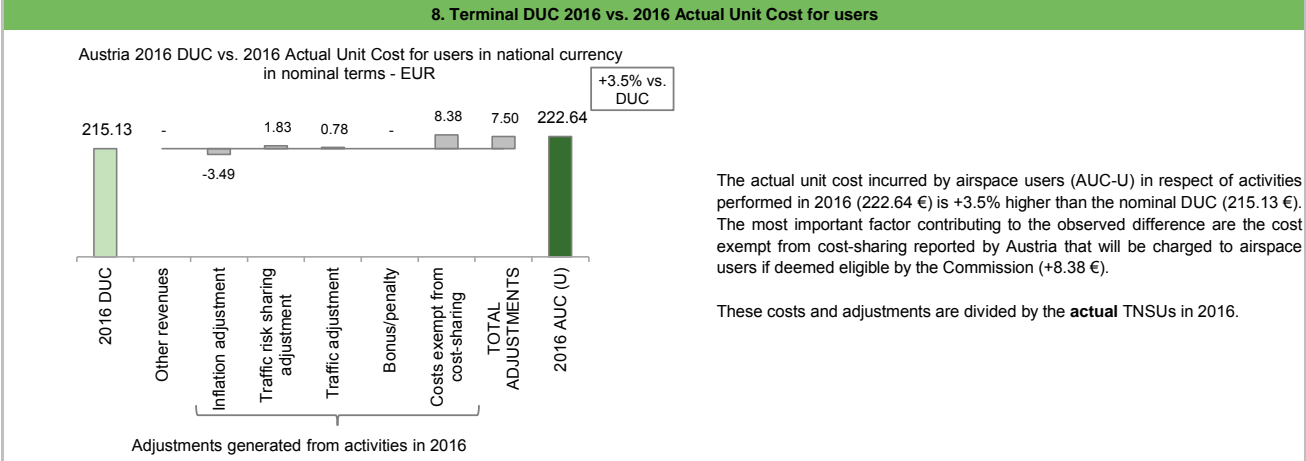
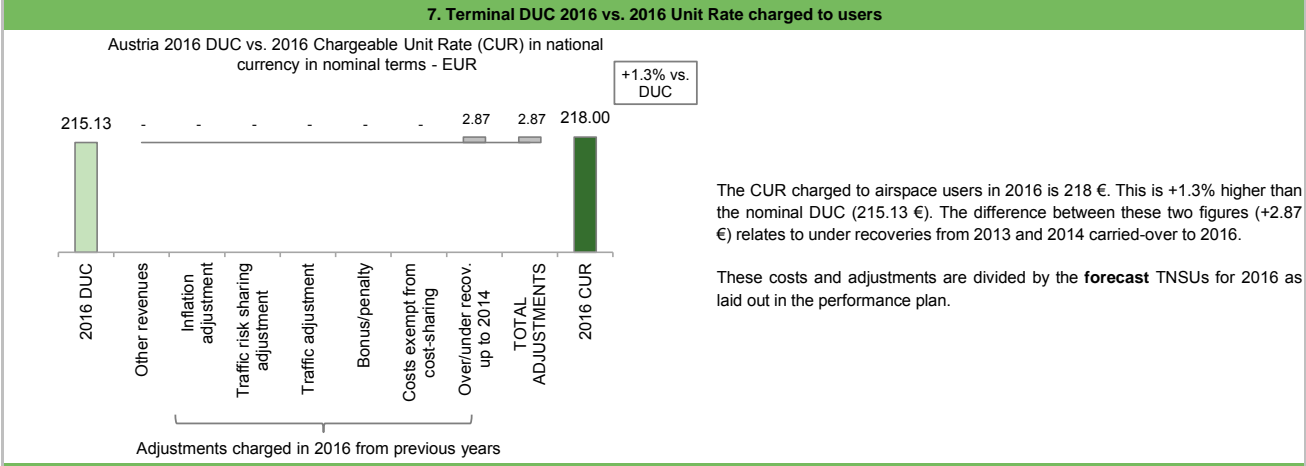
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	-1 017	1 348			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	-1 017	1 348			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		-1 017	1 348			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



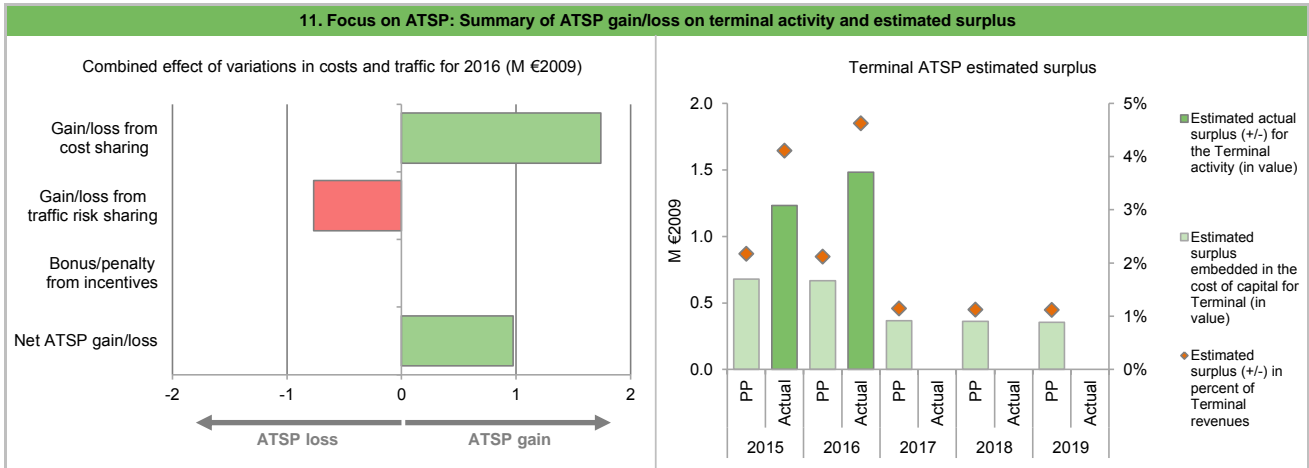
AUSTRIA: Terminal ATSP (Austro Control)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	31 251	31 502			
Actual costs for the ATSP	29 324	31 110			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 928	392			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-1 017	1 348			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	910	1 740			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.7%	-3.3%			
Determined costs for the ATSP (PP) - based on actual inflation	31 530	32 003			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-208	-766			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	702	973			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	33 945	33 378	32 714	32 167	31 629
Estimated proportion of financing through equity (in %)	100.0%	100.0%	15.4%	15.4%	15.4%
Estimated proportion of financing through equity (in value)	33 945	33 378	5 033	4 949	4 866
Estimated proportion of financing through debt (in %)	0.0%	0.0%	84.6%	84.6%	84.6%
Estimated proportion of financing through debt (in value)	0	0	27 681	27 218	26 763
Cost of capital pre-tax (in value)	679	668	1 309	1 287	1 265
Average interest on debt (in %)	0.0%	0.0%	3.4%	3.4%	3.4%
Interest on debt (in value)	0	0	941	925	910
Determined RoE pre-tax rate (in %)	2.0%	2.0%	7.3%	7.3%	7.3%
Estimated surplus embedded in the cost of capital for terminal (in value)	679	668	367	361	355
Overall estimated surplus (+/-) for the terminal activity	679	668	367	361	355
Revenue/costs for the terminal activity	31 251	31 502	32 138	32 118	31 805
Estimated surplus (+/-) in percent of terminal revenues	2.2%	2.1%	1.1%	1.1%	1.1%
Estimated ex-ante RoE pre-tax rate (in %)	2.0%	2.0%	7.3%	7.3%	7.3%
* See note 1 in gate to gate box 3					
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	26 555	25 514			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	26 555	25 514			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	531	510			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	2.0%	2.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	531	510			
Net ATSP gain(+)/loss(-) on terminal activity	702	973			
Overall estimated surplus (+/-) for the terminal activity	1 233	1 484			
Revenue/costs for the terminal activity	30 026	32 083			
Estimated surplus (+/-) in percent of terminal revenues	4.1%	4.6%			
Estimated ex-post RoE pre-tax rate (in %)	4.6%	5.8%			

AUSTRIA: Terminal ATSP (Austro Control)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 Austro Control terminal costs in the TCZ vs. PP

Austro Control actual terminal costs in the TCZ are -1.2% (-0.4 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- higher staff costs (+3.4%, +0.8 M€2009); as indicated in the Additional Information to the June 2017 terminal Reporting Tables mainly due to costs linked to social capital (pensions) and "effects of transition to a new system (NG-AATMS) not as efficient as predicted in plan. (e.g. overtime in peak hours)";
- other operating costs in real terms in line with the planned in the PP;
- lower depreciation costs (-19.8%, -1.0 M€2009) due to the postponement of replacement investments and extension of the live of the existing technical equipment, and
- a lower cost of capital (-23.6%, -0.2 M€2009), due to a lower asset base in 2016 than planned.

From the Additional Information to the June 2017 terminal Reporting Tables, it is our understanding that the staff costs have been impacted by the recognition of actuarial losses for pension liabilities up to 2012 following the cancellation of the so-called "corridor method". This loss will be recovered over 14 years starting in 2016.

Austro Control 2016 net gain/loss on terminal activity in the TCZ

As shown in box 9, the terminal activity in the TCZ generated a net gain of +1.0 M€2009 in 2016. This is a combination of two elements:

- a gain of +1.7 M€2009 as a result of the cost-sharing mechanism; and
- a loss of -0.8 M€2009 as a result of traffic risk-sharing mechanism.

The gain from cost-sharing mentioned above (+1.7 M€2009) includes amounts reported by Austro Control for costs exempt from cost-sharing (+1.3 M€2009). Should these costs not be deemed eligible by the European Commission, Austro control would generate a net loss of -0.4 M€2009 for the terminal activity in 2016.

Austro Control 2016 overall estimated surplus for the terminal activity in the TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in the TCZ mentioned above (+1.0 M€2009) and the surplus embedded in the cost of capital (+0.5 M€2009) amounts to +1.5 M€2009 (4.6% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 5.8%, which is higher than the 2% planned in the PP (see technical note 1 in gate-to-gate box 3).

AUSTRIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																	
Austria: Data from RP2 Performance Plan																	
	2015D	2016D	2017D	2018D	2019D												
Real en-route costs (EUR2009)	164 901 573	167 908 470	173 369 786	174 525 859	169 672 673												
Real terminal costs (EUR2009)	34 958 681	35 227 065	35 873 086	35 838 079	35 505 972												
Real gate-to-gate costs (EUR2009)	199 860 254	203 135 535	209 242 872	210 363 938	205 178 645												
En-route share (%)	82.5%	82.7%	82.9%	83.0%	82.7%												
Austria: Actual data from Reporting Tables																	
	2015A	2016A	2017A	2018A	2019A												
Real en-route costs (EUR2009)	156 763 660	162 189 938															
Real terminal costs (EUR2009)	32 587 346	34 414 686															
Real gate-to-gate costs (EUR2009)	189 351 006	196 604 624															
En-route share (%)	82.8%	82.5%															
Difference between Actuals and Planned (Actuals vs. PP)																	
	2015	2016	2017	2018	2019												
Real gate-to-gate costs (EUR2009)																	
in value	-10 509 249	-6 530 910															
in %	-5.3%	-3.2%															
En-route share																	
in p.p.	0.3%	-0.2%															
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																	
<p>In 2016, actual gate-to-gate ANS costs are -3.2% (-6.5 M€2009) lower than planned due to reductions in both en-route costs (-3.4%, or -5.7 M€2009) and terminal costs (-2.3% or -0.8 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (82.5%) is slightly lower than planned for 2016 (82.7%).</p> <p>For Austro Control, the estimated gate-to-gate economic surplus in 2016 amounts to 17% of gate-to-gate ANS revenues (see boxes 10 for the detailed analysis at charging zone level), corresponding to 15% of gate-to-gate ANS revenues.</p>																	
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%
Year	En-route (%)	Terminal (%)															
2015	83%	17%															
2016	85%	15%															
2017	82%	18%															
3. Technical notes on en-route and terminal information reported by Austria																	
<p>Note 1: For this analysis, and based on the Additional Information provided, it is assumed that the asset base is funded 100% through equity with the return on equity capped at 2%.</p>																	

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Croatia

Version: 1.1

Date: 9 October 2017

CROATIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	49	C	C	B	B	B
Croatia Control	82	D	D	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	N/A	N/A
Runway Incursions (RIs)	N/A	N/A
ATM Specific Occurrences (ATM-S)		6%
Source of RAT data:	TAIA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	6	3
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	13	5
Croatia Control	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	19	5

Observations

Two out of the four reviewed EoSM Components/areas of the State is below the 2019 EoSM target level (Safety Culture excluded). After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 2 are below Level C.

CROATIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Initially 2 Croatian airports, Zagreb and Lucko, were subject to RP2 monitoring. In 2016 Lucko is removed from the list leaving only the main national airport Zagreb. However the Airport Operator Data Flow has only been established in August 2017 and therefore the monitoring of the environment indicators for 2016 cannot be performed.

2. Additional Taxi-Out Time

Due to the lack of data, the additional taxi-out time cannot be monitored at LDZA.

3. Additional ASMA Time

Due to the lack of data, the additional ASMA time cannot be monitored at LDZA.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Zagreb	LDZA	n/a	n/a				n/a	n/a			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.23	0.22	0.21	0.21	0.19	
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.54	0.04				

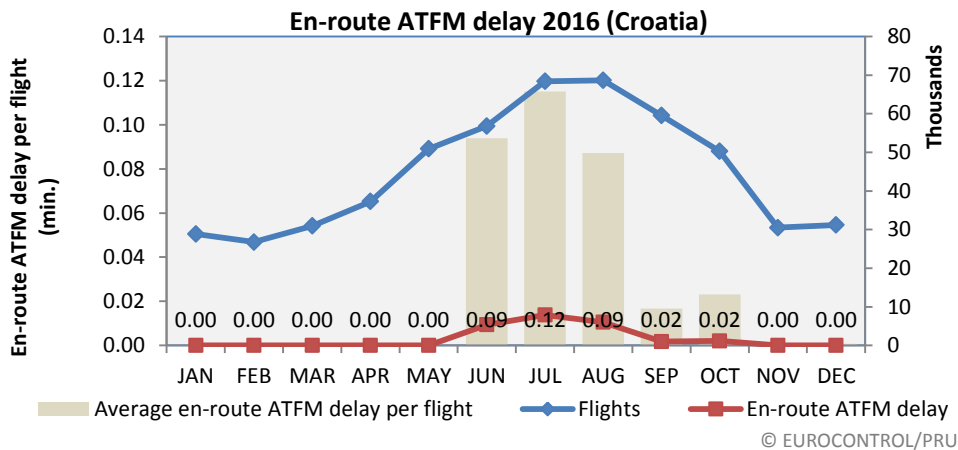
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Croatia was 0.04 minutes per flight instead of the national target of 0.22 minutes per flight, a percentage deviation of 82%, results in a NATIONAL ANSP ELEMENT of 82%. Therefore the national en route capacity incentive for Croatia = 50% *82% * 0.5% (0.2%) of en route revenue of CroatiaControl = 1,209,451.86 HRK

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Croatia)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
1.96	0.67	1.03	0.52	0.26	0.09	0.31	0.54	0.04

There was a marked improvement in en route capacity performance for Croatia in 2016 from 2015 levels, when staffing issues resulted in limitations to the number of sectors being opened at peak periods. The Network Manager expects Croatia to continue to achieve the required performance levels for en route capacity throughout the remainder of RP2.

Planning and Effective Use of CDRs

Croatia did not provide any data. There are no CDRs in Croatian airspace.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 86%.

Procedure 3 is applicable within the State.

Observations on Effective booking procedures

Croatia states that the information on effective booking procedures refers to AMC manageable areas published in the NM CACD.

CROATIA

Monitoring of Airports Contribution to CAPACITY for 2016

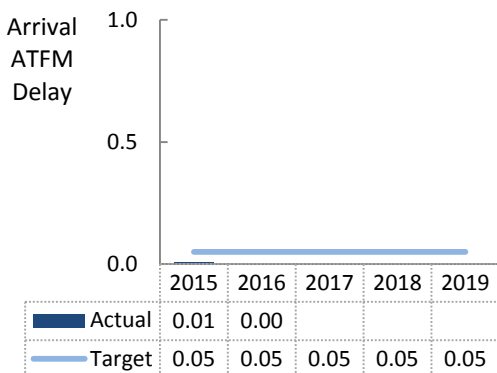
1. Overview

As of 2016, ANS at Zagreb (LDZA) are subject to RP2. The observed performance is commensurate with the level of traffic experienced.

Croatia has established a national target on arrival ATFM delay that was fully met in 2015 and 2016.

The implementation of the Airport Operator Data Flow to ensure the consistency of the reporting is planned for end 2017.

2. Arrival ATFM Delay



Croatia has established a national target on arrival ATFM delay of 0.05 min/arr. for the whole reference period.

The achieved performance remained stable at a very low level (2015: 0.01 min/arr. vs 2016: 0.0 min/arr.) and demonstrate the absence of capacity constraints at LDZA.

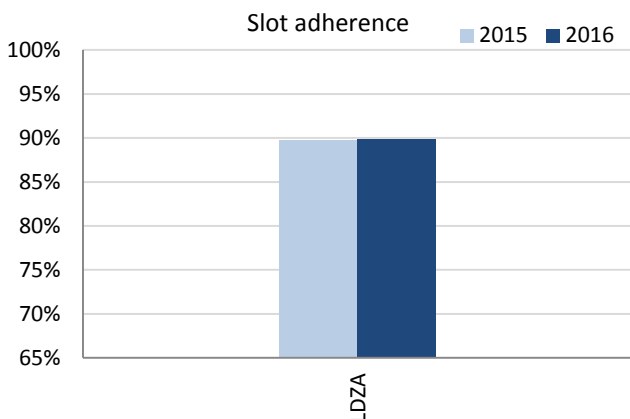
The national target is fully met.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target on arrival ATFM delay for Croatia.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Croatia.

4. ATFM Slot Adherence



The adherence to ATFM slots remained stable in 2016 resulting in a compliance level of 89.9%. In comparison with other European airports experiencing a similar traffic share, LDZA shows a lower performance.

5. Pre-departure Delay

The Airport Operator Data Flow required for the collection of delay data and calculation of the indicator was not established in 2016. Therefore Pre-Departure Delay is not available.

6. Appendix

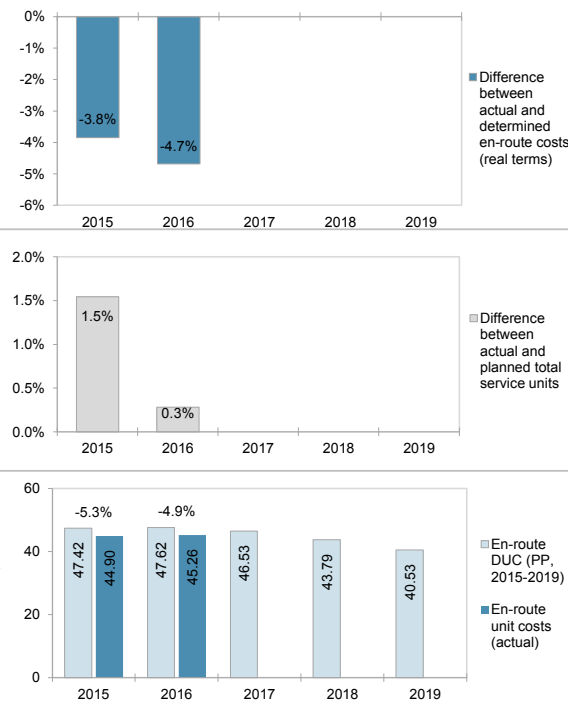
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Zagreb	LDZA	0.01	0.00				89.7%	89.9%				n/a	n/a			

CROATIA: En-route charging zone

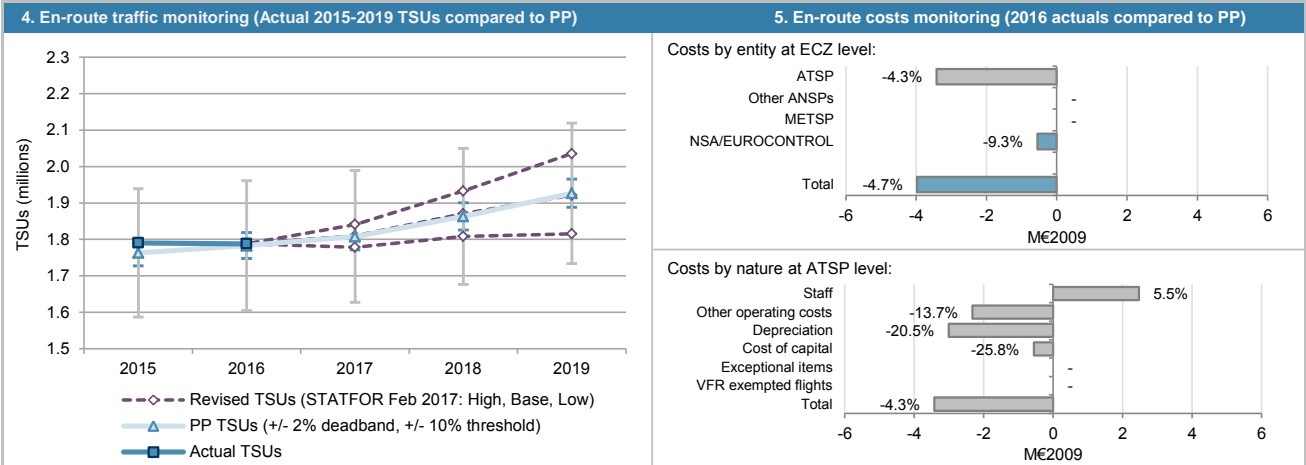
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Croatia ECZ represents 1.4% of the SES en-route ANS determined costs in 2016						
· ATSP: Croatia Control						
· FAB: FAB CE						
· National currency: HRK Exchange rate 2009: 1 EUR = 7.33804 HRK						
2. En-route DUC monitoring at Charging Zone level						
Croatia: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal HRK)	* See note 1	670 066 531	687 516 987	691 440 691	687 394 177	674 346 800
Inflation %		0.2%	1.0%	1.5%	2.5%	2.5%
Inflation index (100 in 2009)		109.2	110.4	112.0	114.8	117.7
Real en-route costs (HRK2009)		613 414 184	622 991 131	617 287 272	598 707 050	573 017 597
Total en-route Service Units		1 763 000	1 783 000	1 808 000	1 863 185	1 926 787
Real en-route unit cost per Service Unit (HRK2009)		347.94	349.41	341.42	321.34	297.40
Real en-route unit cost per Service Unit (EUR2009)		47.42	47.62	46.53	43.79	40.53
Croatia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal HRK)	* See note 1	644 631 574	645 102 631			
Inflation %		-0.3%	-0.6%			
Inflation index (100 in 2009)		109.3	108.6			
Real en-route costs (HRK2009)		589 828 471	593 822 416			
Total en-route Service Units		1 790 210	1 787 992			
Real en-route unit cost per Service Unit (HRK2009)		329.47	332.12			
Real en-route unit cost per Service Unit (EUR2009)		44.90	45.26			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal HRK)	in value	-25 434 957	-42 414 356			
	in %	-3.8%	-6.2%			
Inflation %	in p.p.	-0.5 p.p.	-1.6 p.p.			
Inflation index (100 in 2009)	in p.p.	0.1 p.p.	-1.7 p.p.			
Real en-route costs (HRK2009)	in value	-23 585 713	-29 168 716			
	in %	-3.8%	-4.7%			
Total en-route Service Units	in value	27 210	4 992			
	in %	1.5%	0.3%			
Real en-route unit cost per Service Unit (HRK2009)	in value	-18.46	-17.29			
	in %	-5.3%	-4.9%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-2.52	-2.36			
	in %	-5.3%	-4.9%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, Croatia's actual real en-route unit cost (332.12 HRK2009 or 45.26 €2009) is -4.9% lower than planned in the PP (349.41 HRK2009 or 47.62 €2009). This difference results from lower than planned en-route costs (by -4.7%, or -4.0 M€2009), while actuals TSUs are slightly above the planned figure (by +0.3%).						
En-route service units						
The difference between actual and planned TSUs (+0.3%) is within the ±2% dead band foreseen in the traffic risk sharing mechanism. The resulting additional en-route revenue relating to traffic risk sharing is therefore fully retained by the ATSP (+0.2 M€2009). The planned TSUs for the remaining years of the RP are close to STATFOR February 2017 base case scenario.						
En-route costs						
The actual en-route costs are -4.7% lower than planned in real terms (-6.2% lower in nominal terms as the actual inflation index for 2016 is -1.7 p.p. below the economic assumption in the plan).						
The lower than planned en-route costs in real terms are driven by reductions across all the reporting entities: Croatia Control (CCL) (-4.3% or -3.4 M€2009) and NSA/EUROCONTROL (-9.3% or -0.6 M€2009). CCL being the main contributor, a detailed analysis at ATSP level is provided in box 12.						
The NSA costs are lower than planned, mainly in respect of staff costs and other operating costs as a result of "savings and rationalization plan" and in respect of cost of capital as the two planned projects did not materialise in 2016.						
Costs exempt from cost sharing are reported for a total amount of +0.07 M€2009 for the difference in EUROCONTROL costs. These costs will be eligible for carry-over (charged to airspace users) in the following reference period(s), if deemed allowed by the European Commission.						



CROATIA: En-route charging zone

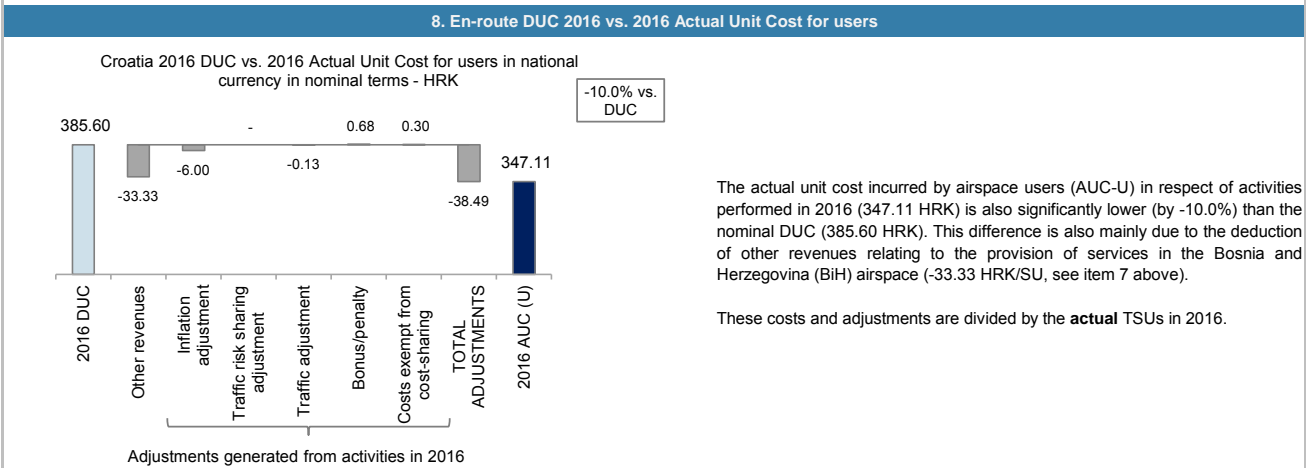
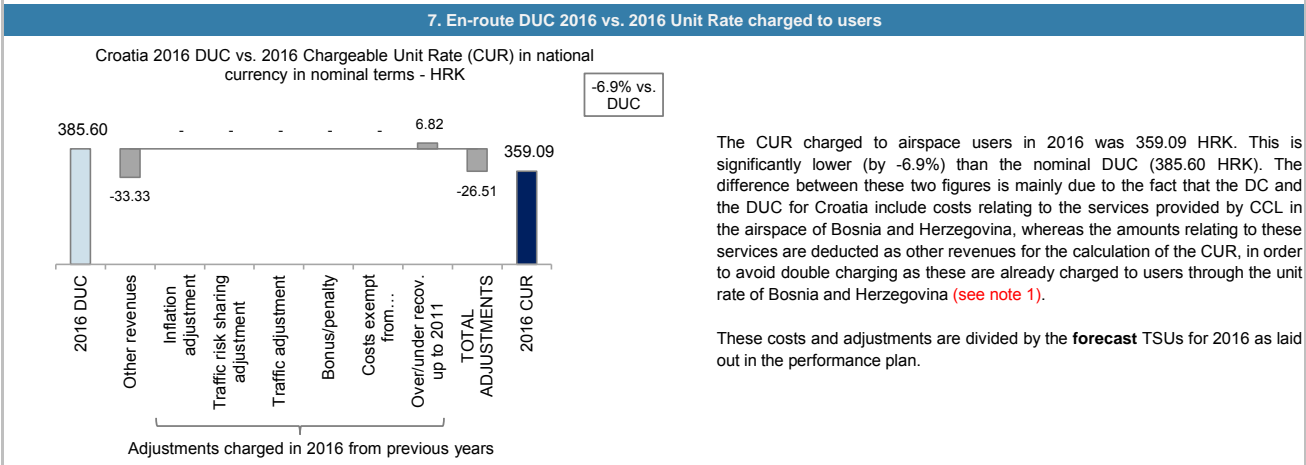
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-20	67			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-20	67			
Total costs exempt from cost sharing		-20	67			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



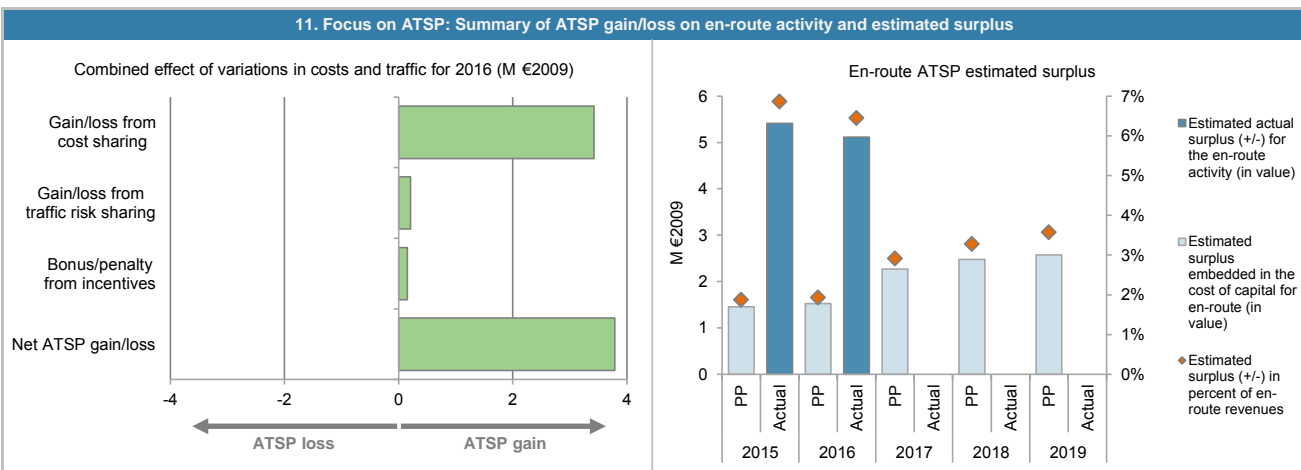
CROATIA: En-route ATSP (Croatia Control)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	77 773	78 951			
Actual costs for the ATSP	74 864	75 529			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	2 909	3 422			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	2 909	3 422			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.5%	0.3%			
Determined costs for the ATSP (PP) - based on actual inflation	73 265	75 582			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 131	212			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	152			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 040	3 785			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	73 705	69 855	64 242	57 466	51 076
Estimated proportion of financing through equity (in %)	57.7%	61.9%	66.8%	71.3%	76.4%
Estimated proportion of financing through equity (in value)	42 525	43 240	42 916	40 974	39 023
Estimated proportion of financing through debt (in %)	42.3%	38.1%	33.2%	28.7%	23.6%
Estimated proportion of financing through debt (in value)	31 180	26 614	21 325	16 492	12 053
Cost of capital pre-tax (in value)	2 185	2 148	2 768	2 860	2 852
Average interest on debt (in %)	2.3%	2.3%	2.3%	2.3%	2.3%
Interest on debt (in value)	727	620	497	384	281
Determined RoE pre-tax rate (in %)	3.4%	3.5%	5.3%	6.0%	6.6%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 458	1 528	2 271	2 476	2 572
Overall estimated surplus (+/-) for the en-route activity	1 458	1 528	2 271	2 476	2 572
Revenue/costs for the en-route activity	77 773	78 951	77 953	75 442	71 962
Estimated surplus (+/-) in percent of en-route revenues	1.9%	1.9%	2.9%	3.3%	3.6%
Estimated ex-ante RoE pre-tax rate (in %)	3.4%	3.5%	5.3%	6.0%	6.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	66 166	58 867			
Estimated proportion of financing through equity (in %)	60.6%	64.0%			
Estimated proportion of financing through equity (in value)	40 097	37 658			
Estimated proportion of financing through debt (in %)	39.4%	36.0%			
Estimated proportion of financing through debt (in value)	26 069	21 209			
Cost of capital pre-tax (in value)	1 733	1 595			
Average interest on debt (in %)	1.4%	1.2%			
Interest on debt (in value)	359	264			
Determined RoE pre-tax rate (in %)	3.4%	3.5%			
Estimated surplus embedded in the cost of capital for en-route (in value)	1 375	1 331			
Net ATSP gain(+)/loss(-) on en-route activity	4 040	3 785			
Overall estimated surplus (+/-) for the en-route activity	5 415	5 116			
Revenue/costs for the en-route activity	78 904	79 314			
Estimated surplus (+/-) in percent of en-route revenues	6.9%	6.5%			
Estimated ex-post RoE pre-tax rate (in %)	13.5%	13.6%			

CROATIA: En-route ATSP (Croatia Control)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 CCL en-route costs vs. PP

In 2016, CCL's real actual en-route costs are -4.3% (-3.4 M€2009) lower than planned in the PP. This results from the combination of:

- higher staff costs (+5.5% or +2.5 M€2009), "result of significantly improved operational capacity";
- lower other operating costs (-13.7% or -2.3 M€2009), "due to savings realised in external services consumed, delayed spending in maintenance and spare parts following the delay in certain CAPEX projects, and decreased level of asset written offs";
- lower depreciation costs (-20.5% or -3.0 M€2009), mainly due to the postponement of some CAPEX projects; and
- lower cost of capital (-25.8% or -0.6 M€2009), as a the asset base is lower than planned due to postponed projects and as a result of lower interest on debt than planned.

CCL net gain/loss on en-route activity in 2016

As shown in box 9, CCL generated a net gain of +3.8 M€2009 on the 2016 en-route activity. This is a combination of three elements:

- a gain of +3.4 M€2009 arising from the cost-sharing mechanism;
- a gain of +0.2 M€2009 arising from the traffic risk sharing mechanism; and
- a gain of +0.2 M€2009, corresponding to a bonus to CCL as part of the capacity target incentive mechanism. This amount corresponds to 0.2% of CCL en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs).

The amounts reported in respect of financial incentives 2016, to be charged or reimbursed to users, will be examined by the European Commission.

CCL overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+3.8 M€2009) and the surplus embedded in the actual cost of capital (+1.3 M€2009) amounts to +5.1 M€2009 (6.5% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 13.6%, which is significantly higher than the 3.5% planned.

CROATIA: Terminal charging zone

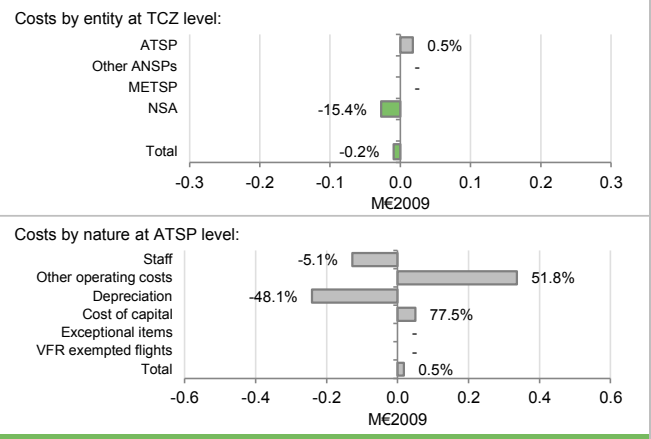
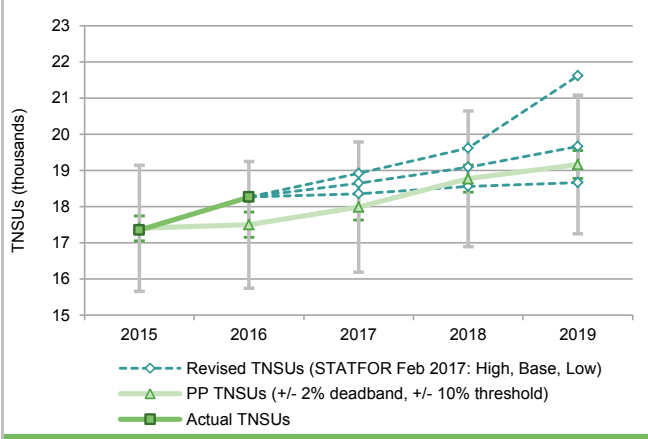
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Croatia TCZ represents 0.3% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes		
· ATSP:	Croatia Control	· Airports with fewer than 70,000 IFRs ATMs:		1		
· National currency:	HRK	· Airports with between 70,000 and 225,000 IFRs ATMs:		0		
· Number of airports in charging zone in 2016:	1,	of which:		· Airports with more than 225,000 IFRs ATMs: 0		
2. Terminal DUC monitoring at Charging Zone level						
Croatia: Data from RP2 Performance Plan		2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal HRK)		30 236 645	31 366 706	32 186 136	33 503 704	33 569 846
Inflation %		0.2%	1.0%	1.5%	2.5%	2.5%
Inflation index (100 in 2009)		109.2	110.4	112.0	114.8	117.7
Real terminal costs (HRK2009)		27 680 217	28 422 832	28 734 340	29 181 079	28 525 549
Total terminal Service Units		17 400	17 500	17 989	18 771	19 162
Real terminal unit cost per Service Unit (HRK2009)		1 590.82	1 624.16	1 597.34	1 554.59	1 488.65
Real terminal unit cost per Service Unit (EUR2009)		216.79	221.33	217.68	211.85	202.87
Croatia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal HRK)		30 261 203	30 803 249			
Inflation %		-0.3%	-0.6%			
Inflation index (100 in 2009)		109.3	108.6			
Real terminal costs (HRK2009)		27 688 558	28 354 651			
Total terminal Service Units		17 355	18 262			
Real terminal unit cost per Service Unit (HRK2009)		1 595.42	1 552.65			
Real terminal unit cost per Service Unit (EUR2009)		217.42	211.59			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
Terminal costs (nominal HRK)	in value	24 557	-563 457			
	in %	0.1%	-1.8%			
Inflation %	in p.p.	-0.5 p.p.	-1.6 p.p.			
	in p.p.	0.1 p.p.	-1.7 p.p.			
Real terminal costs (HRK2009)	in value	8 341	-68 181			
	in %	0.0%	-0.2%			
Total terminal Service Units	in value	-45	762			
	in %	-0.3%	4.4%			
Real terminal unit cost per Service Unit (HRK2009)	in value	4.61	-71.51			
	in %	0.3%	-4.4%			
Real terminal unit cost per Service Unit (EUR2009)	in value	0.63	-9.75			
	in %	0.3%	-4.4%			
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Croatia Terminal Charging zone comprising Zagreb/Pleso airport (including Zagreb/Lucko airfield).</p> <p>Terminal unit cost In 2016, the real actual terminal unit cost (1 552.65 HRK2009 or 211.59 €2009) is lower (-4.4%) than the 2016 terminal DUC set in the PP (1 624.16 HRK2009 or 221.33 €2009), as the real terminal costs are close to the planned figures (-0.2%), while the number of terminal service units is +4.4% higher than planned.</p> <p>Terminal service units Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (+4.4%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional terminal revenue is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +0.09 M€2009.</p> <p>The planned TNSUs for the remaining years of the RP are below the STATFOR February 2017 base case scenario.</p> <p>Terminal costs The real actual terminal costs for 2016 remained at the same levels as planned overall, as CCL actual costs are higher than planned by +0.02 M€2009 and NSA costs lower by -0.03 M€2009.</p> <p>There are no costs exempted from cost-sharing reported for the TCZ.</p>						

CROATIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)

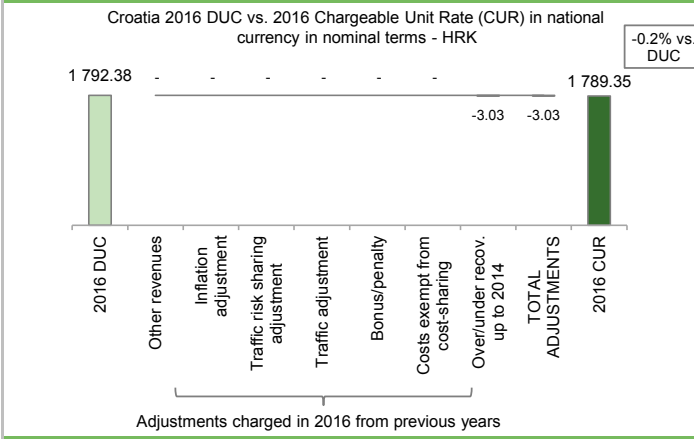


6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

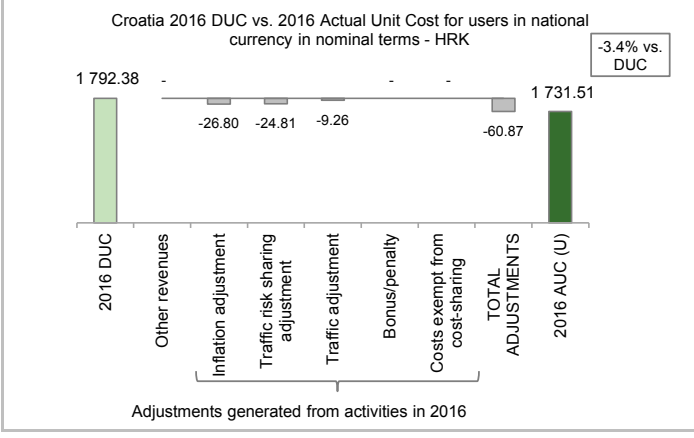
7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users



The CUR charged to airspace users in 2016 was 1789.35 HRK. This is almost (-0.2%) equal to the nominal DUC (1792.38 HRK). The marginal difference between these two figures (-3.03 HRK) is due to over-recoveries incurred up to 2014.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (1 731.51 HRK) is -3.4% lower than the nominal DUC (1 792.38 HRK). The difference between these two figures (-60.87 HRK) is due to the 2016 inflation and traffic adjustments.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

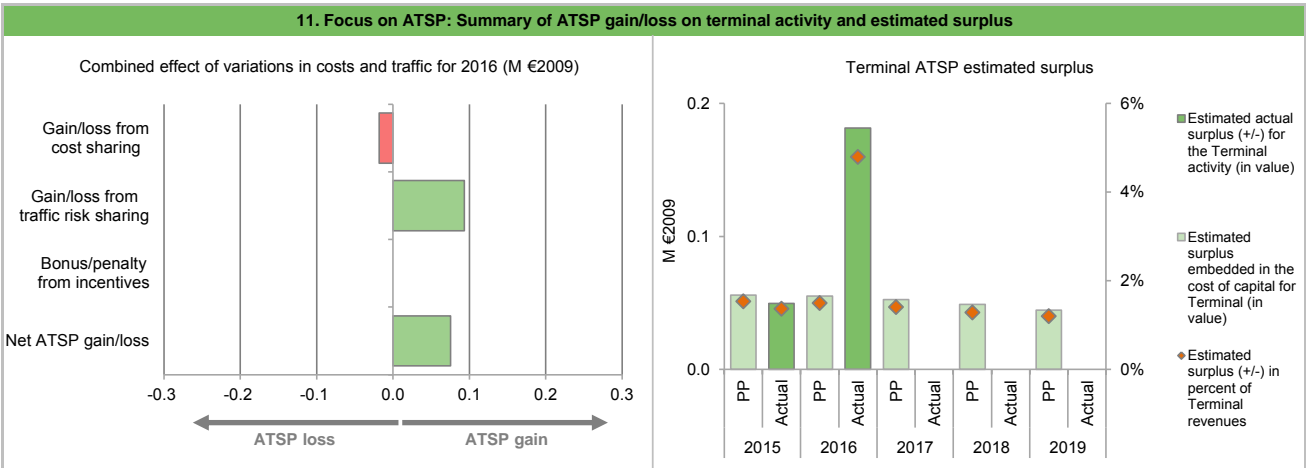
CROATIA: Terminal ATSP (Croatia Control)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	3 646	3 695			
Actual costs for the ATSP	3 671	3 713			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-25	-18			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-25	-18			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.3%	4.4%			
Determined costs for the ATSP (PP) - based on actual inflation	3 348	3 447			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-9	93			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-34	75			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 180	1 118	1 028	920	817
Estimated proportion of financing through equity (in %)	57.7%	61.9%	66.8%	71.3%	76.4%
Estimated proportion of financing through equity (in value)	681	692	687	656	625
Estimated proportion of financing through debt (in %)	42.3%	38.1%	33.2%	28.7%	23.6%
Estimated proportion of financing through debt (in value)	499	426	341	264	193
Cost of capital pre-tax (in value)	67	65	61	55	49
Average interest on debt (in %)	2.3%	2.3%	2.3%	2.3%	2.3%
Interest on debt (in value)	12	10	8	6	4
Determined RoE pre-tax rate (in %)	8.2%	8.0%	7.7%	7.5%	7.2%
Estimated surplus embedded in the cost of capital for terminal (in value)	56	55	53	49	45
Overall estimated surplus (+/-) for the terminal activity	56	55	53	49	45
Revenue/costs for the terminal activity	3 646	3 695	3 742	3 810	3 727
Estimated surplus (+/-) in percent of terminal revenues	1.5%	1.5%	1.4%	1.3%	1.2%
Estimated ex-ante RoE pre-tax rate (in %)	8.2%	8.0%	7.7%	7.5%	7.2%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	1 675	2 082			
Estimated proportion of financing through equity (in %)	60.6%	64.0%			
Estimated proportion of financing through equity (in value)	1 015	1 332			
Estimated proportion of financing through debt (in %)	39.4%	36.0%			
Estimated proportion of financing through debt (in value)	660	750			
Cost of capital pre-tax (in value)	92	116			
Average interest on debt (in %)	1.4%	1.2%			
Interest on debt (in value)	9	9			
Determined RoE pre-tax rate (in %)	8.2%	8.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	83	106			
Net ATSP gain(+)/loss(-) on terminal activity	-34	75			
Overall estimated surplus (+/-) for the terminal activity	50	182			
Revenue/costs for the terminal activity	3 637	3 789			
Estimated surplus (+/-) in percent of terminal revenues	1.4%	4.8%			
Estimated ex-post RoE pre-tax rate (in %)	4.9%	13.6%			

CROATIA: Terminal ATSP (Croatia Control)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 CCL costs vs. PP

CCL's real actual terminal costs are slightly higher (by +0.5% or +0.02 M€2009) than planned in the PP.

CCL 2016 net gain/loss on terminal activity

As shown in box 9, the terminal activity of the TCZ generated a net gain of +0.08 M€2009 in 2016. This is a combination of two elements:

- a loss of -0.02 M€2009 as a result of the cost-sharing mechanism; and,
- a gain of +0.09 M€2009 as a result of traffic risk-sharing mechanism.

CCL 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in Croatia TCZ mentioned above (+0.08M€2009) and the surplus embedded in the cost of capital (+0.1 M€2009) amounts to +0.2 M€2009 (4.8% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 13.6%, which is higher than the 8.0% planned in the PP.

CROATIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Croatia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	83 593 737	84 898 846	84 121 546	81 589 505	78 088 644
Real terminal costs (EUR2009)	3 772 154	3 873 355	3 915 806	3 976 686	3 887 353
Real gate-to-gate costs (EUR2009)	87 365 891	88 772 201	88 037 352	85 566 191	81 975 997
En-route share (%)	95.7%	95.6%	95.6%	95.4%	95.3%
Croatia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	80 379 566	80 923 846			
Real terminal costs (EUR2009)	3 773 291	3 864 063			
Real gate-to-gate costs (EUR2009)	84 152 857	84 787 909			
En-route share (%)	95.5%	95.4%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-3 213 034	-3 984 292			
in %	-3.7%	-4.5%			
En-route share					
in p.p.	-0.2%	-0.2%			
2. Share of en-route and terminal in gate-to-gate actual costs (2016)					
In 2016, actual gate-to-gate ANS costs are -4.5% (-4.0 M€2009) lower than planned, due to lower en-route costs.					
The actual share of en-route in gate-to-gate ANS costs (95.4%) is in line with that planned PP for 2016 (95.6%).					
For CCL, the estimated gate-to-gate economic surplus in 2016 amounts to 5.3 M€2009 (boxes 10 for the detailed analysis at charging zone level), corresponding to 6.4% of gate-to-gate ANS revenues.					
3. Technical notes on en-route and terminal information reported by Croatia					
Note 1: ANS provision in Sarajevo FIR (Bosnia and Herzegovina - BiH)					
Croatia's determined en-route costs for RP2, as well as 2015 and 2016 actual en-route costs include costs for services provided by CCL in Sarajevo FIR (Bosnia and Herzegovina - BiH). In agreement with the European Commission, Croatia committed to deduct the income received for the services provided to the Sarajevo FIR (Bosnia and Herzegovina - BiH) as 'other revenues' in the Croatian cost base to avoid double charging. This ensures that these amounts are only charged once (through the BiH unit rate, outside the SES area).					

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Czech Republic

Version: 1.1

Date: 9 October 2017

CZECH REPUBLIC

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	72	C	C	B	C	C
ANS CR	83	D	E	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	UZPLN	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	5	4
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	13	5
ANS CR	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	21	3

Observations

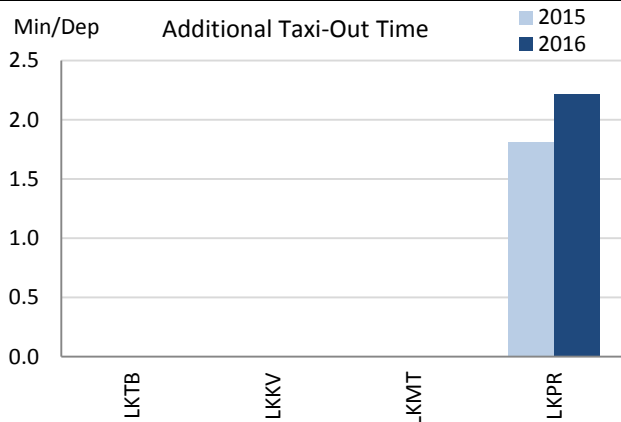
Only one component (Safety Assurance) out of the verified four in the EoS M Component/area of the State does not meet the 2019 EoS M target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 1 area is below Level C.

1. Overview

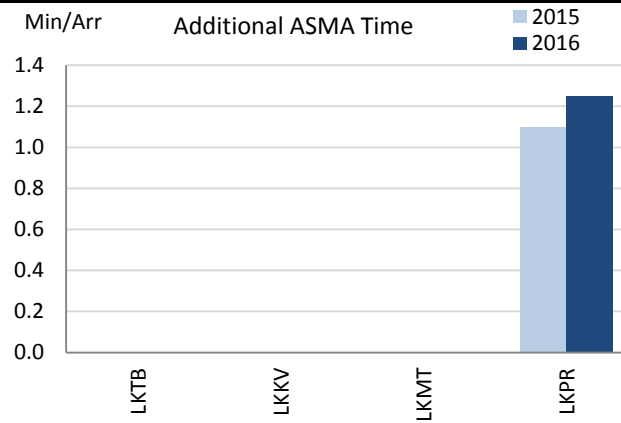
There are four airports in Czech Republic subject to RP2 monitoring. Nevertheless, the airport operator data flow is only established for Prague. The implementation of the APDF at the rest of Czech airports is required to be able to monitor the performance. The indicators show that Prague performs in line with the general European trend, adequately contributing to the global performance of the European network.

2. Additional Taxi-Out Time



There is a 23% increase of the additional taxi-out times at Prague airport. According to Czech NSA, this is due to longer traffic peaks and an effort to maximize runway throughput. Traffic at Prague in 2016 is 7% higher than in 2015. Several maintenance works were carried out on the taxiway system during off peak summer season with no visible impact on the indicator, as the increase in the additional taxi-out time is only observed in the winter months.

3. Additional ASMA Time



According to Czech NSA, the additional time in terminal airspace in Prague is 14% higher than in 2015 due to longer traffic peaks that result in aircraft flying the STAR for a longer time in an effort to maximize runway throughput.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Brno-Tuřany	LKTB	n/a	n/a				n/a	n/a			
Karlovy Vary	LKKV	n/a	n/a				n/a	n/a			
Ostrava	LKMT	n/a	n/a				n/a	n/a			
Prague	LKPR	1.81	2.22				1.10	1.25			

CZECH REPUBLIC

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.09	0.10	0.09	0.10	0.10	
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.01	0.01				

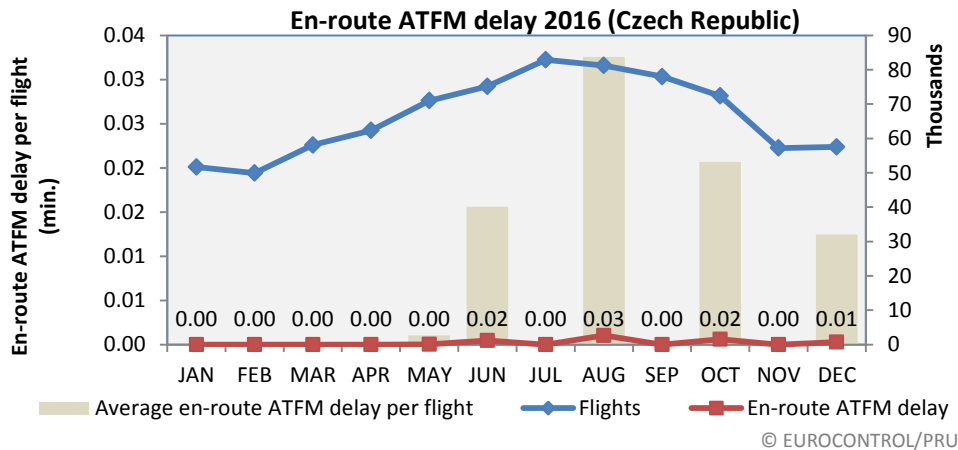
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Czech Republic was 0.01 minutes per flight instead of the national target of 0.10 minutes per flight, a percentage deviation of 90%, results in a NATIONAL ANSP ELEMENT of 90%. Therefore the national en route capacity incentive for Czech Republic = 50% * 90% * 0.5% (0.23%) of en route revenue of ANS CR Control = 6,207,149.25 CZK

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Czech Republic)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.44	0.29	0.15	0.01	0.00	0.04	0.01	0.01	0.01

The continued positive contribution to en route capacity provided by the Czech Republic in 2016 is noted. The Network Manager expects the Czech Republic to have a capacity gap if traffic continues to grow along current routes.

Planning and Effective Use of CDRs

Czech Republic mentions that local data allows for monitoring and reporting number of aircraft filling FPLs via DCTs which are CDR1 like routes. However, Czech Republic did not provide any data.

Observations on Planning and effective Use of CDRs

It is noted that Czech Republic, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 39%.
 No information was provided regarding the allocation of airspace at H-3, it is impossible to determine how much restricted or segregated airspace, that was surplus to requirements, was released for GAT use.
 Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

CZECH REPUBLIC

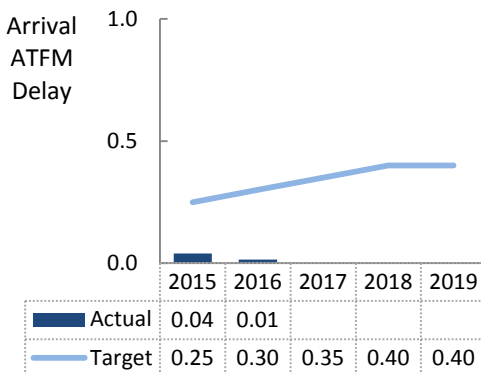
Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

ANS at a total of 4 airports are subject to RP2 in the Czech Republic. A national target on arrival ATFM has been established. Performance in terms of arrival ATFM delay is at a very low negligible level and even improved slightly in 2016 in comparison to 2015. The compliance with ATFM slots ranges within the top class across Europe. Pre-departure delay can only be monitored at the time being for Prague (LKPR). There has been a discernible increase at LKPR in 2016.

The Airport Operator Data Flow is currently only established for LKPR. The Czech Republic may consider the establishment of the data flow for the other airports.

2. Arrival ATFM Delay



The achieved performance in terms of arrival ATFM delay is stable at a very low - negligible - level (2015: 0.04 min/arr. vs 2016: 0.01 min/arr.). The observed performance is commensurate with the level of traffic experienced and shows no capacity constraints on operations.

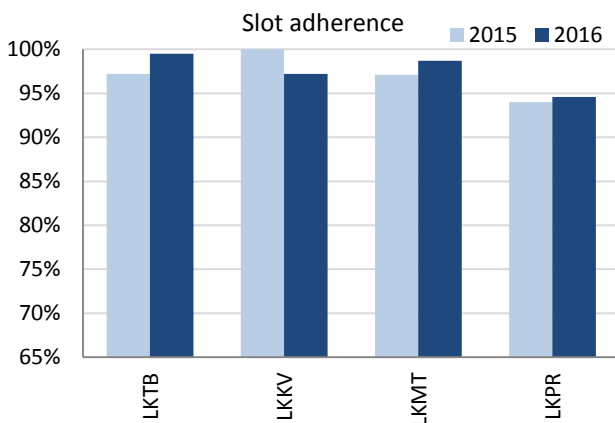
The national performance meets the target fully in 2015 and 2016. The anticipated growth of traffic did not result in a higher share of arrival ATFM delay and the associated increasing target value.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target for arrival ATFM delay for the Czech Republic.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for the Czech Republic.

4. ATFM Slot Adherence



Slot adherence of ANS at Prague (LKPR) just ranges below the 95% threshold which is exceeded by all other airports. This outcome is amongst the best-in-class across Europe.

It is noteworthy that this also applies for the smaller airports in terms of traffic well below 10000 movements a year. This is not common across Europe.

5. Pre-departure Delay

Pre-departure delay increased in 2016 (0.53 min/dep.) in comparison to 2015 (0.36 min/dep.) at Prague (LKPR). This is reported to be linked with the introduction of ACDM at LKPR (i.e. holding at gate rather than runway holding point) and the increase in air traffic.

To ensure the consistency of the monitoring, Czech Republic may consider the establishment of the data flow for the other airports.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Brno-Tuřany	LKTB	0.00	0.00				97.2%	99.5%				n/a	n/a			
Karlovy Vary	LKKV	0.00	0.00				100.0%	97.2%				n/a	n/a			
Ostrava	LKMT	0.00	0.00				97.1%	98.7%				n/a	n/a			
Prague	LKPR	0.04	0.02				94.0%	94.6%				0.36	0.53			

CZECH REPUBLIC: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services					
<ul style="list-style-type: none"> Czech Republic ECZ represents 1.7% of the SES en-route ANS determined costs in 2016 ATSP: ANS CR FAB: FAB CE National currency: CZK Exchange rate 2009: 1 EUR = 26.4147 CZK 					
2. En-route DUC monitoring at Charging Zone level					
Czech Republic: Data from RP2 Performance Plan(EC Decision 2015/348 of 2 March 2015)					
	2015D	2016D	2017D	2018D	2019D
En-route costs (nominal CZK)	3 022 287 900	3 087 882 700	3 126 037 100	3 149 817 800	3 102 014 900
Inflation %	1.9%	2.0%	2.0%	2.0%	2.0%
Inflation index (100 in 2009)	111.5	113.7	116.0	118.3	120.7
Real en-route costs (CZK2009)	2 710 775 667	2 715 303 433	2 694 955 079	2 662 212 166	2 570 401 338
Total en-route Service Units	2 548 000	2 637 000	2 717 000	2 795 000	2 881 000
Real en-route unit cost per Service Unit (CZK2009)	1 063.88	1 029.69	991.89	952.49	892.19
Real en-route unit cost per Service Unit (EUR2009)	40.28	38.98	37.55	36.06	33.78
Czech Republic: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
En-route costs (nominal CZK)	2 845 608 972	3 074 649 841			
Inflation %	0.3%	0.6%			
Inflation index (100 in 2009)	109.5	110.2			
Real en-route costs (CZK2009)	2 598 187 485	2 790 570 169			
Total en-route Service Units	2 531 815	2 737 047			
Real en-route unit cost per Service Unit (CZK2009)	1 026.22	1 019.56			
Real en-route unit cost per Service Unit (EUR2009)	38.85	38.60			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
En-route costs (nominal CZK)	in value	-176 678 928	-13 232 859		
	in %	-5.8%	-0.4%		
Inflation %	in p.p.	-1.6 p.p.	-1.4 p.p.		
	in p.p.	-2.0 p.p.	-3.5 p.p.		
Real en-route costs (CZK2009)	in value	-112 588 182	75 266 735		
	in %	-4.2%	2.8%		
Total en-route Service Units	in value	-16 185	100 047		
	in %	-0.6%	3.8%		
Real en-route unit cost per Service Unit (CZK2009)	in value	-37.67	-10.14		
	in %	-3.5%	-1.0%		
Real en-route unit cost per Service Unit (EUR2009)	in value	-1.43	-0.38		
	in %	-3.5%	-1.0%		
3. Focus on en-route at State/Charging Zone level					
En-route unit cost					
<p>In 2016, the actual real en-route unit cost (1 019.56 CZK2009 or 38.60 €2009) is -1.0% lower than planned in the PP (1 029.69 CZK2009 or 38.98 €2009). This difference results from the combination of higher than planned TSUs (+3.8%) and higher than planned en-route costs (+2.8%, or +2.8 M€2009).</p>					
En-route service units					
<p>The difference between actual and planned TSUs (+3.8%) falls outside the ±2% dead band but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional en-route revenue is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +2.4 M€2009.</p>					
<p>The planned TSUs for the remaining years of the RP are lower than the STATFOR February 2017 low case scenario.</p>					
En-route costs					
<p>In nominal terms, actual en-route costs are fairly in line with the plan (i.e. -0.4%). However, since the actual inflation index is lower to what was planned (-3.5 p.p.), actual en-route costs are +2.8% higher than planned, when expressed in real terms.</p>					
<p>The higher than planned en-route costs, in real terms, are driven by higher actual costs across all the reporting entities: ANS CR (+2.1% or +1.9 M€2009), NSA/EUROCONTROL (+9.2% or +0.9M€2009) and METSP (CHMI) (+2.2% or +0.04 M€2009). A detailed analysis for ANS CR, being the main contributor, is provided in Box 12.</p>					
<p>Costs exempt from cost-sharing are reported for a total amount of -0.4 M€2009 in respect of the difference in Eurocontrol costs, to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission.</p>					

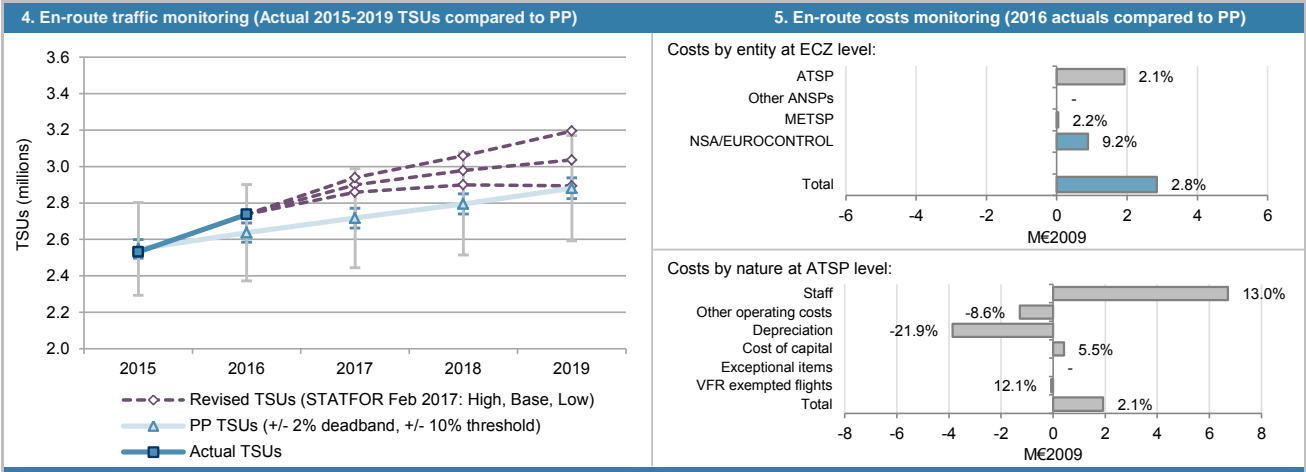
Year	Difference (%)
2015	-4.2%
2016	2.8%
2017	0%
2018	0%
2019	0%

Year	Difference (%)
2015	-0.6%
2016	3.8%
2017	0%
2018	0%
2019	0%

Year	En-route DUC (PP) (€2009)	En-route unit costs (actual) (€2009)
2015	40.28	38.85
2016	38.98	38.60
2017	37.55	-
2018	36.06	-
2019	33.78	-

CZECH REPUBLIC: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

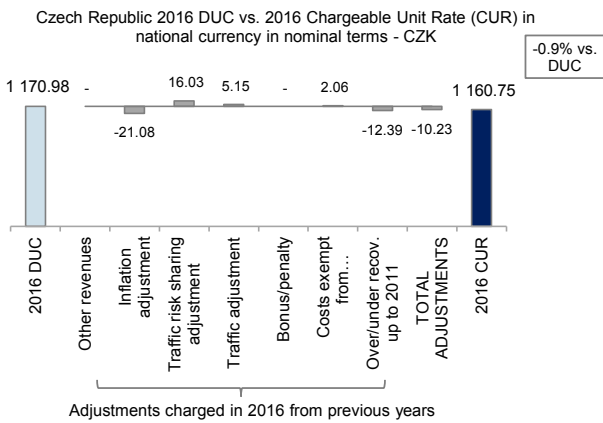


6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-95	-419			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-95	-419			
Total costs exempt from cost sharing		-95	-419			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

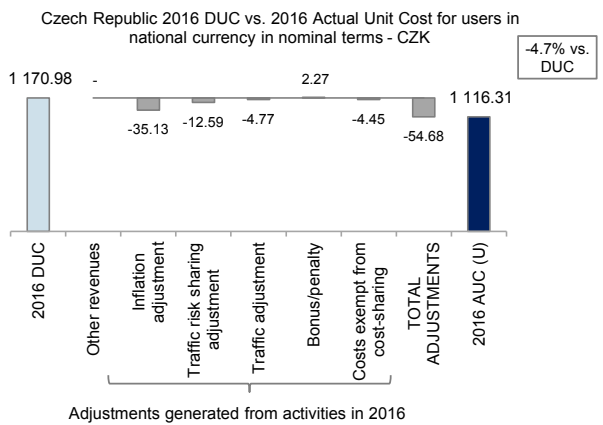
7. En-route DUC 2016 vs. 2016 Unit Rate charged to users



The CUR charged to the airspace users in 2016, 1 160.75 CZK, is slightly lower (i.e. -0.9%) than the nominal DUC (1 170.98 CZK), as the adjustments carried over from 2014 (cost exempt from cost sharing, traffic risk sharing and traffic adjustment) are partly offset by the deduction of the inflation adjustment as well as the difference in revenue relating to the revision of the 2015 unit rate (recorded under "over/under-recoveries incurred up to 2011", as in the Reporting Tables).

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the performance plan.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users



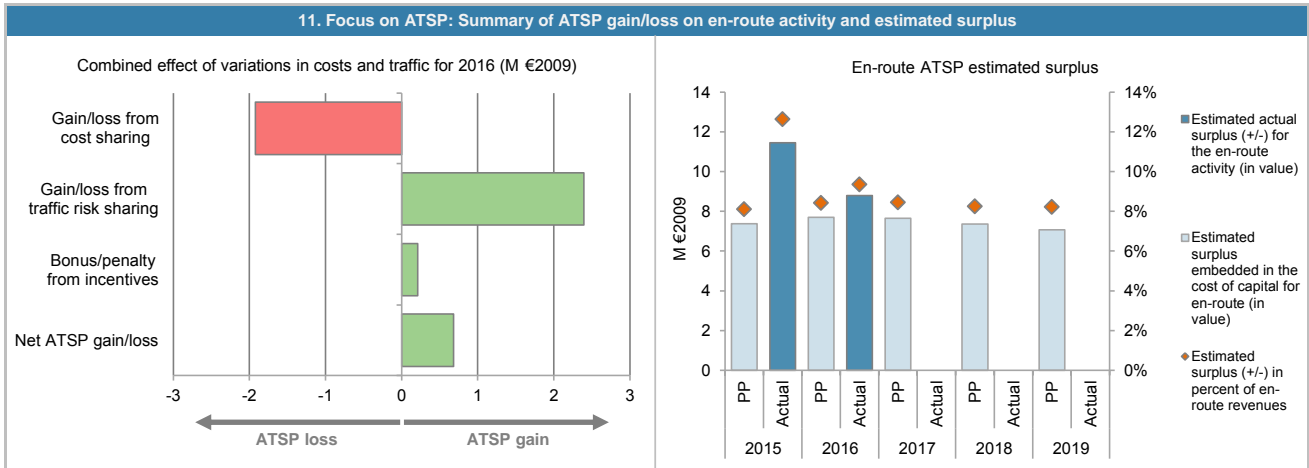
The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (1 116.31 CZK) is -4.7% lower than the nominal DUC (1 170.98 CZK) mainly due to the inflation adjustment (-35.13 CZK) which reflects the impact of the lower actual inflation index than planned for the year 2016 and which will be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TSUs in 2016.

CZECH REPUBLIC: En-route ATSP (ANS CR)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	91 070	91 337			
Actual costs for the ATSP	86 485	93 260			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	4 585	-1 923			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	4 585	-1 923			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.6%	3.8%			
Determined costs for the ATSP (PP) - based on actual inflation	92 707	94 273			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-589	2 393			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	101	213			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 097	683			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	113 529	118 314	117 666	113 293	108 744
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	113 529	118 314	117 666	113 294	108 744
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	7 379	7 690	7 648	7 364	7 068
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.5%	6.5%	6.5%	6.5%	6.5%
Estimated surplus embedded in the cost of capital for en-route (in value)	7 379	7 690	7 648	7 364	7 068
Overall estimated surplus (+/-) for the en-route activity	7 379	7 690	7 648	7 364	7 068
Revenue/costs for the en-route activity	91 070	91 337	90 424	89 284	85 879
Estimated surplus (+/-) in percent of en-route revenues	8.1%	8.4%	8.5%	8.2%	8.2%
Estimated ex-ante RoE pre-tax rate (in %)	6.5%	6.5%	6.5%	6.5%	6.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	113 202	124 797			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	113 202	124 797			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	7 358	8 112			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.5%	6.5%			
Estimated surplus embedded in the cost of capital for en-route (in value)	7 358	8 112			
Net ATSP gain(+)/loss(-) on en-route activity	4 097	683			
Overall estimated surplus (+/-) for the en-route activity	11 456	8 795			
Revenue/costs for the en-route activity	90 582	93 943			
Estimated surplus (+/-) in percent of en-route revenues	12.6%	9.4%			
Estimated ex-post RoE pre-tax rate (in %)	10.1%	7.0%			



12. Focus on en-route ATSP: General conclusions

Actual 2016 ANS CR en-route costs vs. PP

In 2016, ANS CR's actual en-route costs are +2.1% (+1.9 M€2009) higher, in real terms than planned in the PP. This results mainly from the combination of:

- higher staff costs (+13.0% or +6.7 M€2009), mainly "caused by high traffic increase and irregular development of traffic within the year and related overtime hours of ATCOs";
- lower other operating costs (-8.6% or -1.3 M€2009), mainly due to "savings in repairs, energy and software maintenance as well as lower than expected inflation";
- lower depreciation costs (-21.9% or -3.9 M€2009), mainly due to "delays in public procurement processes, in particular by repeating of some tenders."; and,
- higher cost of capital (+5.5% or +0.4 M€2009), mainly due to a higher asset base than planned (due to higher net current assets than planned, while the NBV of fixed assets is lower than was planned).

ANS CR net gain/loss on en-route activity in 2016

As shown in Box 9, ANS CR generated a net gain of +0.7 M€2009 on the en-route activity. This is a combination of three elements:

- a loss of -1.9 M€2009 arising from the cost-sharing mechanism;
- a gain of +2.4 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +0.2 M€2009, corresponding to a bonus to ANS CR as part of the capacity target incentive mechanism. This amount corresponds to 0.2% of ANS CR en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs).

The amounts reported in respect of financial incentives for 2016, to be charged or reimbursed to users, will be examined by the European Commission.

ANS CR overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+0.7 M€2009) and the surplus embedded in the actual cost of capital (+8.1 M€2009) amounts to +8.8 M€2009 (9.4% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 7.0%, which is slightly higher than the one planned i.e. 6.5%.

CZECH REPUBLIC: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Czech_Republic TCZ represents 1.7% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes		
· ATSP:	ANS CR	· Airports with fewer than 70,000 IFRs ATMs:		3		
· National currency:	CZK	· Airports with between 70,000 and 225,000 IFRs ATMs:		1		
· Number of airports in charging zone in 2016:	4,	of which:	· Airports with more than 225,000 IFRs ATMs:	0		
2. Terminal DUC monitoring at Charging Zone level						
Czech_Republic: Data from RP2 Performance Plan		2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal CZK)		547 963 000	574 984 000	605 574 000	639 886 000	682 085 000
Inflation %		1.9%	2.0%	2.0%	2.0%	2.0%
Inflation index (100 in 2009)		111.5	113.7	116.0	118.3	120.7
Real terminal costs (CZK2009)		491 483 544	505 607 298	522 065 054	540 828 836	565 191 417
Total terminal Service Units		81 000	84 700	89 200	94 300	100 307
Real terminal unit cost per Service Unit (CZK2009)		6 067.70	5 969.39	5 852.75	5 735.19	5 634.64
Real terminal unit cost per Service Unit (EUR2009)		229.71	225.99	221.57	217.12	213.31
Czech_Republic: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal CZK)		537 535 000	587 224 000			
Inflation %		0.3%	0.6%			
Inflation index (100 in 2009)		109.5	110.2			
Real terminal costs (CZK2009)		490 797 128	532 967 935			
Total terminal Service Units		76 290	82 481			
Real terminal unit cost per Service Unit (CZK2009)		6 433.29	6 461.73			
Real terminal unit cost per Service Unit (EUR2009)		243.55	244.63			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
Terminal costs (nominal CZK)	in value	-10 428 000	12 240 000			
	in %	-1.9%	2.1%			
Inflation %	in p.p.	-1.6 p.p.	-1.4 p.p.			
Inflation index (100 in 2009)	in p.p.	-2.0 p.p.	-3.5 p.p.			
Real terminal costs (CZK2009)	in value	-686 416	27 360 637			
	in %	-0.1%	5.4%			
Total terminal Service Units	in value	-4 710	-2 219			
	in %	-5.8%	-2.6%			
Real terminal unit cost per Service Unit (CZK2009)	in value	365.59	492.34			
	in %	6.0%	8.2%			
Real terminal unit cost per Service Unit (EUR2009)	in value	13.84	18.64			
	in %	6.0%	8.2%			
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Czech Republic Terminal Charging zone comprising 4 airports, Praha/Ruzyně, KarlovyVary, Ostrava/Mosnov and Brno/Turany.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (6 461.73 CZK2009 or 244.63 €2009) is higher (+8.2%) than planned in the PP (5 969.39 CZK2009 or 225.99 €2009). This is resulting from the combination of lower than planned TNSUs (-2.6%), while the terminal costs were significantly higher than what was planned (+5.4%, or +1.0 M€2009).</p> <p>The NSA Monitoring Report for 2016 includes the following information on the corrective measures: In order to minimize costs, due to the traffic development, the Czech Republic decided not to apply a cost of capital for terminal services; the aim was to maintain nominal unit costs at the same level as in previous years (CZK 6800). This policy has been applied since 2008. Inflation also had a major impact on DUC development because it was far lower than expected and planned. Due to the inflation development and adjustment for 2018 UR, the actual 2018 UR will be lower than in previous years. The NSA CZ does not intend to apply corrective measures, the situation is being monitored.</p> <p>Terminal service units Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (-2.6%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ATSP and the airspace users, with the loss borne by the ATSP amounting to -0.4 M€2009. Based on the STATFOR February 2017 baseline forecast, TNSUs are expected to remain below the planned TNSUs for the remaining years of RP2.</p> <p>Terminal costs In nominal terms, actual terminal costs are +2.1% higher than planned. However, since the actual inflation index is lower to what was planned (-3.5 p.p.), actual terminal costs are +5.4% higher than planned, when expressed in CZK2009. As, shown in Box 5, the higher than planned real terminal costs are essentially driven by higher actual costs for ANS CR (+5.7% or +1.0 M€2009), while NSA and METSP actual costs remained close to what was planned (i.e. -0.4% and -0.9% respectively) A detailed analysis for ANS CR, is provided in Box 12.</p> <p>There are no costs exempted from cost-sharing reported for the TCZ.</p>						

CZECH REPUBLIC: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	5.7%
Other ANSPs	-
METSP	-0.9%
NSA	-0.4%
Total	5.4%

Costs by nature at ATSP level:

Staff	12.0%
Other operating costs	2.6%
Depreciation	-
Cost of capital	-
Exceptional items	-
VFR exempted flights	-
Total	5.7%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Czech_Republic 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - CZK

The CUR charged to airspace users in 2016 is 6 800.00 CZK. This is fairly close (+0.2%) to the nominal DUC (6 788.48 CZK). This is mainly due to the fact that the over/under recoveries up to 2014 are almost offset by the other revenues.

According to the Additional Information provided along with the Reporting Tables, "The revenues from commercial activities are used to cover each year the under recoveries from previous years. The aim of this policy is elimination of under-recovery impact from previous years in order to maintain terminal unit rate at level CZK 6800 in nominal terms". It should also be noted that the aim is to keep the terminal unit rate at 6 800.00 CZK for the whole RP2 period.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Czech_Republic 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - CZK

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (6 390.60 CZK) is lower (-5.9%) than the nominal DUC (6 788.48 €), mainly due to the deduction of the 2016 inflation adjustment (-217.33 CZK) and the other revenues (-217.09 CZK).

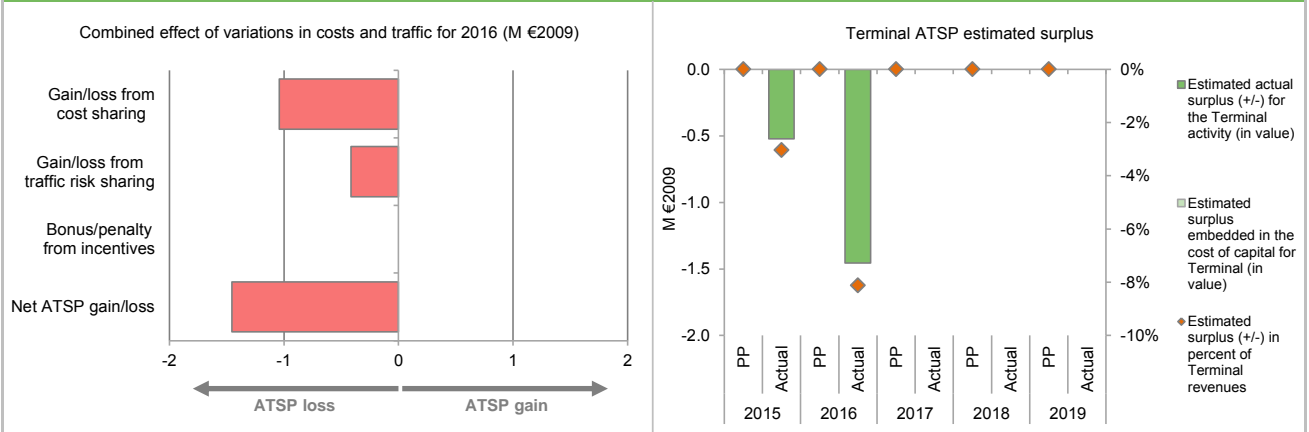
These costs and adjustments are divided by the **actual** TNSUs in 2016.

CZECH REPUBLIC: Terminal ATSP (ANS CR)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	17 817	18 352			
Actual costs for the ATSP	17 770	19 394			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	47	-1 042			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	47	-1 042			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-5.8%	-2.6%			
Determined costs for the ATSP (PP) - based on actual inflation	18 137	18 942			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-570	-414			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-523	-1 456			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	21 235	22 661	22 677	22 017	22 522
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	21 235	22 661	22 677	22 017	22 522
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	0	0	0	0	0
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	-	-	-	-	-
Estimated surplus embedded in the cost of capital for terminal (in value)	0	0	0	0	0
Overall estimated surplus (+/-) for the terminal activity	0	0	0	0	0
Revenue/costs for the terminal activity	17 817	18 352	18 973	19 683	20 610
Estimated surplus (+/-) in percent of terminal revenues	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated ex-ante RoE pre-tax rate (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	21 189	23 474			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	21 189	23 474			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	0	0			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	-	-			
Estimated surplus embedded in the cost of capital for terminal (in value)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity	-523	-1 456			
Overall estimated surplus (+/-) for the terminal activity	-523	-1 456			
Revenue/costs for the terminal activity	17 246	17 938			
Estimated surplus (+/-) in percent of terminal revenues	-3.0%	-8.1%			
Estimated ex-post RoE pre-tax rate (in %)	N/appl	N/appl			

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 ANS CR costs vs. PP

In 2016, ANS CR's actual terminal costs are +5.7% (+1.0 M€2009) higher, in real terms, than planned in the PP. This results from the combination of:

- significantly higher staff costs (+12.0% or +1.5 M€2009), "mainly caused by significant increase of traffic and related overtime ATCOs hours";
- higher other operating costs (+2.6% or +0.1 M€2009); and,
- lower depreciation costs (-15.1% or -0.5 M€2009), mainly due to "delays in public procurement processes, in particular by repeating of some tenders".

It should be noted that, according to the NSA Monitoring Report, "In order to minimize costs, the Czech Republic decided not to apply a cost of capital for terminal services; the aim was to maintain nominal unit costs at the same level as in previous years (CZK 6800). This policy has been applied since 2008". This is in line with the RP2 PP assumptions, as no cost of capital has been included in the determined terminal cost base.

ANS CR 2016 net gain/loss on terminal activity

As shown in Box 9, the terminal activity of the TCZ generated a net loss of -1.5 M€2009 in 2016. This is a combination of two elements:

- a loss of -1.0 M€2009 as a result of the cost-sharing mechanism; and,
- a loss of -0.4 M€2009 as a result of traffic risk-sharing mechanism.

ANS CR 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus is equal to the net loss from the terminal activity in the TCZ mentioned above (-1.5M€2009) as ANS CR does not charge any cost of capital (see explanation above). This implies a negative surplus of -8.1% of the 2016 terminal revenues.

CZECH REPUBLIC: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Czech Republic: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	102 623 754	102 795 165	102 024 823	100 785 251	97 309 503
Real terminal costs (EUR2009)	18 606 440	19 141 133	19 764 186	20 474 540	21 396 852
Real gate-to-gate costs (EUR2009)	121 230 194	121 936 298	121 789 009	121 259 791	118 706 355
En-route share (%)	84.7%	84.3%	83.8%	83.1%	82.0%
Czech Republic: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	98 361 423	105 644 591			
Real terminal costs (EUR2009)	18 580 454	20 176 944			
Real gate-to-gate costs (EUR2009)	116 941 878	125 821 535			
En-route share (%)	84.1%	84.0%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-4 288 317	3 885 237			
in %	-3.5%	3.2%			
En-route share					
in p.p.	-0.5%	-0.3%			
2. Share of en-route and terminal in gate-to-gate actual costs (2016)					
<p>In 2016, actual gate-to-gate ANS costs are +3.2% (+3.9 M€2009) higher than planned as a result of both higher en-route and terminal costs.</p> <p>The actual share of en-route in gate-to-gate ANS costs (84.0%) is in line with that planned PP for 2016 (84.3%).</p> <p>For ANS CR, the estimated gate-to-gate economic surplus in 2016 amounts to 7.3 M€2009 (Boxes 10 for the detailed analysis at charging zone level), corresponding to 6.6% of gate-to-gate ANS revenues.</p>					
3. Technical notes on en-route and terminal information reported by Czech Republic					

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Hungary

Version: 1.1

Date: 9 October 2017

HUNGARY

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	45	B	B	B	B	B
Hungarocontrol	77	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	N/A	100%
Runway Incursions (RIs)	N/A	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	KBSZ	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	2	7
Legal/Judiciary	3	4
Occurrence reporting and Investigation	1	1
TOTAL	6	12
Hungarocontrol	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	22	2

Observations
<p>None of the four reviewed EoS Components/areas of the State meet level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), 8 are below Level C.</p>

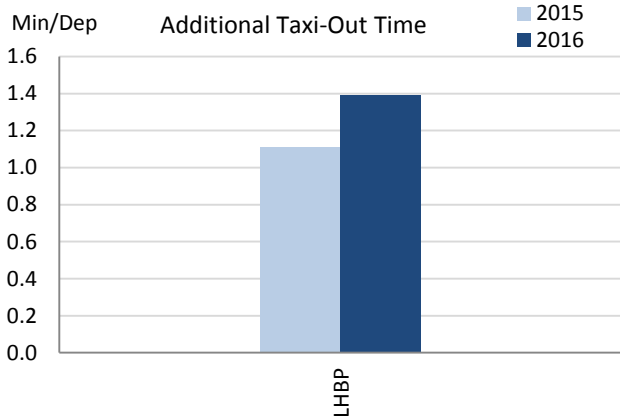
HUNGARY

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

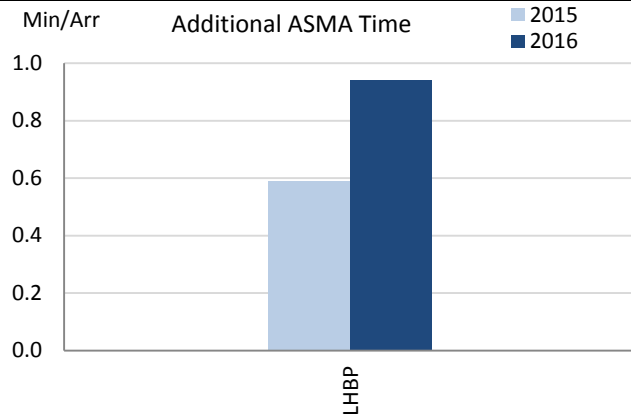
Hungary identified only its main airport Budapest as subject to RP2 monitoring. The Airport Operator Data Flow is correctly established and, with a 4% increase in movements in 2016, the indicators show a performance commensurate with that traffic.

2. Additional Taxi-Out Time



Additional taxi-out times in Budapest have increased by 25% with respect to 2015. However this performance (1.39 min/dep.) is still within best in class for airports around 100000 movements per year.

3. Additional ASMA Time



The additional ASMA times have significantly increased as of April 2016, with a global average in 2016 almost 60% higher than in 2015. Nevertheless, this performance (0.94 min/arr.) is still commensurate with the level of traffic at Budapest airport.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Budapest/ Ferihegy	LHBP	1.11	1.39				0.59	0.94			

HUNGARY

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.06	0.05	0.05	0.04	0.05	
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.03	0.07				

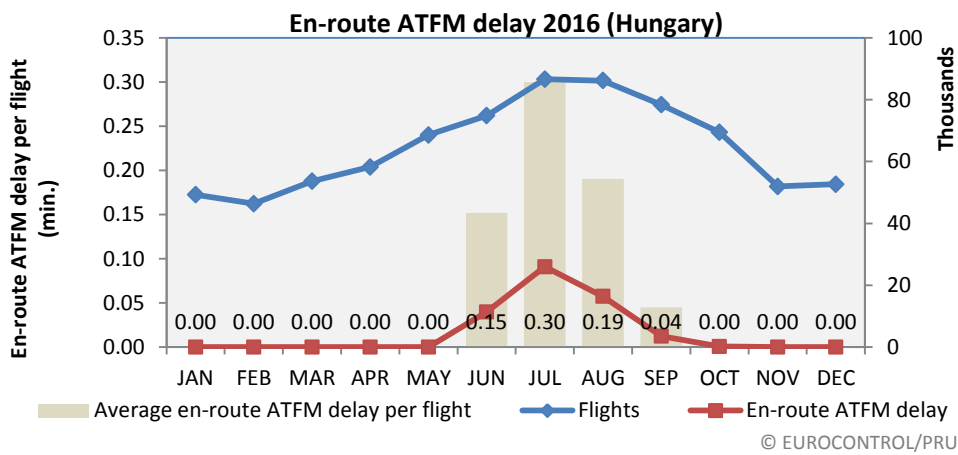
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Hungary was 0.07 minutes per flight instead of the national target of 0.05 minutes per flight. However, the national en route capacity incentive scheme includes a deadband of +/- 0,03 minutes per flight around the national target; the actual performance falls within this deadband, therefore no penalty is due. Additionally, in the overall FAB CE incentive scheme, no penalties are due based on individual national / ANSP performance if the overall FAB targets were achieved.

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Hungary)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03	0.07

It is noted that Hungary did not achieve its national target for en route capacity during 2016. The traffic levels were above the baseline forecast, but below the high forecast, from STATFOR Feb 2016. ATFM delays occurred during the period June to September when Budapest ACC opened a maximum of 7 sectors compared to the 10 sectors at maximum configuration published in the previous capacity plans. The Network Manager does not expect capacity constraints in Hungary during the remainder of RP2.

Planning and Effective Use of CDRs

Hungary did not provide any data: since Free route airspace operations was implemented between 9500'-FL660 in Budapest FIR on February 5th 2015, this KPI is not applicable.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 22%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%

Procedure 3 is applicable within the State. 151 ad hoc hours used, however no notification has been done via UPP process.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

HUNGARY

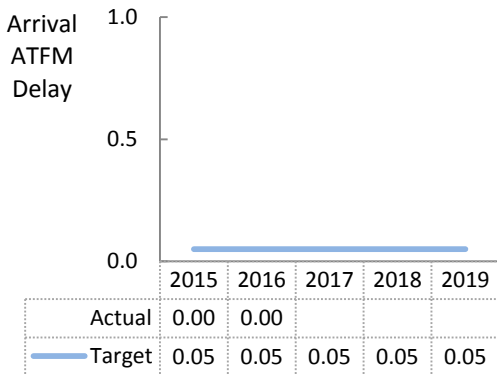
Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Hungary, ANS at Budapest/Ferihegy (LHBP) are subject to RP2. LHBP accrues no arrival ATFM delay in 2015 and 2016. The national target is fully met in both years.

Hungary contributes adequately to the airport related ANS Capacity performance in FAB CE and Europe.

2. Arrival ATFM Delay



For both years, 2015 and 2016, no arrival ATFM delay was observed at Budapest/Ferihegy (LHBP). The achieved performance at LHBP suggests no major capacity constraints.

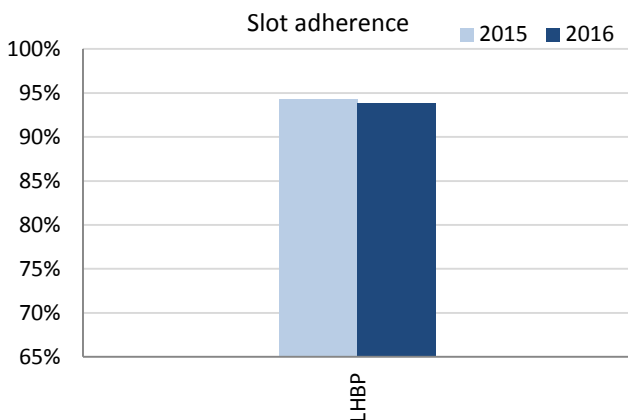
The achieved performance in 2015 and 2016 meets the established national target fully.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target for arrival ATFM delay for Hungary.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Hungary.

4. ATFM Slot Adherence



The adherence to ATFM slots remained broadly unchanged (small degradation in 2016 by 0.5%) and ranges under the 95% threshold.

5. Pre-departure Delay

ANS at Budapest/Ferihegy (LHBP) accrue a reasonably low share of pre-departure delay which is commensurate with the level of air traffic. Performance in 2016 improved marginally by 0.02 min/dep. (2015: 0.13 min/dep. vs 2016: 0.11 min/dep.).

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Budapest/ Ferihegy	LHBP	0.00	0.00				94.3%	93.8%				0.13	0.11			

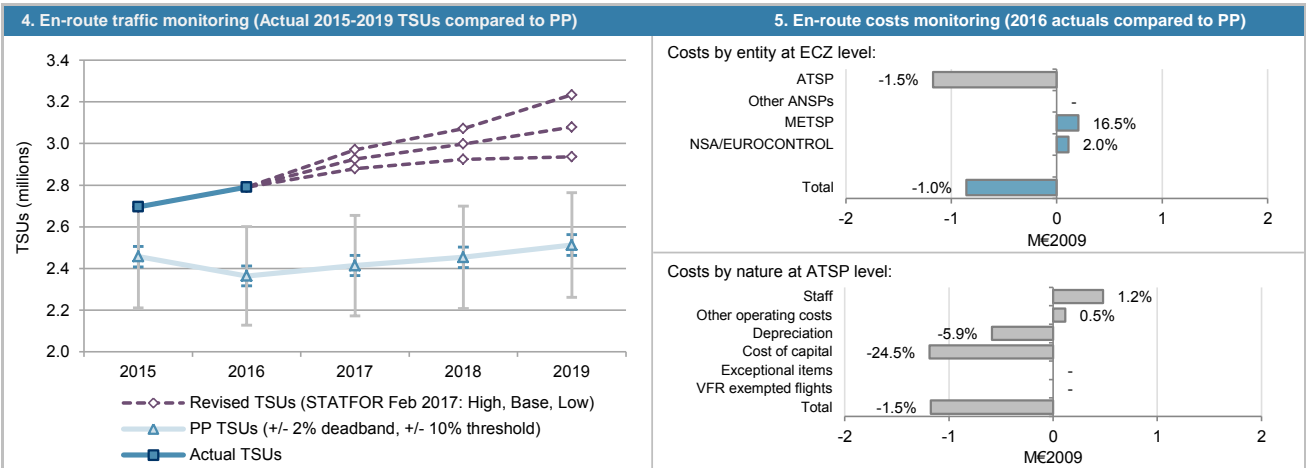
HUNGARY: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services																								
<ul style="list-style-type: none"> · Hungary ECZ represents 1.4% of the SES en-route ANS determined costs in 2016 · ATSP: HungaroControl · FAB: FAB CE · National currency: HUF Exchange rate 2009: 1 EUR = 279.699 HUF 																								
2. En-route DUC monitoring at Charging Zone level																								
Hungary: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D																		
En-route costs (nominal HUF)		28 133 097 383	29 114 984 951	29 632 945 277	30 406 204 408	31 345 254 629																		
Inflation %		1.8%	3.0%	3.0%	3.0%	3.0%																		
Inflation index (100 in 2009)		119.3	122.8	126.5	130.3	134.2																		
Real en-route costs (HUF2009)		23 587 547 923	23 699 795 100	23 418 852 735	23 330 056 076	23 350 067 982																		
Total en-route Service Units		2 457 201	2 364 165	2 413 812	2 453 639	2 512 526																		
Real en-route unit cost per Service Unit (HUF2009)		9 599.36	10 024.60	9 702.02	9 508.35	9 293.46																		
Real en-route unit cost per Service Unit (EUR2009)		34.32	35.84	34.69	33.99	33.23																		
Hungary: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A																		
En-route costs (nominal HUF)		26 757 017 076	27 629 019 479																					
Inflation %		0.1%	0.4%																					
Inflation index (100 in 2009)		117.3	117.8																					
Real en-route costs (HUF2009)		22 810 236 710	23 459 775 733																					
Total en-route Service Units		2 695 944	2 790 211																					
Real en-route unit cost per Service Unit (HUF2009)		8 460.95	8 407.89																					
Real en-route unit cost per Service Unit (EUR2009)		30.25	30.06																					
Difference between Actuals and Planned		2015	2016	2017	2018	2019																		
En-route costs (nominal HUF)	in value	-1 376 080 307	-1 485 965 472																					
	in %	-4.9%	-5.1%																					
Inflation %	in p.p.	-1.7 p.p.	-2.6 p.p.																					
Inflation index (100 in 2009)	in p.p.	-2.0 p.p.	-5.1 p.p.																					
Real en-route costs (HUF2009)	in value	-777 311 213	-240 019 367																					
	in %	-3.3%	-1.0%																					
Total en-route Service Units	in value	238 744	426 046																					
	in %	9.7%	18.0%																					
Real en-route unit cost per Service Unit (HUF2009)	in value	-1 138.41	-1 616.71																					
	in %	-11.9%	-16.1%																					
Real en-route unit cost per Service Unit (EUR2009)	in value	-4.07	-5.78																					
	in %	-11.9%	-16.1%																					
3. Focus on en-route at State/Charging Zone level																								
<p>En-route unit cost The 2016 actual en-route unit cost in real terms (8 407.89 HUF2009 or 30.06 €2009) is -16.1% lower than planned in the RP2 performance plan (10 024.60 HUF2009 or 35.84 €2009). This difference results from the combination of higher actual TSUs than planned (by +18.0%) and lower actual real en-route costs than planned (by -1.0%, or -0.9 ME2009).</p> <p>En-route service units The difference between actual and planned TSUs for 2016 (+18.0%) exceeds the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting additional en-route revenues relating to traffic risk sharing to be retained by HungaroControl amounts to +3.5 ME2009.</p> <p>The difference between actual and planned TSUs is mainly explained by the effects of the Ukrainian crisis which continued throughout 2016 (leading to an increase by +3.5% compared to 2015 after significant increases of +14.6% in 2014 and +12.0% in 2015), while the TSU forecast assumption retained by Hungary in the RP2 PP foresaw these effects of the Ukrainian crisis to last only until mid-2015. Based on the latest STATFOR forecast (February 2017), the threshold will also be exceeded for the remaining three years of RP2.</p> <p>En-route costs In nominal terms, actual en-route costs are -5.1% lower than planned. However, since the actual inflation index is lower to what was planned (by nearly -5.1 p.p.), actual en-route costs are -1.0% below planned, when expressed in real terms.</p> <p>As, shown in Box 5, the lower than planned en-route costs are essentially driven by lower actual costs for HungaroControl (-1.5% or -1.2 ME2009), while NSA/EUROCONTROL and METSP actual costs show an increase compared to the plan (by +0.1 ME2009 and +0.2 ME2009, respectively). HungaroControl being the main contributor, a detailed analysis at ATSP level is provided in box 12.</p> <p>Costs exempted from cost-sharing are reported for a total amount of -1.7 ME2009 to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission (see Box 6).</p>																								
		<table border="1"> <caption>Difference between actual and determined en-route costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-3.3%</td> </tr> <tr> <td>2016</td> <td>-1.0%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	-3.3%	2016	-1.0%												
Year	Difference (%)																							
2015	-3.3%																							
2016	-1.0%																							
		<table border="1"> <caption>Difference between actual and planned total service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>9.7%</td> </tr> <tr> <td>2016</td> <td>18.0%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	9.7%	2016	18.0%												
Year	Difference (%)																							
2015	9.7%																							
2016	18.0%																							
		<table border="1"> <caption>En-route DUC (PP, 2015-2019) and En-route unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>En-route DUC (PP, 2015-2019) (€2009)</th> <th>En-route unit costs (actual) (€2009)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>34.32</td> <td>30.25</td> </tr> <tr> <td>2016</td> <td>35.84</td> <td>30.06</td> </tr> <tr> <td>2017</td> <td>34.69</td> <td>-</td> </tr> <tr> <td>2018</td> <td>33.99</td> <td>-</td> </tr> <tr> <td>2019</td> <td>33.23</td> <td>-</td> </tr> </tbody> </table>					Year	En-route DUC (PP, 2015-2019) (€2009)	En-route unit costs (actual) (€2009)	2015	34.32	30.25	2016	35.84	30.06	2017	34.69	-	2018	33.99	-	2019	33.23	-
Year	En-route DUC (PP, 2015-2019) (€2009)	En-route unit costs (actual) (€2009)																						
2015	34.32	30.25																						
2016	35.84	30.06																						
2017	34.69	-																						
2018	33.99	-																						
2019	33.23	-																						

HUNGARY: En-route charging zone

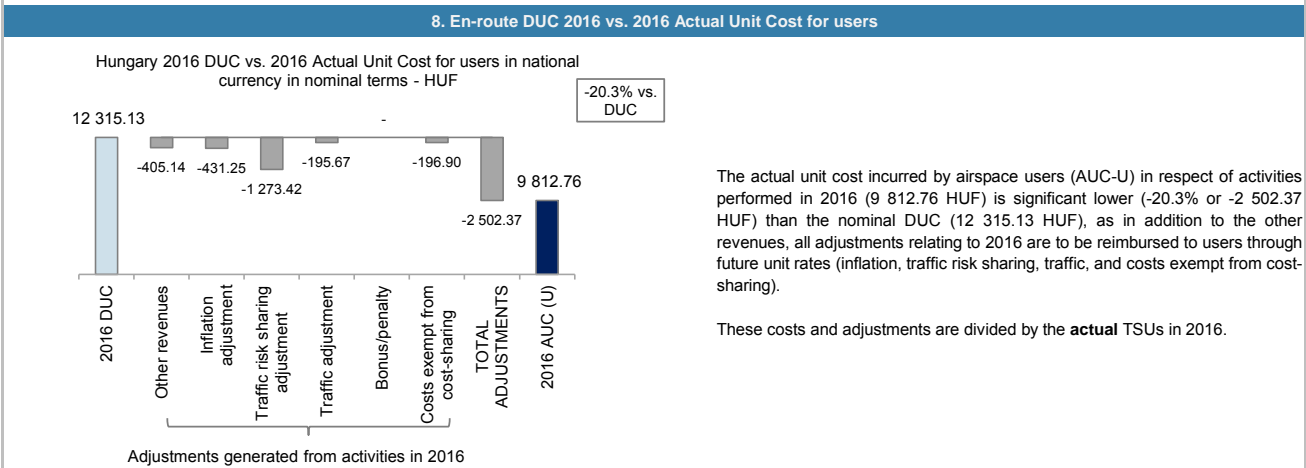
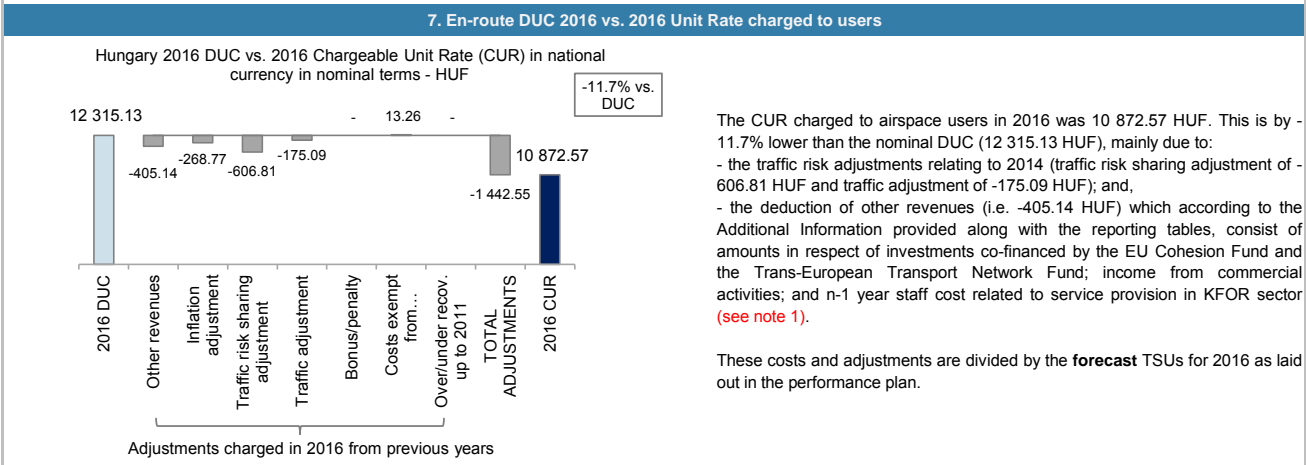
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	-1 527	-1 583			
	New cost item required by law	0	0			
	International agreements	205	-85			
by entity	ATSP	-1 527	-1 583			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	205	-85			
Total costs exempt from cost sharing		-1 322	-1 668			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



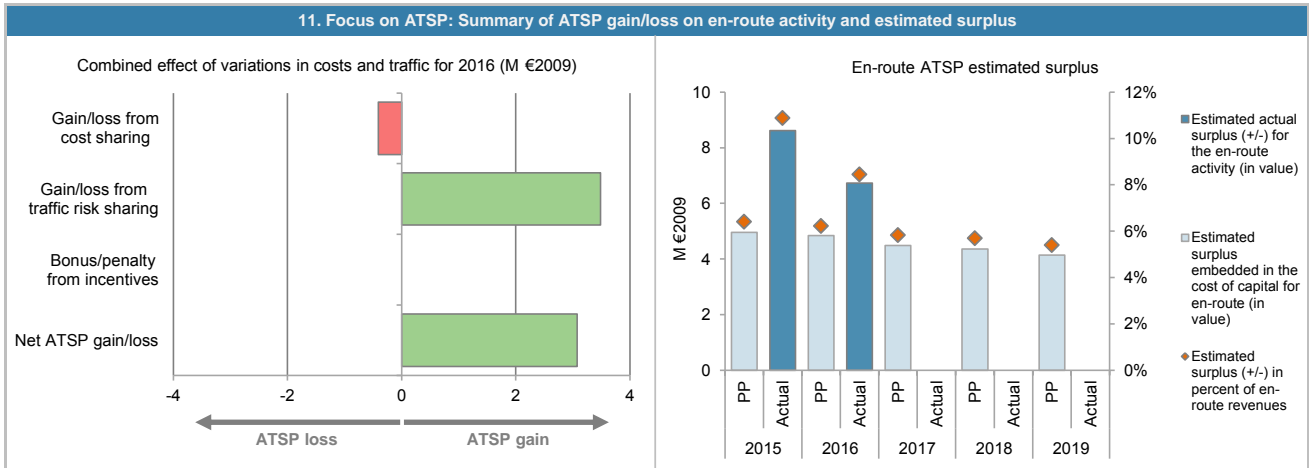
HUNGARY: En-route ATSP (HungaroControl)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	77 413	77 777			
Actual costs for the ATSP	74 349	76 603			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	3 064	1 174			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-1 527	-1 583			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 537	-409			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	9.7%	18.0%			
Determined costs for the ATSP (PP) - based on actual inflation	76 996	79 189			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	3 322	3 484			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 859	3 075			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	62 782	61 295	56 737	55 212	52 382
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	62 782	61 295	56 737	55 212	52 382
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	4 960	4 842	4 482	4 362	4 138
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	7.9%	7.9%	7.9%	7.9%	7.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	4 960	4 842	4 482	4 362	4 138
Overall estimated surplus (+/-) for the en-route activity	4 960	4 842	4 482	4 362	4 138
Revenue/costs for the en-route activity	77 413	77 777	76 773	76 484	76 583
Estimated surplus (+/-) in percent of en-route revenues	6.4%	6.2%	5.8%	5.7%	5.4%
Estimated ex-ante RoE pre-tax rate (in %)	7.9%	7.9%	7.9%	7.9%	7.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	47 555	46 287			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	47 555	46 287			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	3 757	3 657			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	7.9%	7.9%			
Estimated surplus embedded in the cost of capital for en-route (in value)	3 757	3 657			
Net ATSP gain(+)/loss(-) on en-route activity	4 859	3 075			
Overall estimated surplus (+/-) for the en-route activity	8 616	6 732			
Revenue/costs for the en-route activity	79 208	79 678			
Estimated surplus (+/-) in percent of en-route revenues	10.9%	8.4%			
Estimated ex-post RoE pre-tax rate (in %)	18.1%	14.5%			

HUNGARY: En-route ATSP (HungaroControl)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 HungaroControl en-route costs vs. PP

In 2016, HungaroControl actual en-route costs are -1.5% (-1.2 M€2009) lower, in real terms, than planned in the PP. As shown on Box 5 and explained in the Additional Information provided along with the reporting table, this results from the combination of:

- actual staff costs lower than planned by -3.0% in nominal terms "due to the cancellation of early retirement contribution". However, since the actual inflation index is lower to what was planned (-5.1 p.p.), actual staff costs are higher than planned (+1.2% or +0.5 M€2009) when expressed in real terms;
- actual other operating costs lower than planned by -3.6% in nominal terms as "savings were realized in costs of both materials and services. Some facility management fees were re-negotiated, and lower prices were contracted." This decrease is however smaller than the difference between actual and planned inflation, leading to higher costs than planned when expressed in real terms (+0.5% or +0.1 M€2009). ;
- lower depreciation costs (-5.9% or -0.6 M€2009) due to postponed CAPEX in RP1 and in 2016; and,
- lower cost of capital (-24.5% or -1.2 M€2009), mainly due to the higher level of cash and cash equivalents driven by the traffic increase that come in reduction of the actual asset base.

HungaroControl net gain/loss on en-route activity in 2016

As shown in Box 9, HungaroControl generated a net gain of +3.1 M€2009 on the 2016 en-route activity. This is a combination of two elements:

- a loss of -0.4 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +3.5 M€2009 arising from the traffic risk-sharing mechanism.

No bonus/penalty is reported for HungaroControl in respect of the capacity incentive scheme, as HungaroControl did not meet the national target (while FAB CE met its target) and the national performance is within the dead-band. It should be noted that the amounts reported in respect of financial incentives 2016 will be examined by the European Commission.

HungaroControl overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+3.1 M€2009) and the surplus embedded in the actual cost of capital (+3.7 M€2009) amounts to +6.7 M€2009 (8.4% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 14.5%, which is higher than the 7.9% planned in the PP.

HUNGARY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
Hungary TCZ represents 1.5% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		No	
ATSP: HungaroControl		Airports with fewer than 70,000 IFRs ATMs:		0	
National currency: HUF		Airports with between 70,000 and 225,000 IFRs ATMs:		1	
Number of airports in charging zone in 2016: 1, of which:		Airports with more than 225,000 IFRs ATMs:		0	
2. Terminal DUC monitoring at Charging Zone level					
Hungary: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal HUF)	5 614 637 198	5 866 682 812	6 133 511 687	6 382 139 652	6 284 449 073
Inflation %	1.8%	3.0%	3.0%	3.0%	3.0%
Inflation index (100 in 2009)	119.3	122.8	126.5	130.3	134.2
Real terminal costs (HUF2009)	4 707 463 319	4 775 519 575	4 847 301 056	4 896 884 661	4 681 484 161
Total terminal Service Units	51 589	54 323	56 713	58 925	61 635
Real terminal unit cost per Service Unit (HUF2009)	91 250.07	87 910.05	85 470.72	83 103.96	75 954.54
Real terminal unit cost per Service Unit (EUR2009)	326.24	314.30	305.58	297.12	271.56
Hungary: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal HUF)	4 310 296 431	4 895 199 717			
Inflation %	0.1%	0.4%			
Inflation index (100 in 2009)	117.3	117.8			
Real terminal costs (HUF2009)	3 674 508 321	4 156 509 702			
Total terminal Service Units	55 315	59 113			
Real terminal unit cost per Service Unit (HUF2009)	66 429.11	70 315.04			
Real terminal unit cost per Service Unit (EUR2009)	237.50	251.40			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal HUF)	-1 304 340 767	-971 483 095			
	in value				
	in %				
Inflation %	-1.7 p.p.	-2.6 p.p.			
	in p.p.				
Inflation index (100 in 2009)	-2.0 p.p.	-5.1 p.p.			
	in p.p.				
Real terminal costs (HUF2009)	-1 032 954 998	-619 009 873			
	in value				
	in %				
Total terminal Service Units	3 726	4 790			
	in value				
	in %				
Real terminal unit cost per Service Unit (HUF2009)	-24 820.96	-17 595.01			
	in value				
	in %				
Real terminal unit cost per Service Unit (EUR2009)	-88.74	-62.91			
	in value				
	in %				
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Hungary Terminal Charging Zone comprising 1 airport, i.e. Budapest Liszt Ferenc International.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (70 315.04 HUF2009 or 251.40 €2009) is -20.0% lower than planned in the PP (87 910.05 HUF2009 or 314.30 €2009), as the terminal costs decreased (-13.0%, or -2.2 M€2009) despite the increase in TNSUs compared to plan (+8.8%).</p> <p>Terminal service units Traffic risk sharing does not apply in the TCZ. The difference between actual and planned TNSUs is +8.8%.</p> <p>Based on the STATFOR February 2017 forecast (baseline scenario), the TNSUs are expected to remain above the planned value in the remaining years of RP2. The number of TNSUs has increased by +6.9% in 2016 compared to 2015. This increase is due to the expansion of Budapest Airport to new airlines and new routes, as well as increased flight frequencies (for both commercial and cargo operations).</p> <p>Terminal costs In nominal terms, actual terminal costs are -16.6% lower than planned. However, since the actual inflation index is lower to what was planned (-5.1 p.p.), actual terminal costs are -13.0% below planned, when expressed in real terms. The lower than planned terminal costs are mainly driven by lower actual costs than planned for HungaroControl (-13.1% or -2.2 M€2009), while NSA costs are fairly in line with the plan (i.e. +0.3%). HungaroControl being the main contributor, a detailed analysis at ATSP level is provided in box 12.</p> <p>Costs exempted from cost-sharing are reported for a total amount of -0.6 M€2009 to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission.</p>					

HUNGARY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-13.1%
Other ANSPs	-
METSP	-
NSA	0.3%
Total	-13.0%

Costs by nature at ATSP level:

Staff	-8.8%
Other operating costs	16.9%
Depreciation	-39.9%
Cost of capital	-59.4%
Exceptional items	-
VFR exempted flights	-
Total	-13.1%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	-545	-572			
	New cost item required by law	0	0			
	International agreements	2	3			
by entity	ATSP	-543	-570			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		-543	-570			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Hungary 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - HUF

The CUR charged to airspace users in 2016 was 98 848.14 HUF. This is significant lower (-8.5%) than the nominal DUC (107 996.70 HUF), due to the deduction of:

- other revenues, which according to the Additional Information provided along with the reporting tables, consist of amounts in respect of investments co-financed by the EU Cohesion Fund and the Trans-European Transport Network Fund and income from commercial activities; and,
- the carry-over of over-recoveries incurred up to 2014.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Hungary 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - HUF

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (91 218.85 HUF) is -15.5% lower than the nominal DUC (107 996.70 HUF), as in addition to the other revenues, all adjustments relating to 2016 are to be reimbursed to users through future unit rates (inflation, traffic, and costs exempt from cost-sharing).

These costs and adjustments are divided by the **actual** TNSUs in 2016.

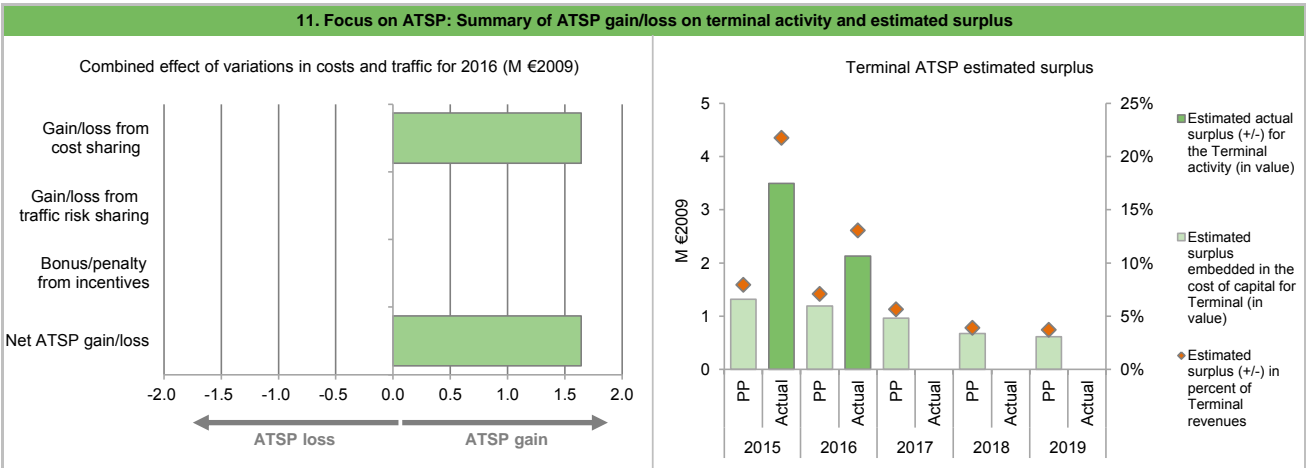
HUNGARY: Terminal ATSP (HungaroControl)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	16 620	16 869			
Actual costs for the ATSP	12 932	14 655			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	3 688	2 214			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-543	-570			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	3 145	1 644			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	3 145	1 644			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	20 345	18 372	14 886	10 432	9 478
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	20 345	18 372	14 886	10 432	9 478
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	1 322	1 194	968	678	616
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.5%	6.5%	6.5%	6.5%	6.5%
Estimated surplus embedded in the cost of capital for terminal (in value)	1 322	1 194	968	678	616
Overall estimated surplus (+/-) for the terminal activity	1 322	1 194	968	678	616
Revenue/costs for the terminal activity	16 620	16 869	17 132	17 315	16 550
Estimated surplus (+/-) in percent of terminal revenues	8.0%	7.1%	5.6%	3.9%	3.7%
Estimated ex-ante RoE pre-tax rate (in %)	6.5%	6.5%	6.5%	6.5%	6.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	5 410	7 459			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	5 410	7 459			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	352	485			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.5%	6.5%			
Estimated surplus embedded in the cost of capital for terminal (in value)	352	485			
Net ATSP gain(+)/loss(-) on terminal activity	3 145	1 644			
Overall estimated surplus (+/-) for the terminal activity	3 497	2 129			
Revenue/costs for the terminal activity	16 077	16 300			
Estimated surplus (+/-) in percent of terminal revenues	21.7%	13.1%			
Estimated ex-post RoE pre-tax rate (in %)	N/appl	28.5%			

HUNGARY: Terminal ATSP (HungaroControl)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 HungaroControl terminal costs vs. PP

HungaroControl actual terminal costs are -13.1% (-2.2 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- lower actual staff costs than planned (by -0.9 M€2009 or -8.8%) mainly due to: the "cost exempted from cost sharing - termination of pension contribution for early retirement"; the lower than planned inflation; and the fact that "due to the increased en route traffic, part of the ATCO capacity was directed to en route";
- higher actual other operating costs than planned (by +0.5 M€2009 or +16.9%), "due to higher support costs and due to an ATCO training which were not planned in the performance plan for 2016";
- lower depreciation costs than foreseen in the plan (by -1.2 M€2009 or -39.9%) "due to postponed remote tower project. Also the technological concept of the remote tower has changed compared to the Performance Plan, this modification caused a difference in side-investments. (e.g. renewal of tower systems)"; and,
- lower cost of capital (-0.7 M€2009, -59.4%), as "Increased traffic resulted in higher level of cash and cash equivalents, consequently a lower level of asset base for cost of capital. At the same time, investments were performed at a low level."

HungaroControl 2016 net gain/loss on terminal activity

As shown in box 9, the terminal activity in Hungary TCZ generated a net gain of +1.6 M€2009 in 2016, as result of the cost-sharing mechanism. Traffic risk sharing does not apply and there are no financial incentives for the Terminal Charging Zone.

HungaroControl 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in Hungary TCZ mentioned above (+1.6 M€2009) and the surplus embedded in the cost of capital (+0.5 M€2009) amounts to +2.1 M€2009 (13.1% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 28.5% which is significantly higher than the planned 6.5% in the PP, mainly due to the significant decrease (i.e. -59.4%) of the asset base as a consequence of the postponement of the Remote Tower project and the higher level of cash and cash equivalents driven by the traffic increase that come in reduction of the actual asset base.

HUNGARY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																	
Hungary: Data from RP2 Performance Plan																	
	2015D	2016D	2017D	2018D	2019D												
Real en-route costs (EUR2009)	84 331 899	84 733 214	83 728 768	83 411 296	83 482 844												
Real terminal costs (EUR2009)	16 830 462	17 073 781	17 330 420	17 507 695	16 737 579												
Real gate-to-gate costs (EUR2009)	101 162 361	101 806 995	101 059 188	100 918 991	100 220 423												
En-route share (%)	83.4%	83.2%	82.9%	82.7%	83.3%												
Hungary: Actual data from Reporting Tables																	
	2015A	2016A	2017A	2018A	2019A												
Real en-route costs (EUR2009)	81 552 800	83 875 079															
Real terminal costs (EUR2009)	13 137 367	14 860 653															
Real gate-to-gate costs (EUR2009)	94 690 167	98 735 732															
En-route share (%)	86.1%	84.9%															
Difference between Actuals and Planned (Actuals vs. PP)																	
	2015	2016	2017	2018	2019												
Real gate-to-gate costs (EUR2009)																	
in value	-6 472 194	-3 071 263															
in %	-6.4%	-3.0%															
En-route share																	
in p.p.	2.8%	1.7%															
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																	
In 2016, actual gate-to-gate ANS costs are -3.0% (-3.1 M€2009) lower than planned due to lower en-route costs (by -1.0% or -0.9 M€2009) and terminal costs (-13.0% or -2.2 M€2009).	<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> </tbody> </table>					Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%
Year	En-route (%)	Terminal (%)															
2015	83%	17%															
2016	85%	15%															
2017	82%	18%															
The actual share of en-route in gate-to-gate ANS costs (84.9%) is slightly higher than the planned in the PP for 2016 (83.2%), due to the shift of some ATCO capacities from the terminal to the en-route activity to cope with the en-route traffic increase.																	
For HungaroControl, the estimated gate-to-gate economic surplus in 2016 amounts to 1.1 M€2009 (see boxes 10 for the detailed analysis at charging zone level), corresponding to 1.1% of gate-to-gate ANS revenues.																	
3. Technical notes on en-route and terminal information reported by Hungary																	
Note 1: ATS provision in Kosovo (KFOR sector)																	
HungaroControl has been designated for the provision of air traffic services in the upper airspace over Kosovo (KFOR sector) for 5 years, starting from 3 April 2014. The actual costs for 2016 for Hungary en-route charging zone include cost for these services (e.g. ATCO staff cost), which are recovered through the charges of Serbia-Montenegro-KFOR en-route charging zone (outside the SES area). In agreement with the European Commission, Hungary committed to deduct the income received for the services provided to the KFOR sector as 'other revenues' in the Hungarian cost base to avoid double charging.																	

PRB Annual monitoring report 2016

Slovakia

Version: 1.1

Date: 9 October 2017

SLOVAKIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	60	C	C	B	C	B
LPS SR	86	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	CAA/LPS	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	15	3
LPS SR	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	8	0
TOTAL	23	1

Observations
<p>Only one question in the EoS M Component/area of the State in safety promotion does not meet the 2019 EoS M target level. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 1 is below Level C.</p>

SLOVAKIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

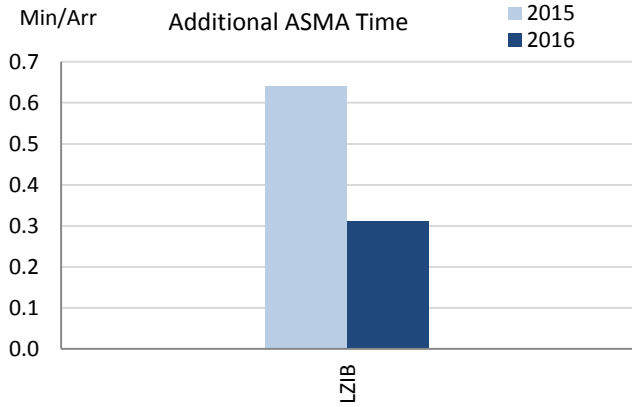
1. Overview

Slovakia has only identified its main airport Bratislava as subject to RP2. The provision of data does not cover the required information to calculate taxi times so that indicator cannot be monitored.
 Member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues.

2. Additional Taxi-Out Time

Due to the lack of data, the additional taxi-out time indicator at Bratislava cannot be monitored at the time being.

3. Additional ASMA Time



Despite a 6% increase in traffic in 2016, the additional ASMA times at Bratislava have been reduced to less than half of the average of 2015. This performance (0.31 min/arr.) is commensurate with the level of traffic at LZIB (around 20000 movements per year)

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bratislava	LZIB	n/a	n/a				0.64	0.31			

SLOVAKIA

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.10	0.10	0.10	0.11	0.10	
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.07	0.03				

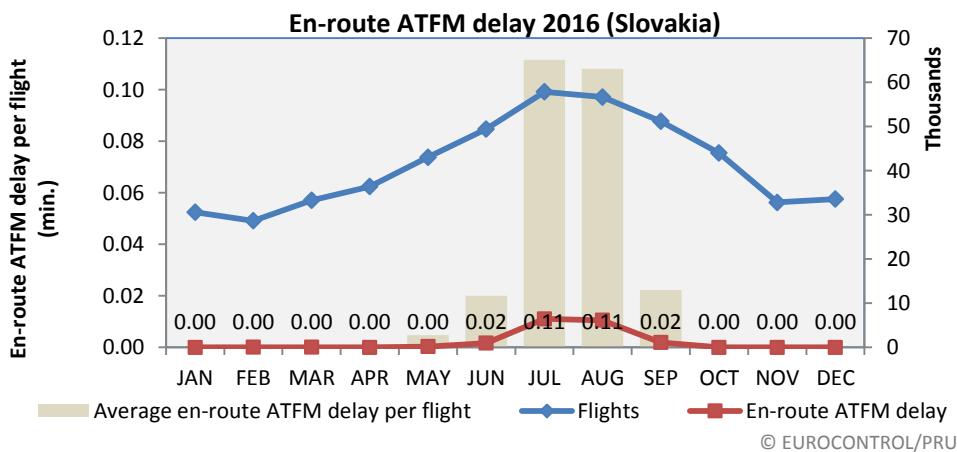
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Slovakia was 0,03 minutes per flight instead of the national target of 0.10 minutes per flight, a percentage deviation of 70%, resulting in a NATIONAL ANSP ELEMENT of 70%. Therefore the national en route capacity incentive for Slovakia = 50% * 70% * 0.5% (0.23%) of en route revenue of LPS = 90,927.19 EUR

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Slovakia)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.16	0.06	0.10	0.00	0.00	0.00	0.14	0.07	0.03

The achievement of the national target and the positive contribution to both the FAB CE target and the Union-wide target for en route capacity, for Slovakia in 2016 is noted. It is also noted that the Network Manager does not expect capacity problems in Slovakia for the remainder of RP2.

Planning and Effective Use of CDRs

Slovakia did not provide any data.

Observations on Planning and effective Use of CDRs

It is noted that Slovakia, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 31%.

No information was provided regarding the allocation of airspace at H-3, it is impossible to determine how much restricted or segregated airspace, that was surplus to requirements, was released for GAT use.

Procedure 3 is applicable within the State. Despite airspace reservations, via the UPP process, the airspace was never actually used for the purpose for which it was reserved.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

SLOVAKIA

Monitoring of Airports Contribution to CAPACITY for 2016

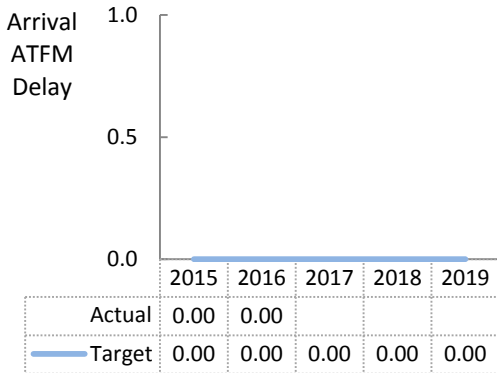
1. Overview

In Slovakia, ANS at Bratislava (LZIB) are subject to RP2. Slovakia has established a national target of 0 min/arr. which was fully met in 2015 and 2016.

Slovakia contributes adequately to the airport related ANS Capacity performance in FAB CE and Europe.

The Airport Operator Data Flow is currently not established for LZIB. Coordination is on-going with a view to establish the data flow by end of 2017.

2. Arrival ATFM Delay



In both years, 2015 and 2016, ANS at Bratislava (LZIB) did not accrue any arrival ATFM delay. This performance is commensurate with the level of air traffic.

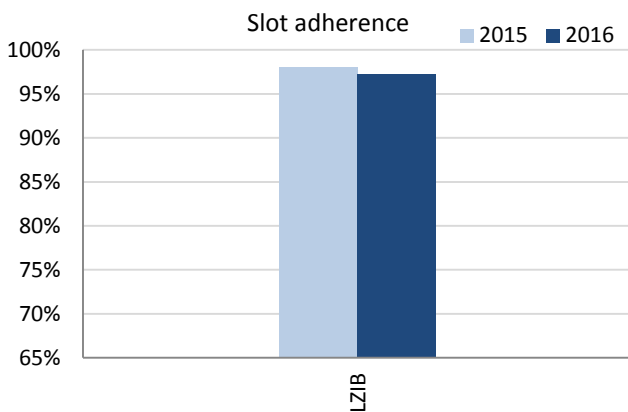
Due to the absence of any capacity constraints, the national target is established at 0 min/arr. for the whole reference period.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target for arrival ATFM delay for Slovakia.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Slovakia.

4. ATFM Slot Adherence



ATFM slot adherence dropped slightly by 0.8% in 2016 to 97.2%. Overall, performance at Bratislava (LZIB) ranges well above the 95% threshold.

5. Pre-departure Delay

The implementation of the Airport Operator Data Flow is on-going.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bratislava	LZIB	0.00	0.00				98.0%	97.2%				n/a	n/a			

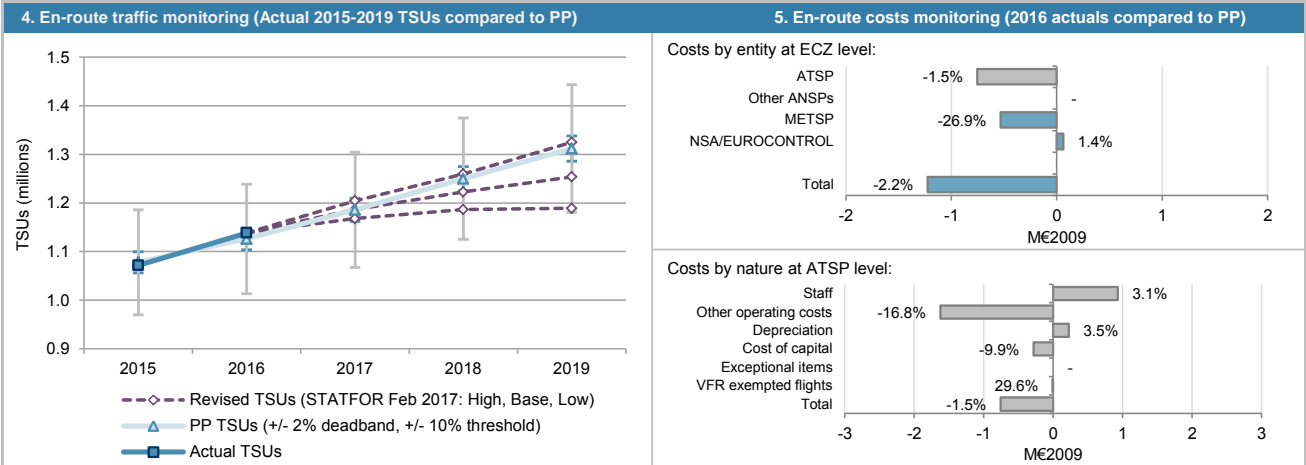
SLOVAKIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Slovakia ECZ represents 0.9% of the SES en-route ANS determined costs in 2016 ATSP: LPS FAB: FAB CE National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Slovakia: Data from RP2 Performance Plan (EC Decision 2016/599 of 15 April 2016)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		59 272 906	61 912 217	62 981 088	66 300 093	67 598 994
Inflation %		0.0%	1.4%	1.7%	1.8%	2.0%
Inflation index (100 in 2009)		110.3	111.8	113.7	115.7	118.1
Real en-route costs (EUR2009)		53 754 368	55 355 807	55 381 628	57 279 434	57 253 112
Total en-route Service Units		1 078 000	1 126 000	1 186 000	1 250 000	1 312 000
Real en-route unit cost per Service Unit (EUR2009)		49.86	49.16	46.70	45.82	43.64
Slovakia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		57 543 515	59 191 004			
Inflation %		-0.3%	-0.5%			
Inflation index (100 in 2009)		109.9	109.3			
Real en-route costs (EUR2009)		52 361 339	54 131 116			
Total en-route Service Units		1 071 382	1 138 250			
Real en-route unit cost per Service Unit (EUR2009)		48.87	47.56			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-1 729 391	-2 721 213			
	in %	-2.9%	-4.4%			
Inflation %	in p.p.	-0.3 p.p.	-1.9 p.p.			
	in p.p.	-0.4 p.p.	-2.5 p.p.			
Real en-route costs (EUR2009)	in value	-1 393 029	-1 224 691			
	in %	-2.6%	-2.2%			
Total en-route Service Units	in value	-6 618	12 250			
	in %	-0.6%	1.1%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-0.99	-1.61			
	in %	-2.0%	-3.3%			
3. Focus on en-route at State/Charging Zone level						
<p>En-route unit cost In 2016, the actual real en-route unit cost (47.56 €2009) is -3.3% lower than planned in the PP (49.16 €2009). This difference results from the combination of higher than planned TSUs (by +1.1%) and lower than planned en-route costs (-2.2%, or -1.2 M€2009).</p>						
<p>En-route service units The difference between actual and planned TSUs (+1.1%) falls within the ±2% dead band foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues i.e. 0.5 M€2009 is fully retained by the ATSP. The planned TSUs for the remaining years of the RP are significantly above the STATFOR February 2017 baseline scenario and slightly below STATFOR February 2017 high case scenario.</p>						
<p>En-route costs In nominal terms, actual en-route costs are -4.4% lower than planned. However, since the actual inflation index is lower to what was planned (-2.5 p.p.), actual en-route costs are -2.2% below planned, when expressed in €2009. The lower than planned en-route costs, in real terms, are driven by lower actual costs for LPS (-1.5% or -0.8 M€2009) and METSP (-26.9% or -0.5 M€2009), while the NSA actual costs are slightly higher than planned (+1.4% or +0.1 M€2009). A detailed analysis of LPS is provided in Box 12.</p>						
<p>Costs exempt from cost sharing are reported for a total amount of -0.03 M€2009 for the difference in EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) in the following reference period(s), if deemed allowed by the European Commission.</p>						

SLOVAKIA: En-route charging zone

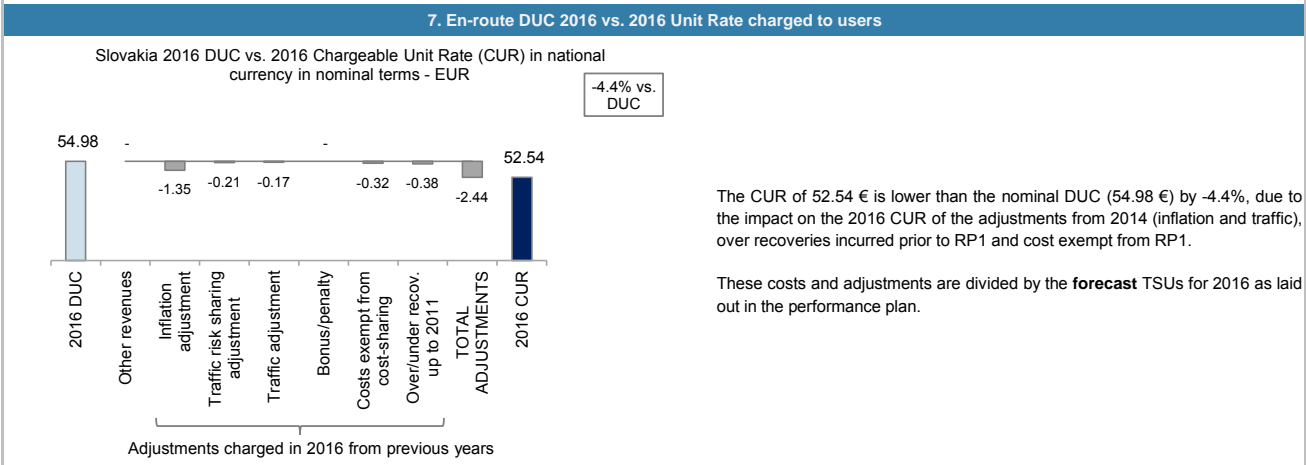
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

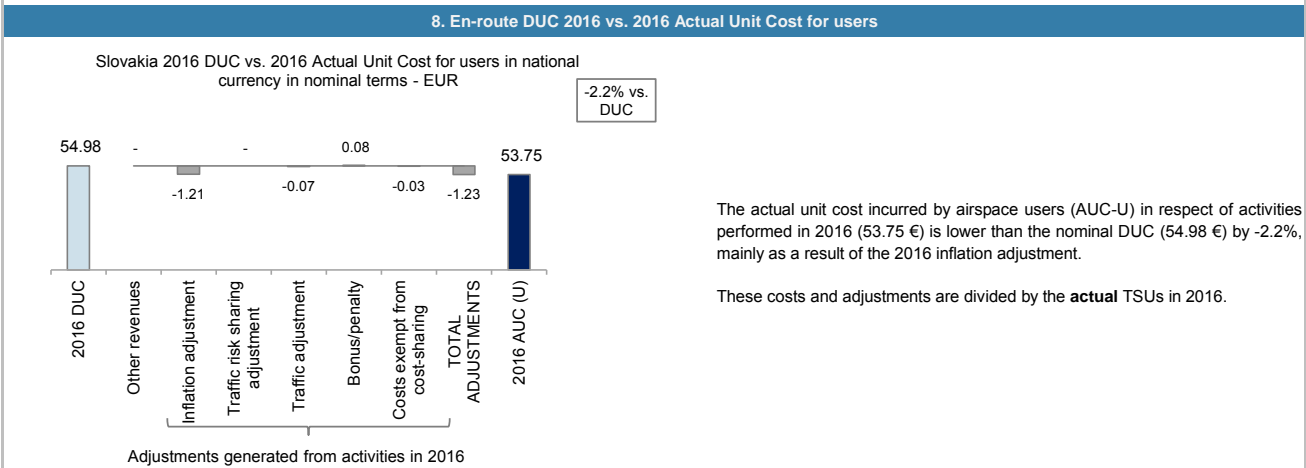
Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-12	-33			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-12	-33			
Total costs exempt from cost sharing		-12	-33			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



The CUR of 52.54 € is lower than the nominal DUC (54.98 €) by -4.4%, due to the impact on the 2016 CUR of the adjustments from 2014 (inflation and traffic), over recoveries incurred prior to RP1 and cost exempt from RP1.

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the performance plan.



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (53.75 €) is lower than the nominal DUC (54.98 €) by -2.2%, mainly as a result of the 2016 inflation adjustment.

These costs and adjustments are divided by the **actual** TSUs in 2016.

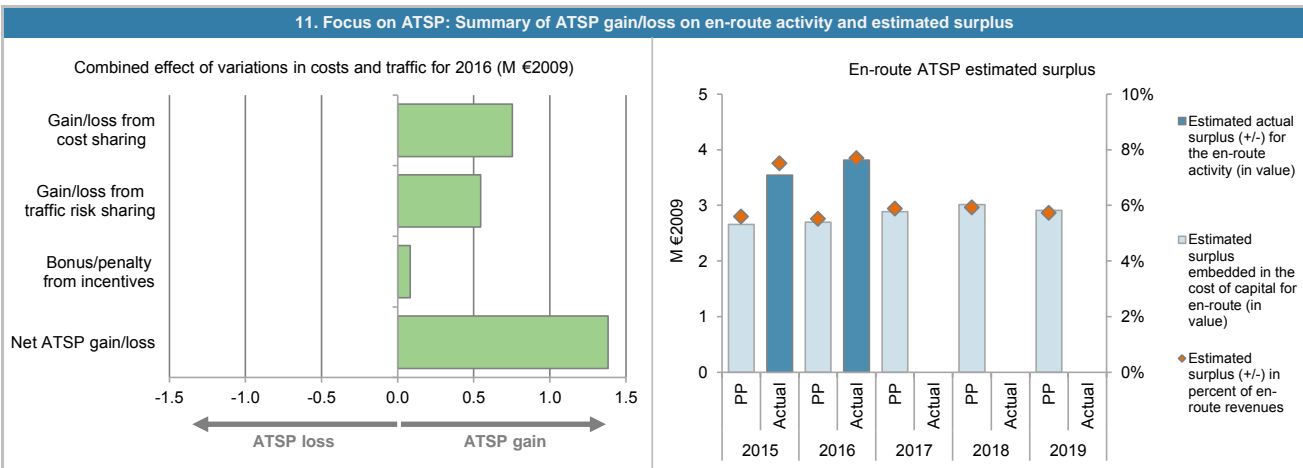
SLOVAKIA: En-route ATSP (LPS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	47 459	48 948			
Actual costs for the ATSP	46 046	48 194			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 414	754			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 414	754			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.6%	1.1%			
Determined costs for the ATSP (PP) - based on actual inflation	47 619	50 066			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-292	545			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	83			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	1 121	1 382			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	50 437	49 897	52 003	55 853	56 081
Estimated proportion of financing through equity (in %)	85.1%	88.7%	92.3%	96.2%	99.0%
Estimated proportion of financing through equity (in value)	42 915	44 259	48 022	53 718	55 545
Estimated proportion of financing through debt (in %)	14.9%	11.3%	7.7%	3.8%	1.0%
Estimated proportion of financing through debt (in value)	7 522	5 638	3 981	2 134	536
Cost of capital pre-tax (in value)	2 831	2 832	2 982	3 069	2 921
Average interest on debt (in %)	2.3%	2.4%	2.4%	2.5%	2.5%
Interest on debt (in value)	173	132	96	52	13
Determined RoE pre-tax rate (in %)	6.2%	6.1%	6.0%	5.6%	5.2%
Estimated surplus embedded in the cost of capital for en-route (in value)	2 658	2 699	2 886	3 016	2 908
Overall estimated surplus (+/-) for the en-route activity	2 658	2 699	2 886	3 016	2 908
Revenue/costs for the en-route activity	47 459	48 948	49 073	50 888	50 755
Estimated surplus (+/-) in percent of en-route revenues	5.6%	5.5%	5.9%	5.9%	5.7%
Estimated ex-ante RoE pre-tax rate (in %)	6.2%	6.1%	6.0%	5.6%	5.2%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	44 959	46 638			
Estimated proportion of financing through equity (in %)	86.9%	85.5%			
Estimated proportion of financing through equity (in value)	39 087	39 891			
Estimated proportion of financing through debt (in %)	13.1%	14.5%			
Estimated proportion of financing through debt (in value)	5 872	6 747			
Cost of capital pre-tax (in value)	2 521	2 551			
Average interest on debt (in %)	1.7%	1.8%			
Interest on debt (in value)	100	118			
Determined RoE pre-tax rate (in %)	6.2%	6.1%			
Estimated surplus embedded in the cost of capital for en-route (in value)	2 421	2 433			
Net ATSP gain(+)/loss(-) on en-route activity	1 121	1 382			
Overall estimated surplus (+/-) for the en-route activity	3 543	3 815			
Revenue/costs for the en-route activity	47 167	49 576			
Estimated surplus (+/-) in percent of en-route revenues	7.5%	7.7%			
Estimated ex-post RoE pre-tax rate (in %)	9.1%	9.6%			

SLOVAKIA: En-route ATSP (LPS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 LPS en-route costs vs. PP

In 2016, LPS's actual en-route costs are -1.5% (-0.8 M€2009) lower, in real terms than planned in the PP. This results from the combination of:

- higher staff costs (+3.1% or +0.9 M€2009);
- lower other operating costs (-16.8% or -1.6 M€2009), as a result of "further savings of maintenance costs (as a result of previous infrastructure investments), decreased prices of energies and telecommunication fees and also due to cost saving measures aimed to reduce travel costs";
- higher depreciation costs (+3.5% or +0.2 M€2009);
- lower cost of capital (-9.9% or -0.3 M€2009), mainly due to lower asset base and interest rate on debt than planned.

LPS net gain/loss on en-route activity in 2016

As shown in Box 9, LPS generated a net gain of +1.4 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +0.8 M€2009 arising from the cost-sharing mechanism;
- a gain of +0.5 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +0.1 M€2009 corresponding to a bonus for LPS as part of the capacity target incentive mechanism. This amount corresponds to 0.2% of LPS en-route revenues (based on the ATSP chargeable unit rate and actual TSUs in 2016). It should be noted that the amounts reported in respect of financial incentives will be examined by the European Commission.

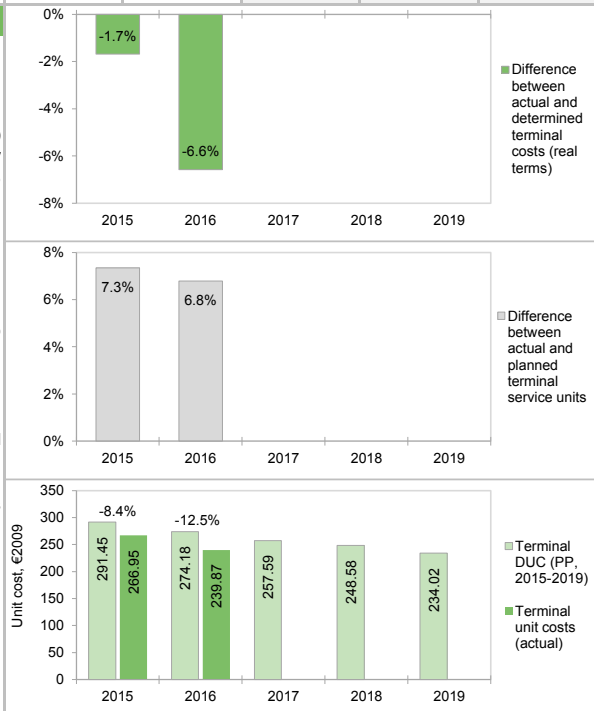
LPS overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+1.4 M€2009) and the surplus embedded in the actual cost of capital (+2.4 M€2009) amounts to +3.8 M€2009 (7.7% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 9.6%, which is higher than the 6.1% planned.

SLOVAKIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

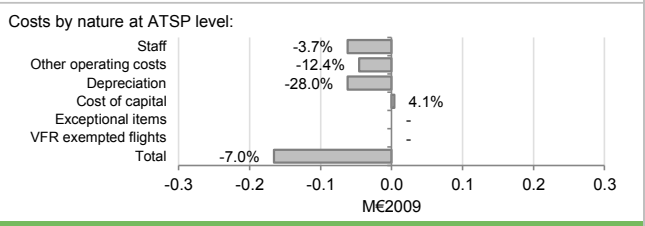
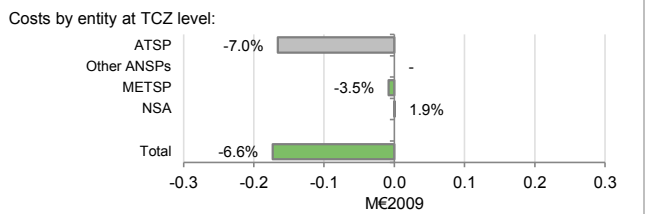
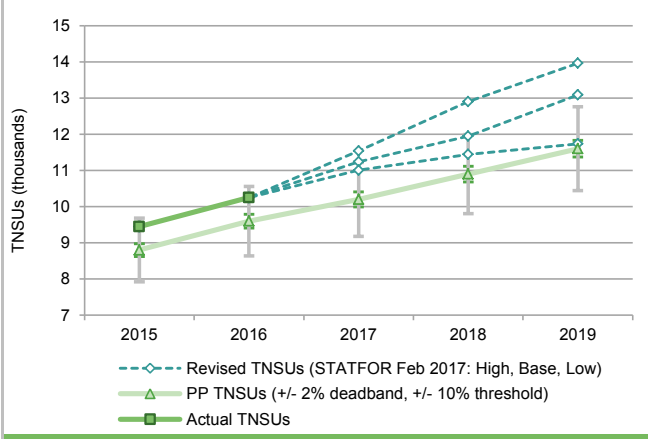
1. Contextual economic information: terminal air navigation services					
· Slovakia TCZ represents 0.2% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		No	
· ATSP:	LPS	· Airports with fewer than 70,000 IFRs ATMs:		1	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	1,	of which:	· Airports with more than 225,000 IFRs ATMs:	0	
2. Terminal DUC monitoring at Charging Zone level					
Slovakia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	2 828 016	2 943 863	2 988 005	3 136 195	3 205 198
Inflation %	0.0%	1.4%	1.7%	1.8%	2.0%
Inflation index (100 in 2009)	110.3	111.8	113.7	115.7	118.1
Real terminal costs (EUR2009)	2 564 717	2 632 112	2 627 465	2 709 491	2 714 649
Total terminal Service Units	8 800	9 600	10 200	10 900	11 600
Real terminal unit cost per Service Unit (EUR2009)	291.45	274.18	257.59	248.58	234.02
Slovakia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	2 771 137	2 688 878			
Inflation %	-0.3%	-0.5%			
Inflation index (100 in 2009)	109.9	109.3			
Real terminal costs (EUR2009)	2 521 578	2 459 022			
Total terminal Service Units	9 446	10 251			
Real terminal unit cost per Service Unit (EUR2009)	266.95	239.87			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -56 879	in value -254 985			
	in % -2.0%	in % -8.7%			
Inflation %	in p.p. -0.3 p.p.	in p.p. -1.9 p.p.			
Inflation index (100 in 2009)	in p.p. -0.4 p.p.	in p.p. -2.5 p.p.			
Real terminal costs (EUR2009)	in value -43 139	in value -173 091			
	in % -1.7%	in % -6.6%			
Total terminal Service Units	in value 646	in value 651			
	in % 7.3%	in % 6.8%			
Real terminal unit cost per Service Unit (EUR2009)	in value -24.50	in value -34.31			
	in % -8.4%	in % -12.5%			
3. Focus on terminal at State/Charging Zone level					
This analysis focuses on Slovakia Terminal Charging zone comprising one airport, Bratislava/M.R. Stefanik.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (239.87 €2009) is significantly lower (-12.5%) than planned in the PP (274.18 €2009). This is resulting from the combination of significantly higher than planned TNSUs (+6.8%) and significantly lower than planned terminal costs (-6.6% or -0.2M€2009).					
Terminal service units					
Traffic risk sharing does not apply in the TCZ. The difference between actual and planned TNSUs is +6.8%.					
Based on the STATFOR February 2017 forecast baseline scenario, the TNSUs are expected to remain above the planned values in the remaining years of RP2.					
Terminal costs					
In nominal terms, the 2016 actual terminal costs are lower than the determined costs by -8.7%. Since the actual inflation index is lower than planned for 2016 (by -2.5 p.p.), actual cost in real terms are also lower than planned (by -6.6%) when expressed in €2009.					
The lower than planned terminal costs, in real terms, are essentially driven by lower actual costs for LPS (-7.0% or -0.2 M€2009). A detailed analysis of LPS is provided in Box 12.					
There are no costs exempted from cost-sharing reported for the TCZ.					



SLOVAKIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)

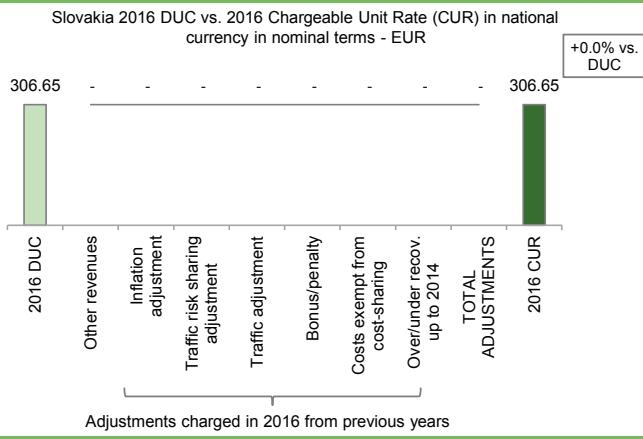


6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

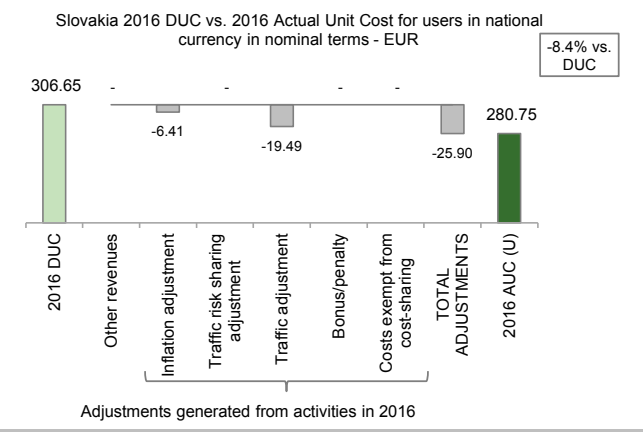
These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users



The CUR of 306.65 € is equal to the nominal DUC, as no adjustments relating to previous years are carried over to the 2016 unit rate.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (280.75 €) is significant lower (-8.4%) than the nominal DUC (306.65 €). The difference between these two figures (-25.90 €) is mainly due to the traffic adjustment reflecting higher actual TNSUs than planned and the inflation adjustment reflecting lower actual inflation than planned (see Box 2).

These costs and adjustments are divided by the actual TNSUs in 2016.

SLOVAKIA: Terminal ATSP (LPS)

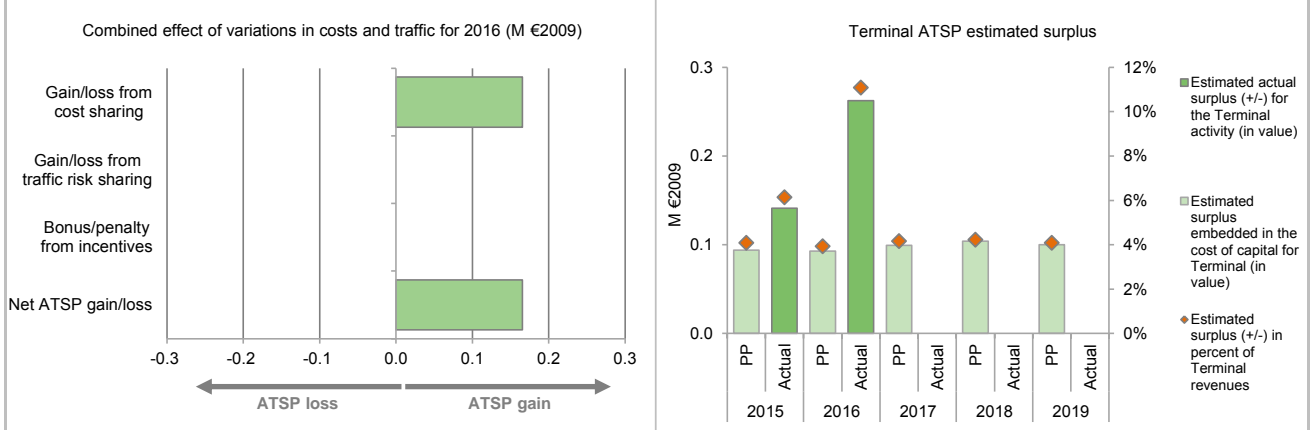
Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	2 299	2 368			
Actual costs for the ATSP	2 254	2 203			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	44	166			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	44	166			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	44	166			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 783	1 719	1 791	1 924	1 932
Estimated proportion of financing through equity (in %)	85.1%	88.7%	92.4%	96.2%	99.0%
Estimated proportion of financing through equity (in value)	1 517	1 525	1 654	1 851	1 914
Estimated proportion of financing through debt (in %)	14.9%	11.3%	7.6%	3.8%	1.0%
Estimated proportion of financing through debt (in value)	266	194	137	74	18
Cost of capital pre-tax (in value)	100	98	103	106	101
Average interest on debt (in %)	2.3%	2.4%	2.4%	2.5%	2.5%
Interest on debt (in value)	6	5	3	2	0
Determined RoE pre-tax rate (in %)	6.2%	6.1%	6.0%	5.6%	5.2%
Estimated surplus embedded in the cost of capital for terminal (in value)	94	93	99	104	100
Overall estimated surplus (+/-) for the terminal activity	94	93	99	104	100
Revenue/costs for the terminal activity	2 299	2 368	2 388	2 458	2 457
Estimated surplus (+/-) in percent of terminal revenues	4.1%	3.9%	4.2%	4.2%	4.1%
Estimated ex-ante RoE pre-tax rate (in %)	6.2%	6.1%	6.0%	5.6%	5.2%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	1 796	1 858			
Estimated proportion of financing through equity (in %)	86.9%	85.5%			
Estimated proportion of financing through equity (in value)	1 561	1 589			
Estimated proportion of financing through debt (in %)	13.1%	14.5%			
Estimated proportion of financing through debt (in value)	235	269			
Cost of capital pre-tax (in value)	101	102			
Average interest on debt (in %)	1.7%	1.8%			
Interest on debt (in value)	4	5			
Determined RoE pre-tax rate (in %)	6.2%	6.1%			
Estimated surplus embedded in the cost of capital for terminal (in value)	97	97			
Net ATSP gain(+)/loss(-) on terminal activity	44	166			
Overall estimated surplus (+/-) for the terminal activity	141	263			
Revenue/costs for the terminal activity	2 299	2 368			
Estimated surplus (+/-) in percent of terminal revenues	6.1%	11.1%			
Estimated ex-post RoE pre-tax rate (in %)	9.0%	16.5%			

SLOVAKIA: Terminal ATSP (LPS)

Monitoring of terminal COST-EFFICIENCY for 2016

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 LPS costs vs. PP

LPS's actual terminal costs are lower, in real terms to what was planned in the PP. This is due to lower staff costs (-3.7% or -0.06 M€2009) due to a lower number of ATCOs than planned; lower operating costs (-12.4% or -0.05 M€2009) resulting from savings; lower depreciation (-28% or -0.06 M€2009) due to delays in procurement processes.

LPS 2016 net gain/loss on terminal activity

As shown in Box 9, the terminal activity of the TCZ generated a net gain of +0.2 M€2009 in 2016, as result of the cost-sharing mechanism. Traffic risk sharing does not apply and there are no financial incentives for the Terminal Charging Zone.

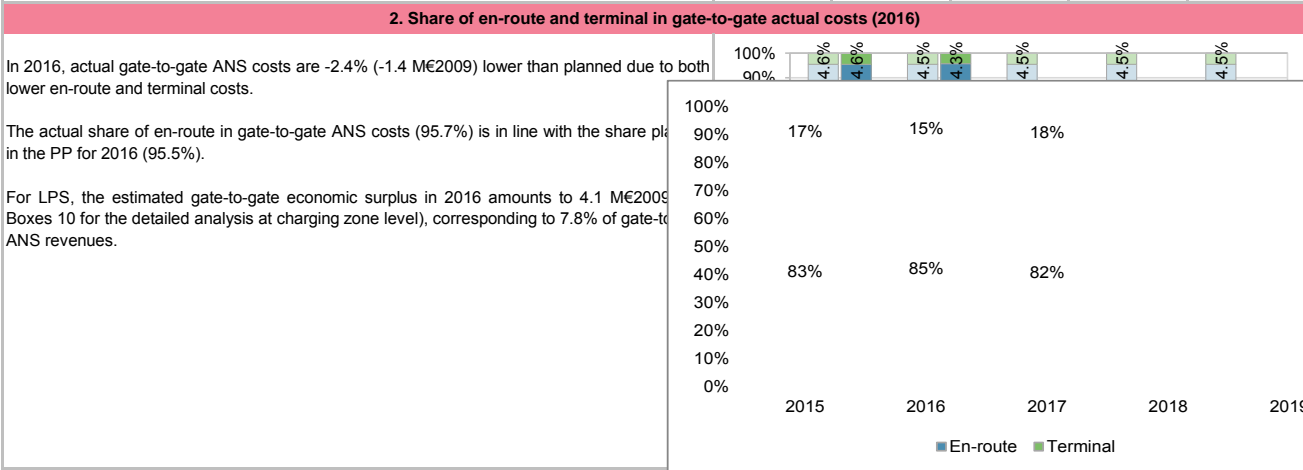
LPS 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+0.2 M€2009) and the surplus embedded in the actual cost of capital (+0.1 M€2009) amounts to +0.3 M€2009 (11.1% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 16.5%, which is higher than the 6.1% planned.

SLOVAKIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Slovakia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	53 754 368	55 355 807	55 381 628	57 279 434	57 253 112
Real terminal costs (EUR2009)	2 564 717	2 632 112	2 627 465	2 709 491	2 714 649
Real gate-to-gate costs (EUR2009)	56 319 084	57 987 919	58 009 093	59 988 925	59 967 761
En-route share (%)	95.4%	95.5%	95.5%	95.5%	95.5%
Slovakia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	52 361 339	54 131 116			
Real terminal costs (EUR2009)	2 521 578	2 459 022			
Real gate-to-gate costs (EUR2009)	54 882 916	56 590 138			
En-route share (%)	95.4%	95.7%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-1 436 168	-1 397 781			
in %	-2.6%	-2.4%			
En-route share					
in p.p.	0.0%	0.2%			



3. Technical notes on en-route and terminal information reported by Slovakia

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Slovenia

Version: 1.1

Date: 9 October 2017

SLOVENIA

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	58	B	C	B	B	B
Slovenia Control	70	C	D	C	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	CAA/Slovenja Control	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	17	1
Slovenia Control	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	21	3

Observations

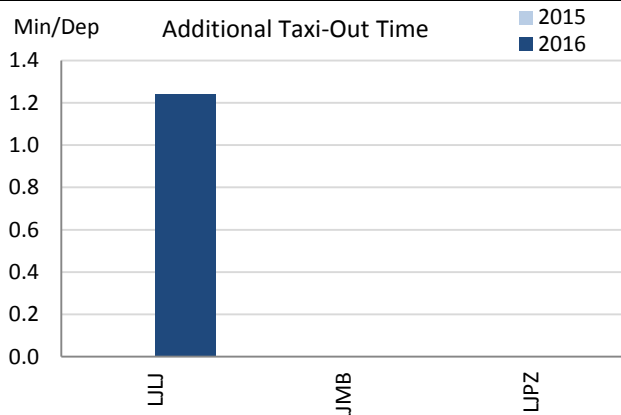
One out of the four reviewed EoSM Components/areas of the State is below the 2019 EoSM target level (Safety Culture excluded). After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), 3 are below Level C.

1. Overview

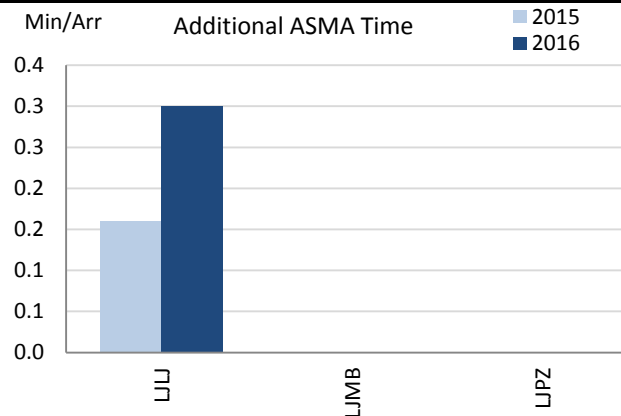
Slovenia identified three airports as subject to RP2 monitoring. However, the airport data flow is only established for Ljubljana, where remaining data issues were solved allowing for a full monitoring including taxi-out times as of 2016. Slovenian airports should establish the airport operator data flow to allow for a correct monitoring of the airport indicators.

2. Additional Taxi-Out Time



Additional taxi-out times at Ljubljana are slightly above the values shown by other airports with that number of movements per year. These additional times are significantly higher during the winter.

3. Additional ASMA Time



Despite the increase of additional ASMA times at Ljubljana in 2016, they are still well below the average for airports in RP2, commensurate with the level of traffic.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Ljubljana	LJU	n/a	1.24				0.16	0.30			
Maribor	LJMB	n/a	n/a				n/a	n/a			
Portorož	LJPZ	n/a	n/a				n/a	n/a			

SLOVENIA

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.21	0.21	0.22	0.23	0.22	
Deadband +/-	0.03	0.03	0.03	0.03	0.03	
Actual performance	0.00	0.01				

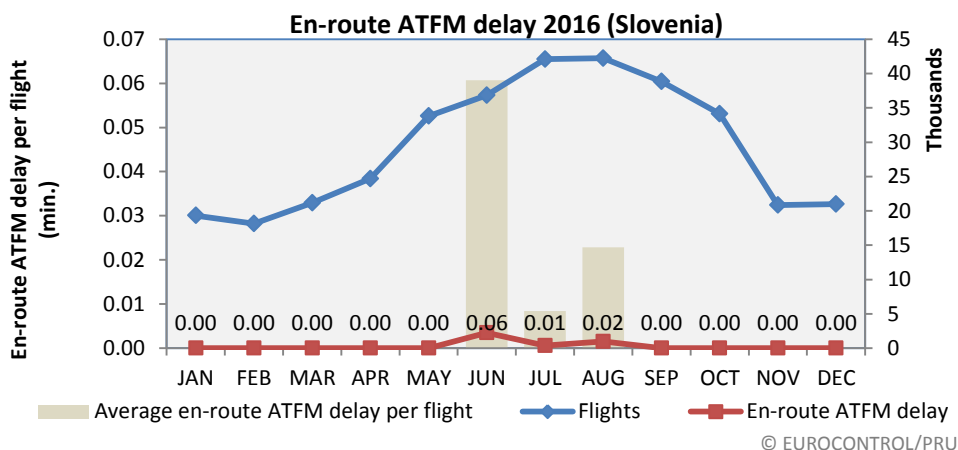
National capacity incentive scheme

Bonus/Penalty = FAB PONDER x NATIONAL ANSP ELEMENT x 0.5% ANSP EN ROUTE REVENUE. The FAB CE monitoring report states that the actual national delay in Slovenia was 0.01 minutes per flight instead of the national target of 0.21 minutes per flight, a percentage deviation of 95%, results in a NATIONAL ANSP ELEMENT of 95%. Therefore the national en route capacity incentive for Slovenia = 50% * 95% * 0.5% (0.24%) of en route revenue of Slovenia Control = 77,851.15 EUR

Compliance issues relating to national capacity incentive scheme

The FAB CE monitoring report states that there were no compliance issues despite the PRB highlighting that the aggregation of ANSP contributions for the FAB were inconsistent with the FAB targets.

Observations regarding national capacity performance



En-route ATFM delay per flight (Slovenia)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01

The continued excellent en route capacity performance in Slovenia during 2016, and the positive contribution both to the FAB CE and the Union-wide target for en route capacity is noted. It is also noted that the Network Manager does not expect any capacity problems in Slovenia for the remainder of RP2.

Planning and Effective Use of CDRs

Such data is not available at national level, since there are no CDRs in Slovenian airspace.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 88%.
The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%
Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

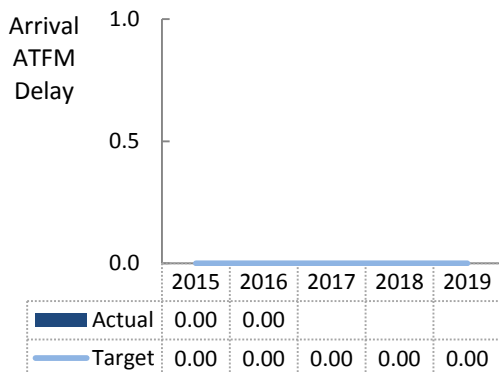
SLOVENIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

ANS at 3 airports are subject to RP2 in Slovenia. As in the past, no arrival ATFM delay has been accrued in Slovenia. The national target is fully met in 2015 and 2016.

2. Arrival ATFM Delay



In line with the performance observed in 2015, no arrival ATFM delay was accrued in 2016 in Slovenia.

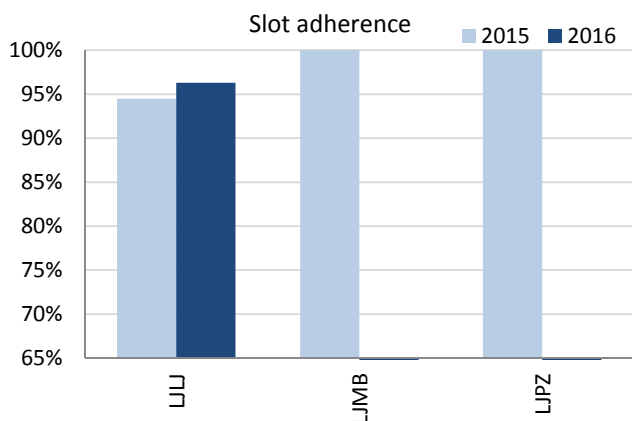
Ljubljana (LJL) is the major airport in Slovenia. The good performance is consistent with the traffic observed and demonstrates that there are no capacity constraints at LJL.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FAB CE performance plan sets a national target for arrival ATFM delay for Slovenia.

The FAB CE performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Slovenia.

4. ATFM Slot Adherence



Slot adherence in Slovenia ranges within the best-in-class group across Europe well above 95%.

Performance at Ljubljana (LJL) improved slightly by 0.8% in 2016 (2015: 94.5% vs 2016: 96.3%).

There were no regulated departures at LIMB and LJPZ in 2016.

5. Pre-departure Delay

Ljubljana (LJL) accrued negligible pre-departure delay in 2015 and 2016. This level of performance is commensurate with the level of traffic observed.

To improve the level of operational monitoring for Maribor (LJMB) and Portoroz (LJPZ), Slovenia may consider the establishment of the airport operator flow at these airports.

6. Appendix

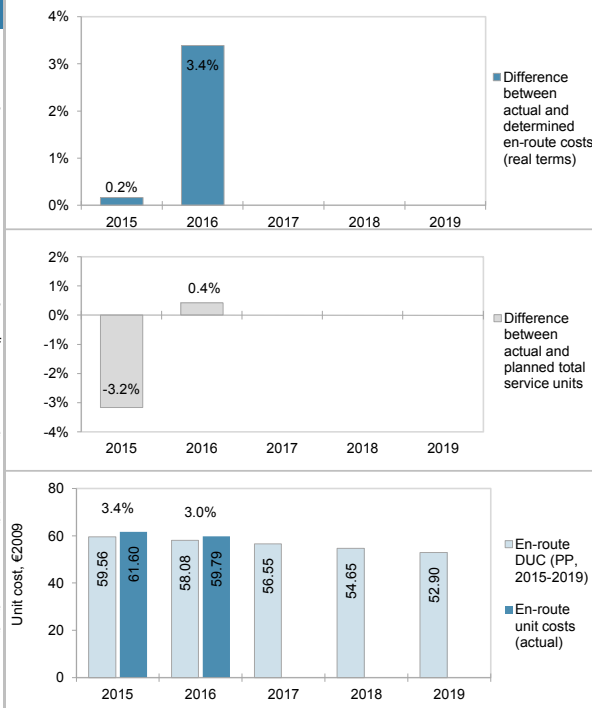
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Ljubljana	LJL	0.00	0.00				94.5%	96.3%				0.03	0.02			
Maribor	LJMB	0.00	0.00				100.0%					n/a	n/a			
Portorož	LJPZ	0.00	0.00				100.0%					n/a	n/a			

SLOVENIA: En-route charging zone

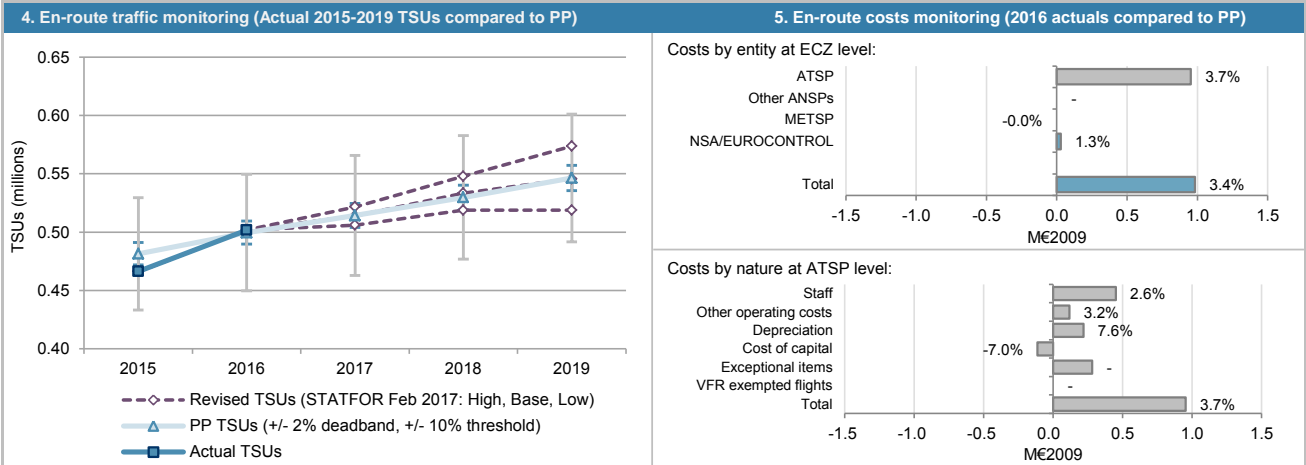
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Slovenia ECZ represents 0.5% of the SES en-route ANS determined costs in 2016						
· ATSP: Slovenia Control						
· FAB: FAB CE						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Slovenia: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		32 094 283	33 168 798	33 870 218	34 392 801	35 029 005
Inflation %		1.6%	2.1%	1.9%	2.0%	2.0%
Inflation index (100 in 2009)		111.9	114.3	116.5	118.8	121.2
Real en-route costs (EUR2009)		28 675 840	29 018 678	29 079 819	28 949 500	28 906 876
Total en-route Service Units		481 500	499 637	514 217	529 770	546 470
Real en-route unit cost per Service Unit (EUR2009)		59.56	58.08	56.55	54.65	52.90
Slovenia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		31 147 499	32 468 008			
Inflation %		-0.8%	-0.2%			
Inflation index (100 in 2009)		108.4	108.2			
Real en-route costs (EUR2009)		28 723 475	30 001 219			
Total en-route Service Units		466 264	501 752			
Real en-route unit cost per Service Unit (EUR2009)		61.60	59.79			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-946 784	-700 790			
	in %	-3.0%	-2.1%			
Inflation %	in p.p.	-2.4 p.p.	-2.3 p.p.			
	in p.p.	-3.5 p.p.	-6.1 p.p.			
Real en-route costs (EUR2009)	in value	47 635	982 541			
	in %	0.2%	3.4%			
Total en-route Service Units	in value	-15 236	2 115			
	in %	-3.2%	0.4%			
Real en-route unit cost per Service Unit (EUR2009)	in value	2.05	1.71			
	in %	3.4%	3.0%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, Slovenia's actual real en-route unit cost (59.79 €2009) is +3.0% higher than planned in the PP (58.08 €2009). This difference results from the combination of higher than planned actual real en-route costs (+3.4%, or +1.0 M€2009), while TSUs remained close to what was planned (+0.4%).						
In terms of corrective measures, the FAB CE FAB Monitoring Report for 2016 indicates that "Cost reductions were applied at an ANSP level, but costs at a national level (staff, depreciation) are not directly linked to level of inflation".						
En-route service units						
The difference between actual and planned TSUs (+0.4%) falls within the ±2% dead band foreseen in the traffic risk sharing mechanism. The resulting gain of additional en-route revenues i.e. +0.1 M€2009 is fully retained by the ATSP. Based on the STATFOR February 2017 forecast, the planned TSUs for the remaining years of RP2 are expected to remain mostly in line with the baseline scenario.						
En-route costs						
In nominal terms, actual en-route costs are -2.1% (-0.7 M€) lower than planned. However, since the actual inflation index is also significantly lower than planned for 2016 (by -6.1 p.p.), actual costs in real terms are higher than planned (+3.4%) when expressed in real terms. The higher than planned en-route costs, in real terms, are driven by higher costs for Slovenia Control (+3.7%, or +1.0 M€2009) and NSA/EUROCONTROL (+1.3%, or +0.03 M€2009) while costs for MET service provider (ARSO) remained in line with the plan. Slovenia Control being the main contributor, a detailed analysis is provided in box 12.						
Costs exempt from cost sharing are reported for a total amount of -0.03 M€2009 comprising the variation in EUROCONTROL costs to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission.						



SLOVENIA: En-route charging zone

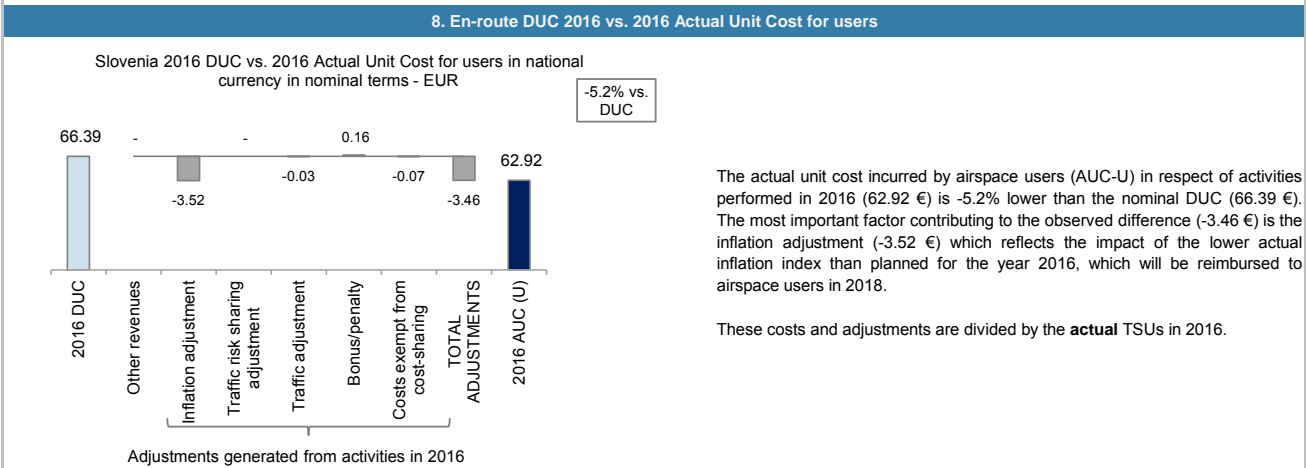
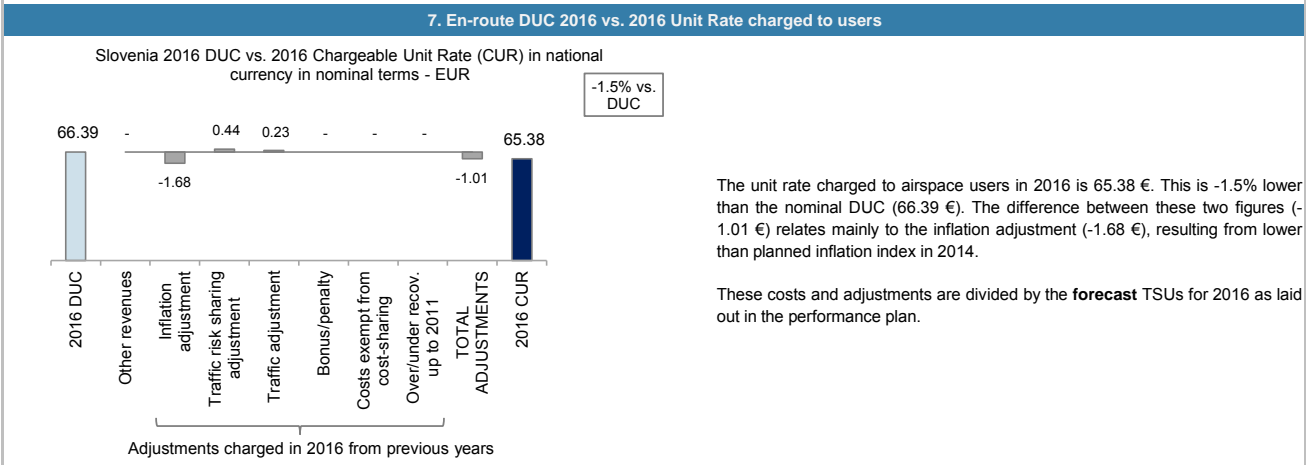
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-6	-32			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-6	-32			
Total costs exempt from cost sharing		-6	-32			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



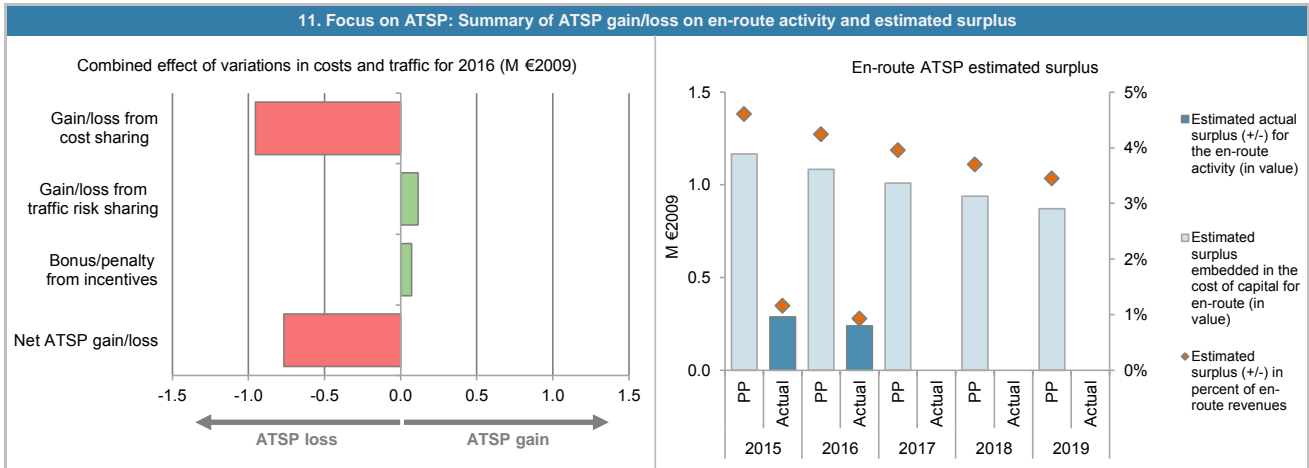
SLOVENIA: En-route ATSP (Slovenia Control)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	25 314	25 555			
Actual costs for the ATSP	25 527	26 509			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-212	-954			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-212	-954			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-3.2%	0.4%			
Determined costs for the ATSP (PP) - based on actual inflation	26 127	26 990			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-614	114			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	37	72			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-790	-768			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	28 581	26 582	24 732	23 011	21 379
Estimated proportion of financing through equity (in %)	51.0%	51.0%	51.0%	51.0%	51.0%
Estimated proportion of financing through equity (in value)	14 575	13 556	12 612	11 734	10 902
Estimated proportion of financing through debt (in %)	49.0%	49.0%	49.0%	49.0%	49.0%
Estimated proportion of financing through debt (in value)	14 006	13 027	12 120	11 276	10 477
Cost of capital pre-tax (in value)	1 723	1 603	1 491	1 388	1 289
Average interest on debt (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
Interest on debt (in value)	557	518	482	449	417
Determined RoE pre-tax rate (in %)	8.0%	8.0%	8.0%	8.0%	8.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 166	1 084	1 009	939	872
Overall estimated surplus (+/-) for the en-route activity	1 166	1 084	1 009	939	872
Revenue/costs for the en-route activity	25 314	25 555	25 499	25 361	25 299
Estimated surplus (+/-) in percent of en-route revenues	4.6%	4.2%	4.0%	3.7%	3.4%
Estimated ex-ante RoE pre-tax rate (in %)	8.0%	8.0%	8.0%	8.0%	8.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	26 399	24 715			
Estimated proportion of financing through equity (in %)	51.0%	51.0%			
Estimated proportion of financing through equity (in value)	13 462	12 604			
Estimated proportion of financing through debt (in %)	49.0%	49.0%			
Estimated proportion of financing through debt (in value)	12 937	12 112			
Cost of capital pre-tax (in value)	1 592	1 490			
Average interest on debt (in %)	4.0%	4.0%			
Interest on debt (in value)	515	482			
Determined RoE pre-tax rate (in %)	8.0%	8.0%			
Estimated surplus embedded in the cost of capital for en-route (in value)	1 077	1 008			
Net ATSP gain(+)/loss(-) on en-route activity	-790	-768			
Overall estimated surplus (+/-) for the en-route activity	287	240			
Revenue/costs for the en-route activity	24 737	25 741			
Estimated surplus (+/-) in percent of en-route revenues	1.2%	0.9%			
Estimated ex-post RoE pre-tax rate (in %)	2.1%	1.9%			

SLOVENIA: En-route ATSP (Slovenia Control)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 Slovenia Control en-route costs vs. PP

In 2016, Slovenia Control's actual en-route costs are +3.7% (+1.0 M€2009) higher, in real terms than planned in the PP. However, this is mainly due to a lower than planned inflation index (-6.1 p.p.), as actual costs are lower than planned in nominal terms (-1.8%, or -0.5 M€). This results from the combination of:

- higher staff costs (+2.6%, or +0.5 M€2009), although staff costs are lower than planned in nominal terms (-2.9%, or -0.6 M€);
- higher other operating costs (+3.2%, or +0.1 M€2009), although other operating costs are lower than planned in nominal terms (-2.3%, or -0.1 M€);
- higher depreciation costs (+7.6%, or +0.2 M€2009);
- lower cost of capital (-7.0% or -0.1 M€2009), as a result of lower than planned asset base in real terms (-7.0%); and,
- exceptional items costs (0.3 M€2009), which were not planned in the PP.

No information is provided from the Slovenian NSA on the drivers for the above mentioned changes in either the FAB Monitoring Report 2016 or the Additional Information to the Reporting Tables.

Slovenia Control net gain/loss on en-route activity in 2016

As shown in box 9, Slovenia Control generated a net loss of -0.8 M€2009 on the en-route activity. This is a combination of three elements:

- a loss of -1.0 M€2009 arising from the cost-sharing mechanism;
- a gain of +0.1 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +0.1 M€2009 (or +78 '000 € in nominal terms), corresponding to a bonus for Slovenia Control as part of the capacity target incentive mechanism. This amount corresponds to 0.3% of Slovenia Control en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs).

The amounts reported in respect of financial incentives 2016, to be charged or reimbursed to users, will be examined by the European Commission.

Slovenia Control overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-0.8 M€2009) and the surplus embedded in the actual cost of capital (+1.0 M€2009) amounts to +0.2 M€2009 (0.9% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 1.9%, which is much lower than the 8.0% planned in the PP.

SLOVENIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Slovenia TCZ represents 0.3% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		No	
· ATSP:	Slovenia Control	· Airports with fewer than 70,000 IFRs ATMs:		3	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	3,	of which:		· Airports with more than 225,000 IFRs ATMs: 0	
2. Terminal DUC monitoring at Charging Zone level					
Slovenia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	3 866 727	3 885 016	3 909 038	3 930 727	3 942 720
Inflation %	1.6%	2.1%	1.9%	2.0%	2.0%
Inflation index (100 in 2009)	111.9	114.3	116.5	118.8	121.2
Real terminal costs (EUR2009)	3 454 872	3 398 918	3 356 167	3 308 617	3 253 638
Total terminal Service Units	12 531	12 602	12 697	12 786	12 837
Real terminal unit cost per Service Unit (EUR2009)	275.71	269.71	264.33	258.78	253.46
Slovenia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	3 789 131	4 164 883			
Inflation %	-0.8%	-0.2%			
Inflation index (100 in 2009)	108.4	108.2			
Real terminal costs (EUR2009)	3 494 246	3 848 452			
Total terminal Service Units	12 031	11 625			
Real terminal unit cost per Service Unit (EUR2009)	290.44	331.04			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -77 596	279 868			
	in % -2.0%	7.2%			
Inflation %	in p.p. -2.4 p.p.	-2.3 p.p.			
Inflation index (100 in 2009)	in p.p. -3.5 p.p.	-6.1 p.p.			
Real terminal costs (EUR2009)	in value 39 374	449 535			
	in % 1.1%	13.2%			
Total terminal Service Units	in value -500	-977			
	in % -4.0%	-7.8%			
Real terminal unit cost per Service Unit (EUR2009)	in value 14.73	61.33			
	in % 5.3%	22.7%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on the Slovenian Terminal Charging Zone (TCZ) comprising 3 airports: Ljubljana/Brnik (LJLJ), Maribor/Orehova Vas (LJMB) and Portoroz/Secovlje (LJPZ).</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (331.04 €2009) is significantly higher (+22.7%) than planned in the PP (269.71 €2009). This difference results from the combination of significantly lower TNSUs than planned (by -7.8%) and significantly higher actual real terminal costs than planned (+13.2%, or +0.4 ME2009).</p> <p>In terms of corrective measures, the FAB CE FAB Monitoring Report for 2016 indicates that "Cost reductions were applied at an ANSP level, but costs at a national level (staff, depreciation) are not directly linked to the level of inflation".</p> <p>Terminal service units Traffic risk sharing does not apply in the TCZ. The difference between actual and planned TNSUs is -7.8%. Based on STATFOR February 2017 base TNSU growth scenario, TNSUs are expected to increase throughout the remaining years of RP2 and be above planned by 2019.</p> <p>Terminal costs In nominal terms actual terminal costs are +7.2% (+0.3 M€) higher than planned. However, since the actual inflation index is significantly lower than planned for 2016 (by -6.1 p.p.), actual costs are even higher than planned (+13.2%) when expressed in real terms. This result is the combination of higher costs than planned for Slovenia Control (+15.6%, or +0.5 ME2009) and for the MET service provider (+4.4%, or +0.02ME2009), while the costs for the NSA were below plans (-25.4%, or -0.02ME2009). Slovenia Control being the main contributor, a detailed analysis is provided in box 12.</p> <p>No costs exempted from cost-sharing are reported for the TCZ.</p>					

SLOVENIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

Legend:
 - - - Revised TNSUs (STATFOR Feb 2017: High, Base, Low)
 - - - PP TNSUs (+/- 2% deadband, +/- 10% threshold)
 - - - Actual TNSUs

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	15.6%
Other ANSPs	-
METSP	4.4%
NSA	-25.4%
Total	13.2%

Costs by nature at ATSP level:

Staff	15.5%
Other operating costs	13.3%
Depreciation	4.4%
Cost of capital	26.5%
Exceptional items	-
VFR exempted flights	-
Total	15.6%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Slovenia 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The CUR charged to airspace users in 2016 is 197.19 €. This is significantly lower (-36.0%) than the nominal DUC (308.28 €). This significant difference between these two figures (-111.09 €) refers to deduction of other revenues, which according to the Additional Information provided along with the Terminal Reporting tables, consist of amounts in respect of commercial activities of Slovenia Control; and, for 2016 "the Ministry of Infrastructure, responsible as well for the transport, dedicated 750 000€ per year for improvement of business environment for all TNC users, resulting in a reduction of unit rate".

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Slovenia 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (205.32 €) is -33.4% lower than the nominal DUC (308.28 €). The factors contributing to the observed difference (-102.96 €) are: other revenues (-111.09 €), see analysis in box 7 above; the inflation adjustment (-17.77 €) which reflects the impact of the lower inflation index than planned for the year 2016, and which will be reimbursed to airspace users in 2018, and the traffic adjustment (+25.90 €) which reflects the impact of lower than planned TNSUs for the year 2016, and which will be charged to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

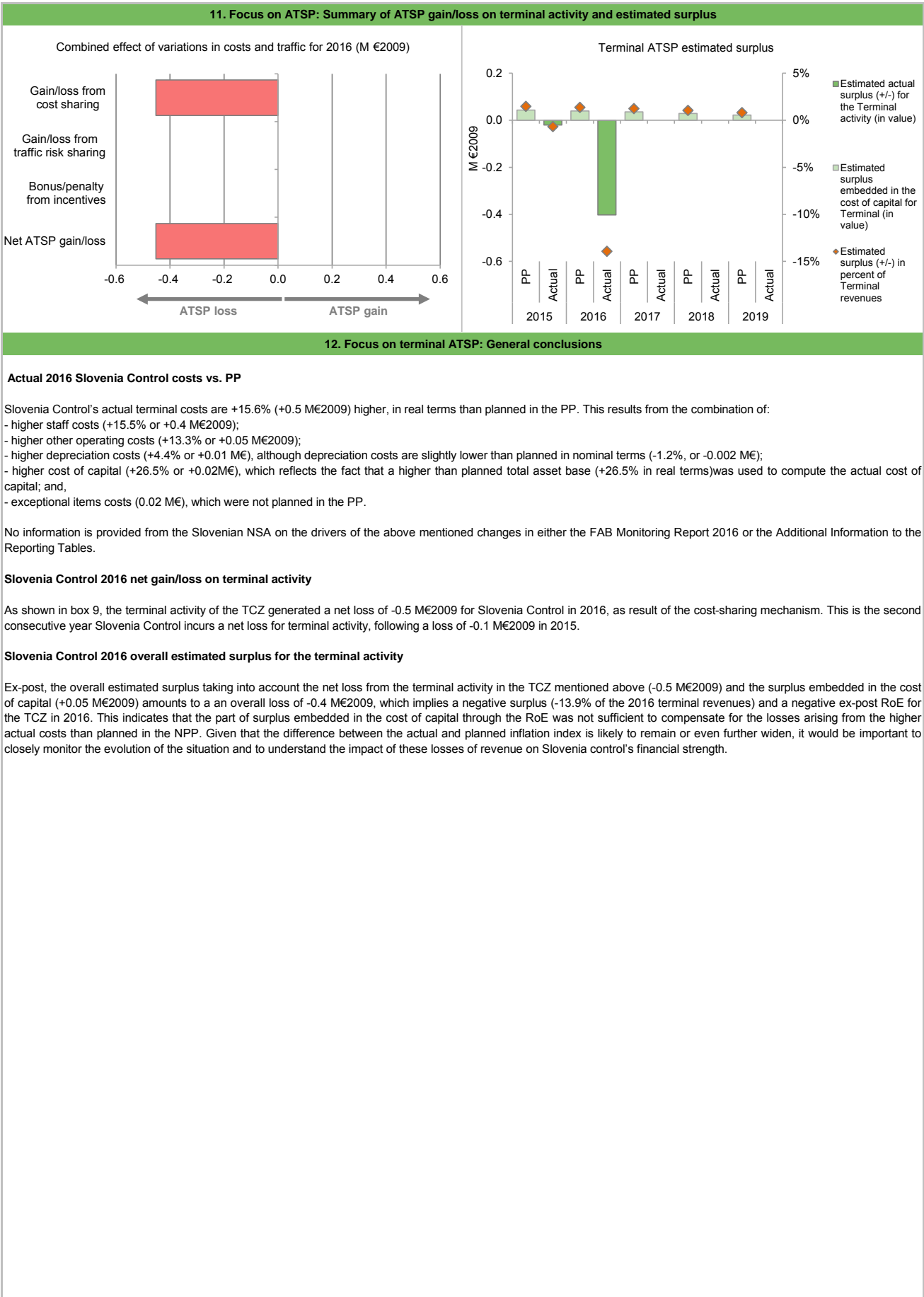
SLOVENIA: Terminal ATSP (Slovenia Control)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	2 931	2 891			
Actual costs for the ATSP	3 008	3 343			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-77	-452			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-77	-452			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-77	-452			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 045	952	855	704	538
Estimated proportion of financing through equity (in %)	51.0%	51.0%	51.0%	51.0%	51.0%
Estimated proportion of financing through equity (in value)	533	485	436	359	274
Estimated proportion of financing through debt (in %)	49.0%	49.0%	49.0%	49.0%	49.0%
Estimated proportion of financing through debt (in value)	512	466	419	345	264
Cost of capital pre-tax (in value)	63	57	52	42	32
Average interest on debt (in %)	4.0%	4.0%	4.0%	4.0%	4.0%
Interest on debt (in value)	20	19	17	14	10
Determined RoE pre-tax rate (in %)	8.0%	8.0%	8.0%	8.0%	8.0%
Estimated surplus embedded in the cost of capital for terminal (in value)	43	39	35	29	22
Overall estimated surplus (+/-) for the terminal activity	43	39	35	29	22
Revenue/costs for the terminal activity	2 931	2 891	2 851	2 812	2 763
Estimated surplus (+/-) in percent of terminal revenues	1.5%	1.3%	1.2%	1.0%	0.8%
Estimated ex-ante RoE pre-tax rate (in %)	8.0%	8.0%	8.0%	8.0%	8.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	1 387	1 205			
Estimated proportion of financing through equity (in %)	51.0%	51.0%			
Estimated proportion of financing through equity (in value)	707	614			
Estimated proportion of financing through debt (in %)	49.0%	49.0%			
Estimated proportion of financing through debt (in value)	680	590			
Cost of capital pre-tax (in value)	84	73			
Average interest on debt (in %)	4.0%	4.0%			
Interest on debt (in value)	27	23			
Determined RoE pre-tax rate (in %)	8.0%	8.0%			
Estimated surplus embedded in the cost of capital for terminal (in value)	57	49			
Net ATSP gain(+)/loss(-) on terminal activity	-77	-452			
Overall estimated surplus (+/-) for the terminal activity	-20	-403			
Revenue/costs for the terminal activity	2 931	2 891			
Estimated surplus (+/-) in percent of terminal revenues	-0.7%	-13.9%			
Estimated ex-post RoE pre-tax rate (in %)	-2.8%	-65.6%			

SLOVENIA: Terminal ATSP (Slovenia Control)

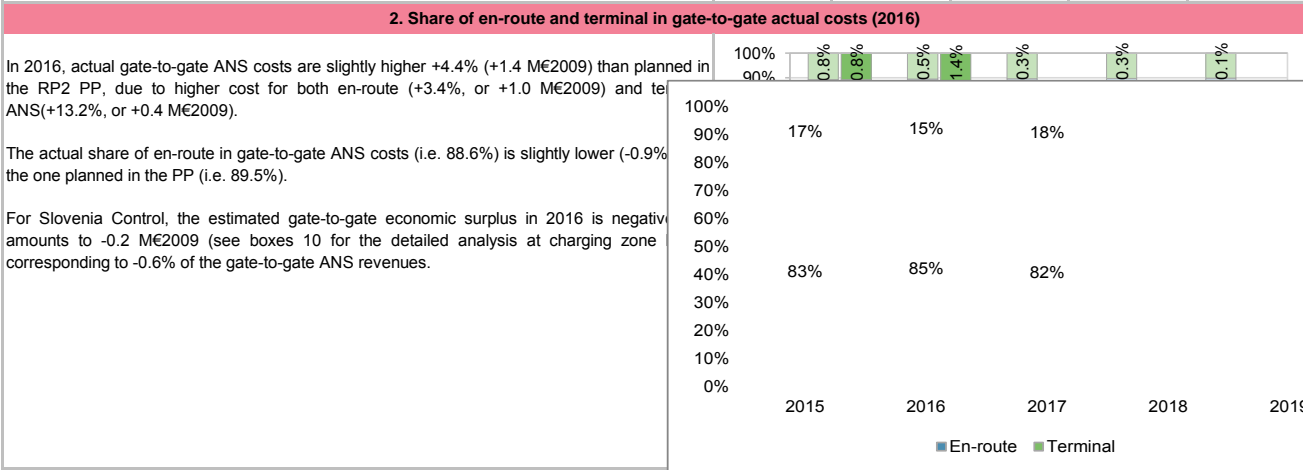
Monitoring of terminal COST-EFFICIENCY for 2016



SLOVENIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Slovenia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	28 675 840	29 018 678	29 079 819	28 949 500	28 906 876
Real terminal costs (EUR2009)	3 454 872	3 398 918	3 356 167	3 308 617	3 253 638
Real gate-to-gate costs (EUR2009)	32 130 712	32 417 596	32 435 986	32 258 117	32 160 514
En-route share (%)	89.2%	89.5%	89.7%	89.7%	89.9%
Slovenia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	28 723 475	30 001 219			
Real terminal costs (EUR2009)	3 494 246	3 848 452			
Real gate-to-gate costs (EUR2009)	32 217 721	33 849 671			
En-route share (%)	89.2%	88.6%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	87 009	1 432 076			
in %	0.3%	4.4%			
En-route share					
in p.p.	-0.1%	-0.9%			



3. Technical notes on en-route and terminal information reported by Slovenia

PRB Annual monitoring report 2016

Volume 2 – Local Overview

FABEC

Version: 1.1

Date: 9 October 2017

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	A			
	ANSPs	For Safety Culture MO	C	C			
	ANSPs	For all other MOs	B	C			

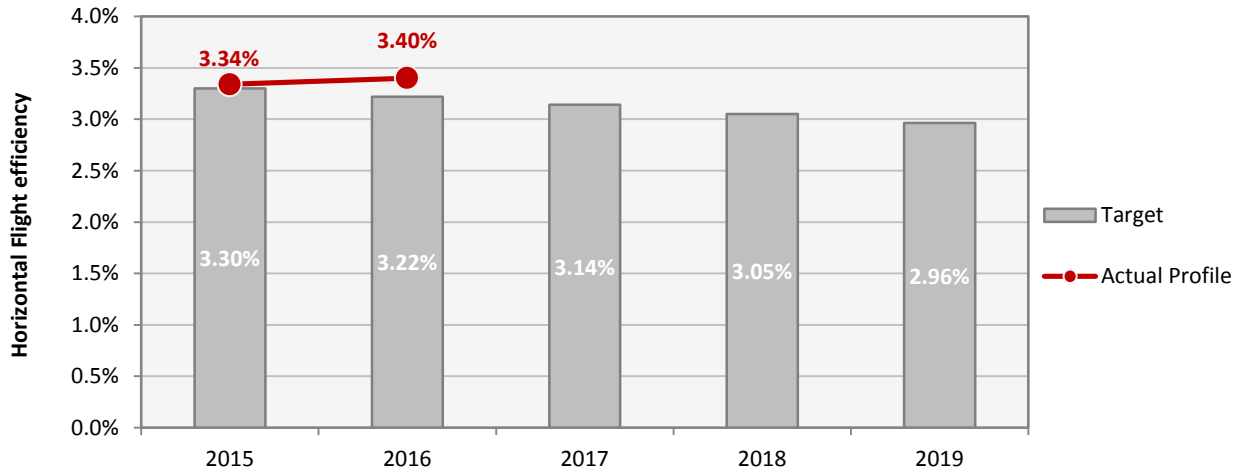
Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	97%			
	Runway Incursions (RIs)		96%	72%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	99%			
	Runway Incursions (RIs)		97%	88%			
	ATM Specific Occurences (ATM-S)		86%	84%			

Observations	
<p>The lowest answer in all EoS M Component/area of the States is Level "A" in the Safety Culture component which is below the 2019 EoS M target level. Note that this component is not verified by EASA. Safety Promotion is already at the 2019 EoS M target level.</p>	

FABEC

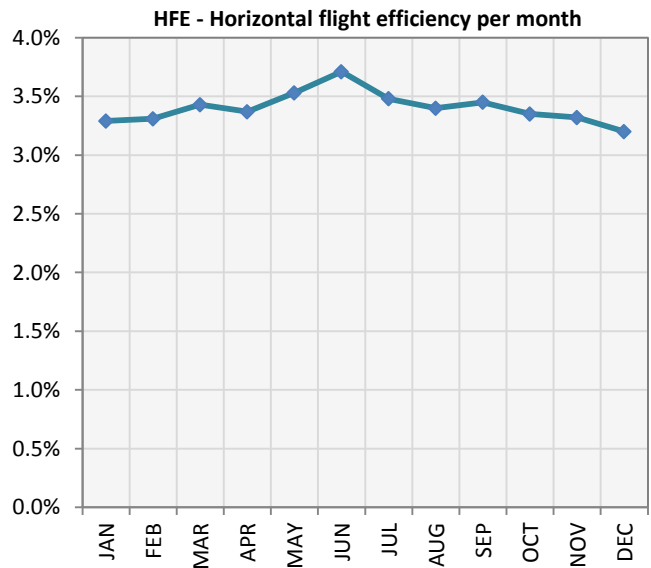
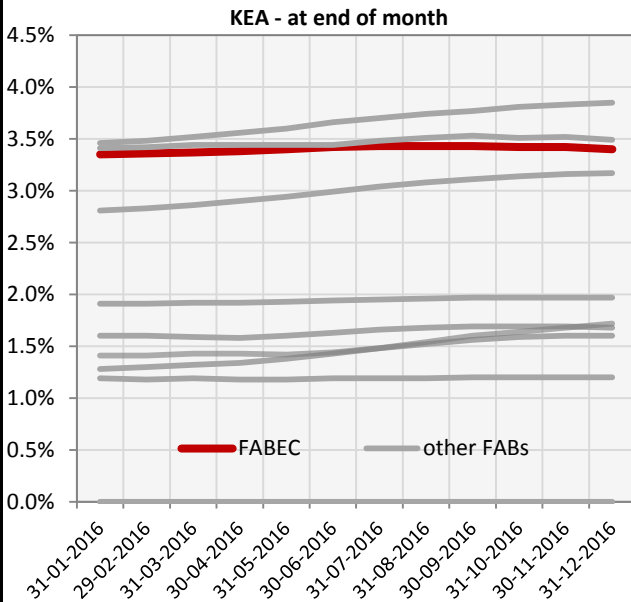
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	3.30%	3.22%	3.14%	3.05%	2.96%
Actual performance	3.34%	3.40%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	3.35%	3.36%	3.37%	3.38%	3.40%	3.42%	3.43%	3.43%	3.43%	3.42%	3.42%	3.40%
HFE	3.29%	3.31%	3.43%	3.37%	3.53%	3.71%	3.48%	3.40%	3.45%	3.35%	3.32%	3.20%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Observations

NM proposed measures: To implement FRA Project at DSNA - France and Skyguide - Switzerland. To expand cross border FRA operations with adjacent FABs - ACCs (e.g. Denmark / Sweden FAB, UK Ireland FAB). To further Improve interfaces with SW FAB, UK Ireland FAB and Blue Med FAB.

1. Overview

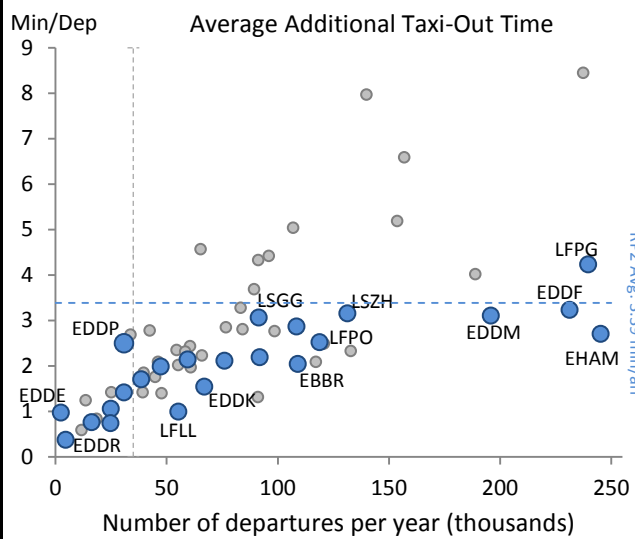
FABEC states identify a total of 88 airports as subject to RP2 monitoring, but in 2016 only 23 of them have implemented the Airport Operator Data Flow and therefore the analysis can be based only on these airports.

In terms of taxi-out time the analysed airports show in most cases additional taxi-out times below the average for airports in RP2, even for the airports within the busiest in Europe.

Regarding the additional time in terminal airspace the performance is in most cases commensurate with the level of traffic, while for the busiest airports the additional times are kept remarkably low given those levels of traffic.

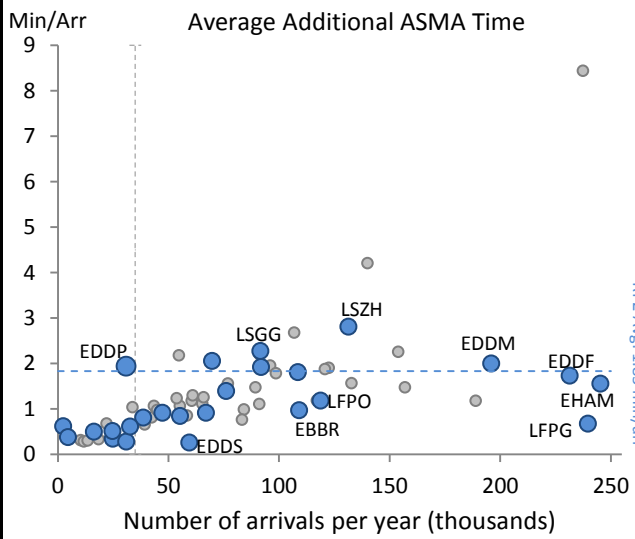
The level of implementation of the airport operator flow varies across FABEC member states. These shall encourage the timely implementation of the airport data flow to improve the level of reporting for the Environment KPA.

2. Additional Taxi-Out Time



In general terms, analysed FABEC airports up to 50000 departures per year have a linear relationship of the additional taxi-out times versus the level of traffic. However, for airports between 50000 and 150000 departures per year, FABEC airports outperform other airports in the rest of Europe, with additional taxi-out values always below the RP2 average (weighted average for airports subject to RP2). Munich, Frankfurt and especially Amsterdam, as the busiest airport in Europe, still manage to keep their additional taxi-out times below the 3.39 min/dep. of the RP2 average.

3. Additional ASMA Time



FABEC airports up to 100000 arrivals per year show additional times in the terminal area commensurate with the level of traffic with the exception of Leipzig (EDDP) and Stuttgart (EDDS), which show respectively extremely high and low values. Most of the airports in FABEC with a yearly traffic above 100000 arrivals have very low additional times for their levels of traffic, remarkably low in the case of Paris Charles de Gaulle (LFPG), well below 1 min/arr.

FABEC

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.43	0.42	0.42	0.42	0.43	
FAB Target	0.48	0.49	0.42	0.42	0.43	
Actual performance	0.69	1.07				
FABEC assessment of capacity performance						
<p>As described in the FABEC ANSP individual achievements graph presented below, the global FABEC underperformance for En route capacity has been driven in 2016 by the individual underperformance of Belgocontrol, DSNA and MUAC against their individual 2016 All causes and CRSTMP expected contribution to FABEC target values.</p> <p>Belgocontrol has generated en-route delays, mainly due to under staffing and some capacity shortage.</p> <p>Regarding DSNA, Brest, Paris, Bordeaux and Marseille ACC generated delays over their individual contribution to FABEC target 2016 values, Brest remaining the main driver for 2016 DSNA underachievement. Main reasons for those additional delays were industrial actions in France (26% of yearly All causes delays), ERATO training and implementation in Brest and Bordeaux (25% of yearly delays).</p> <p>Nevertheless 70% of CRSTMP delays are still capacity delays, mainly in Brest and Bordeaux ACC. Sector opening schedules are not always optimized consistently with traffic peak hours and week-end. Additional traffic flows in some sectors combined with remaining impact of ERATO implementation in Brest end 2015 (till April 2016) and the training of ATCOs before ERATO implementation in Bordeaux end 2016 (lower impact due to lessons learnt from Brest previous implementation and enhanced coordination with NM an Users) have been identified as drivers for additional delays in 2016. Regarding Reims, preparation work for implementation of a new ATM system (4Flight) and traffic distribution with higher demand on shortest routes and lack of predictability of demand in some sectors have been identified.</p> <p>MUAC had to cope with unforecasted changes in traffic flows and related increase of traffic in the Brussels and Deco sectors. Capacity shortage delays counted 43% of total MUAC delay in 2016 (45% in Brussels sector and 51% in Deco sector, only 13% in Hannover sector) of each total sector delays. Deco capacity shortage related delays increased from 10 548 minutes in 2015 to 152 198 in 2016.</p> <p>Reason for those changes could be the impact of the change of balance between unit rates (Germany, Belgium), the very low level of fuel price and the Ukrainian crisis having a major impact on flight planning.</p>						
Monitoring process for capacity performance						
<p>The monitoring for En Route Capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate.</p> <p>On a monthly basis and through the AFG/PMG (ANSP FABEC Group / Performance Monitoring Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the FABEC target set and reference or indicative values and on the results and analysis of the En route capacity achievement.</p> <p>In case the FABEC target set and/or the annual/reference values are threatened not to be met AFG/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at FAB, national and/or ACC level, in order to remedy the situation.</p> <p>The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the AFG/PMG, to the FABEC Council for such appropriate measures, after consultation with the AFG/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values.</p> <p>The FPC is also responsible for the management of the Capacity KPA financial incentive schemes (see section 3 of this monitoring report).</p> <p>This monitoring process is described in the FABEC FPC States Performance Process description, regularly updated.</p>						

Application of Corrective Measures for Capacity

After discussions at FABEC Finances and Performance Committee, the following corrective measures, proposed by ANSP and endorsed by FABEC States are planned to be implemented to mitigate the performance gaps experienced in 2016:

- At FABEC level

- o Considering the high levels of weather-induced delay in 2016 compared to the previous years, FABEC has decided to launch a study on long-term weather impact on ATM. The study will be carried out by MET Alliance.

- At ANSP level:

- o Belgocontrol: A capacity gap is expected in 2017-2018. The gap should be closed by 2019 if the current recruitment plan provides the expected benefits in due time. The reassessment of sector capacities following the CAPAN study, the upgrade of the CANAC2 hardware, the segregation of EBCI and EBBR flows (to mitigate the impact of the high growth of traffic on the Southwest axis), the implementation of Cooperative Traffic Management initiatives (enhanced Pre-tact, complexity assessment tool, enhancement of ATFCM procedures) as well as the enhanced Civ/Mil ASM procedures implementation and the expected impact of the FUA enhancement on the improved use of the route network are the other initiatives planned over RP2 and beyond.

- o DSNA: capacity increases are expected mainly coming from the flexible rostering. The national agreement is already validated, and the local agreements are under negotiation. If local agreements are achieved, capacity gaps should be closed for quite the whole period in the five French ACCs. The only 2 remaining capacity gaps would be Brest ACC in 2017 due to the huge increase of traffic of the past years and Reims ACC in 2019 due to system change. System changes will also bring extra capacity (ERATO in Brest and in Bordeaux mainly). ATFCM and ASM measures that have been developed (Mac, CAP, XMAN...) are also contributing to the gap closure.

- o MUAC: the current capacity gap should be closed by 2019 when the main capacity initiatives planned by MUAC will have been implemented. Among them, the FABEC FRA Step 2: H24 DCTs with military activity, the initial FUA implementation above FL365, the Cooperative Traffic Management initiatives (ATC2ATM Program, improved ATFCM procedures), the Brussels UIR 3rd layer, the FABEC ATFCM/ASM Step 2 : CDM procedures, the cross training of ATCOs, the further development of the iFMP (integrated Flow Management Position), N-VCS (New-generation Voice Communications System), RDFS (Radio Direction Finder System), the advanced tactical ATFCM measures and the stepped implementation of XMAN (with possible negative impact on capacity) are the main drivers. The potential benefit of a re-sectorisation of the DECO and HANNOVER sector groups is being evaluated. If found feasible and beneficial to the network, the actual implementation should take place in 2018. Furthermore, a study is undergoing to reduce the number of sectors open during night. A result of the study is expected in 2017. As a result of traffic volatility stemming from the changes in national route charges MUAC could still be challenged by changes in the traffic patterns resulting in higher traffic growth at Sector Group level.

Capacity Planning

Over RP2, FABEC is progressively closing the capacity gap with the required performance level to achieve the breakdown reference values. FABEC members planned the required system implementations during RP2 in order to renew ATM systems to offer higher capacity and new services, enhance quality of service and comply with interoperability regulations. Those implementations require large training phases which have an impact on operational staffing and temporary capacity shortages due to commissioning phase. Moreover the recent modifications in traffic patterns, mainly due to improvement of flight planning systems by aircraft operators, that have already impacted the capacity of some FABEC ACCs or sectors and could create additional complexity and new bottlenecks generating delays. However FABEC members committed with their respective capacity plans.

Belgocontrol's contribution is consistent with the NM reference values.

MUAC will continue to actively develop measures in order to better balance traffic among MUAC's sector groups which aims at alleviating pressure off the Brussels sectors. MUAC will continue to implement the capacity initiatives described in the NOP to achieve the reference value towards the end of RP2.

DSNA plans to be consistent with required performance towards the end of RP2 through the implementation of a 4-pillar strategy, i.e. technical modernisation (ERATO in Brest and Bordeaux, Enhanced Mode S, Datalink FOC, 4Flight in Reims-Marseille-Paris); staff management (new ATCO flexible rostering system); ATFCM / CDM (rolling summer collaborative ATFCM plan, SALTO ATFCM support tool); airspace design (optimisations, long range DCTs, Direct Routing Airspace).

LVNL plans to improve and develop FUA for TMA-C and TMA-D, insight in Departures EHAM due to A-CDM and doesn't foresee any capacity gap during the whole period.

DFS: due to the planned implementation of projects (e.g. commissioning of the new Berlin Airport, P2 system, PSS, iCAS system) in the period 2016-2018, limited ATFM delays may occur in the respective training and transition phase.

It is expected that the Average ATFM Delay en-route per Movement will be even below the reference values for the last three years of RP2.

Skyguide's contribution is consistent with the NM reference values and no capacity gap is foreseen over RP2. However cost saving measures due to the highly challenging cost efficiency target will be an impediment to deliver additional capacity. Besides, projects such as stripless will generate further temporary capacity reduction during the implementation phase.

Assessment of capacity performance

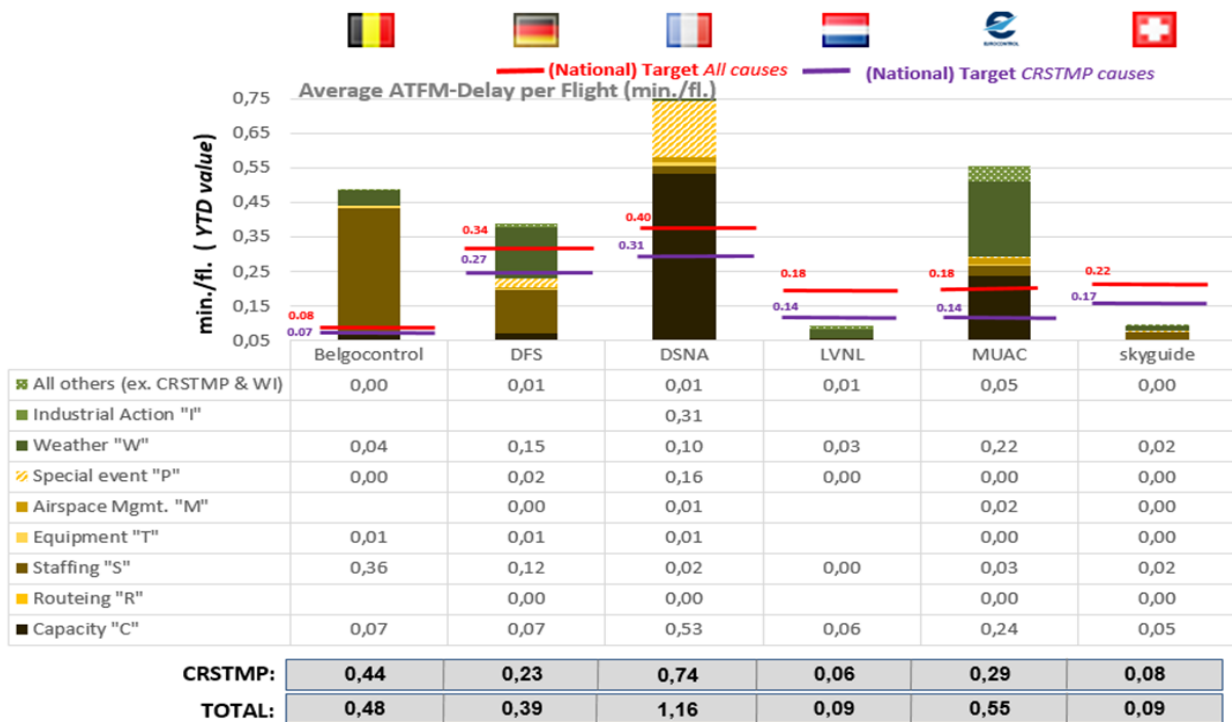
It is noted that FABEC failed to achieve their en route capacity target in 2016, following a similar result in 2015. It is noted that FABEC has decided to abandon planned additional capacity improvements since they are no longer 'feasible'. FABEC states that they are concentrating on small flight efficiency projects instead of significant capacity enhancements, even though the previous and existing capacity plans were/are inconsistent with the required level of performance. It is noted that the Network Manager highlights, using the latest capacity plans, that FABEC will not achieve the required level of performance in 2017, and will just meet the target in 2018 if there are no disruptions due to technical failure or industrial action (Delays due to industrial action in FABEC were 0.11 & 0.17 in 2015 & 2016 respectively.) It is also noted that the corrective measures listed in the annual monitoring report were not actually implemented in 2016 but are only planned to be implemented.

En route Capacity Incentive Scheme

FABEC applied a common en route incentive scheme described in section 4.1 of the FABEC RP2 performance plan dated July 2015. The incentive scheme uses the FAB targets and then applies a ratio of 78% of the FAB targets for the delay causes CRSTMP only, to give a FAB CRSTMP target. A dead-band of +/- 10% of the CRSTMP target is applied to decide if the FAB level was achieved; national / ANSP incentives are determined according to how each ANSP has contributed to the FAB target.

For the actual FABEC en-route Capacity delay data a review to proof non-CRSTMP regulations was conducted by FABEC NSAs via a data validation process within FABEC Finance and Performance Committee (FPC). Therefore, a number of non-CRSTMP regulations identified by ANSPs were subject to an analysis under the direction of the FPC (see description of the verification process in the FABEC Performance Plan). The relevant number of the regulations to be verified consisted of 2.5% of the non-CRSTMP regulations causing the highest delay as well as non-CRSTMP regulations of 5 sample days. These sample days were agreed and communicated in the 43th FPC meeting dated 25.11.2016. The relevant data, consisting of 169 regulations, was received by end of March 2017. Data provided included e.g. regulation reasons, start and end date, regulation descriptions and in-depth analysis as regards weather. The verification process was then conducted by FPC members in the month of April. In case of inconsistencies the ANSPs were informed to solve these issues whereby in case of no sufficient and comprehensible justifications, the opinion of the FPC was crucial. The process was finalized in May 2017 to be able to adjust the Capacity data before the monitoring report became due.

Result of FAB Capacity Incentive Scheme



The 2016 FABEC underachievement triggers the activation of the Financial common FABEC incentive scheme, generating a malus for 3 FABEC ANSP (Belgocontrol, DSN, MUAC). In conjunction with this incentive mechanism an internal validation process was established in order to approve non-CRSTMP regulations.

Compliance Issues Relating to FAB Capacity Incentive Scheme
The PRB noted several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report.
Update on Military dimension of the plan
No new information was provided by FABEC on how civil military coordination and cooperation is providing additional capacity.
Observations on Military dimension of the plan
It is noted that FABEC have abandoned the implementation of civil military projects that were intended to provide additional capacity.
Application of FUA
FABEC provided no new information regarding the application of FUA.
Observations of the Application of FUA
It is noted that FABEC have provided no information on progress in the application of FUA and no information on how the FAB EC authorities determine whether or not they are providing the optimum benefits for both civil and military airspace users.

1. Overview

FABEC represents the largest FAB in terms of geographic region / number of member states and the respective air navigation services at airports subject to RP2. Local variability of performance is heavily masked on the aggregated FAB level. FABEC, next to SW FAB and UK-Ireland FAB, influences the European performance significantly.

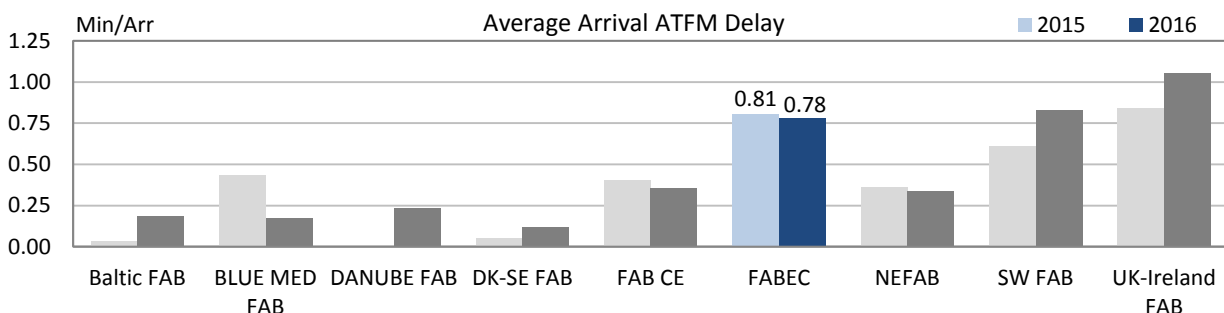
In 2016, a slight improvement of arrival ATFM delay has been observed on FABEC level (2015: 0.81 min/arr. vs 2016: 0.78 min/arr.) which ranges well above the European average of 0.67 min/arr.

Across FABEC, there is a variety of methods of establishing the national target on arrival ATFM delay and the associated incentive scheme.

Given the number of airports, there is a wide spread of the compliance to ATFM slots. Noteworthy is that with Amsterdam/Schiphol (EHAM) and Paris Charles de Gaulle (LFPG), two major European hubs show an adherence rate of under 90% which has repercussions on the network in terms of predictability.

The implementation of the Airport Operator Data Flow is not completed for all airports within FABEC. This impedes a consistent monitoring of pre-departure delay. In particular, France and the Netherlands shall encourage their identified reporting entities to comply with the requirements.

2. Arrival ATFM Delay

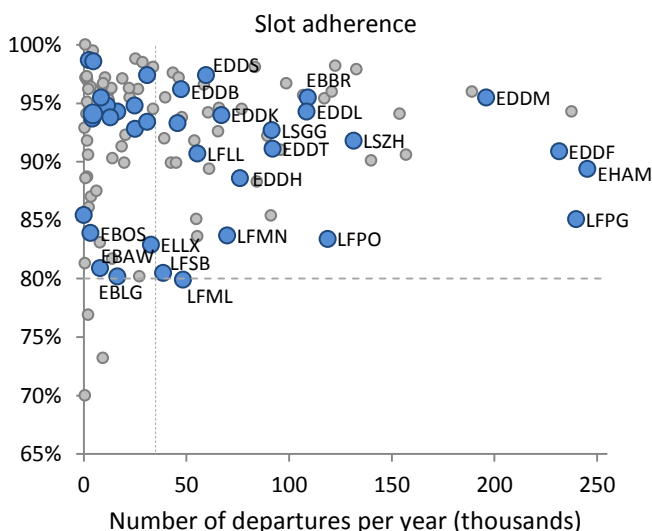


On a FAB level, the average arrival ATFM delay improved slightly in comparison with 2015 by 0.03 min/arr. (2015: 0.81 min/arr. vs 2016: 0.78 min/arr.). The achieved performance ranges well above the European average of 0.67 min/arr. in 2016. Due to the size / number of airports, FABEC performance - next to SW FAB and UK-Ireland FAB - drives the European average.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

Across FABEC, there exists a variety of methods of establishing the national target on arrival ATFM delay and the associated incentive scheme.

4. ATFM Slot Adherence



Within FABEC slot adherence varies widely amongst the airports. A variety of airports ranges below 90% of compliance with ATFM slots while the 80% margin appears as a lower margin for the weakest performing services. It is noteworthy that with Amsterdam Schiphol (EHAM) and Paris Charles de Gaulle (LFPG), two major European hubs range below 90%. Given the level of traffic, this has ramification on the predictability of European network.

5. Pre-departure Delay

Across FABEC, the implementation of the Airport Operator Data Flow varies and as such impedes a consistent monitoring of pre-departure delay for all FAB member states. The data flow has now been established for Luxembourg and Switzerland. The implementation is completed for Germany with the final airports under-going the technical validation phase (consistent reporting for 2017 onwards).

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Belgium

Version: 1.1

Date: 9 October 2017

BELGIUM

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	64	B	D	C	C	A
Belgocontrol	78	C	E	C	C	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		93%
Source of RAT data:	BCAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	15	3
Belgocontrol	Number of questions answered	
	YES	NO
Policy and its implementation	10	3
Legal/Judiciary	2	1
Occurrence reporting and Investigation	5	3
TOTAL	17	7

Observations

Only one, the safety policy and objectives, out of the four verified areas in the EoS M Component/areas of the State does not meet the 2019 EoS M target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 3 are below Level C.

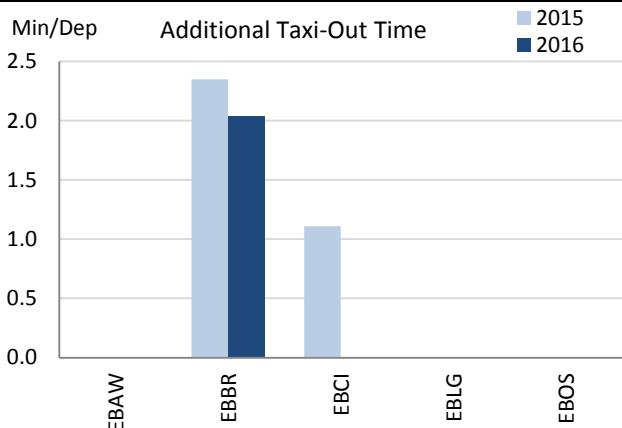
BELGIUM

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

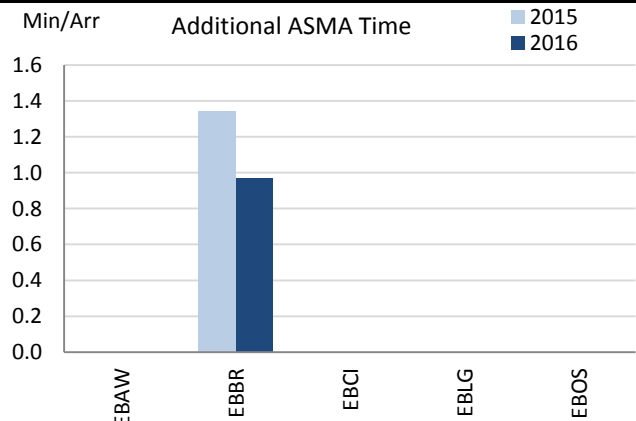
Belgium identifies 5 airports as subject to RP2 monitoring.
 In 2016, the Airport Operator Data Flow is fully established at two airports (i.e. EBBR and EBCI). The other Belgian airports are still undergoing the validation process with no apparent progress.
 Given the limited perspective, the trends for the performance in taxi-out and terminal airspace follow a similar pattern. Yearly traffic in 2016 has stayed at the same levels as 2015 for both airports, with the indicators for Brussels having improved to best in class values while in Charleroi they have maintained similar values as past year.
 Despite the events at Brussels airport in March 2016, reducing by 35% the traffic in March and April, no dramatic effect can be observed in any of the indicators for those months.

2. Additional Taxi-Out Time



The additional taxi-out times for both EBBR and EBCI are kept amongst the lowest given their levels of traffic.
 These values have also decreased in 2016 with respect to 2015, and maintained quite constant throughout the year, including winter months.
 In Brussels (EBBR), despite the works that took place on RWY 01/19 during the months of August-September, the additional times in that period are the lowest in the year.

3. Additional ASMA Time



Additional times in the terminal airspace have also drastically decreased in EBBR by approx. 30% in 2016. This decrease is especially significant in summer, bringing the yearly average for Brussels to less than 1 min/arr.
 Both EBBR and EBCI show best in class values for additional ASMA times given their traffic levels.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Antwerp	EBAW	n/a	n/a				n/a	n/a			
Brussels	EBBR	2.35	2.04				1.34	0.97			
Charleroi	EBCI	1.11	0.00				0.00	0.00			
Liège	EBLG	n/a	n/a				n/a	n/a			
Ostend-Bruges	EBOS	n/a	n/a				n/a	n/a			

BELGIUM

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	N/A	N/A	N/A	N/A	N/A	Because there are two ANSPs in Belgium, Belgocontrol and EUROCONTROL (MUAC), Belgium did not set a national target. Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.50	0.72				

National capacity incentive scheme

Incentive scheme targets:
 The capacity delay target at FAB level was set at an average of 0.38 min/flight for CRSTMP causes ATFM delays.
 Belgocontrol’s broken down target was set at 0.07 min/flight.
 EUROCONTROL (MUAC) broken down target was set at 0.14 min/flight

2016 achievement (As reported by FABEC)
 - FABEC: 0.67 min/flight for CRSTMP ATFM delays
 - Belgocontrol: 0.44 min/flight for CRSTMP delays
 - EUROCONTROL (MUAC): 0.29 min/flight for CRSTMP delays

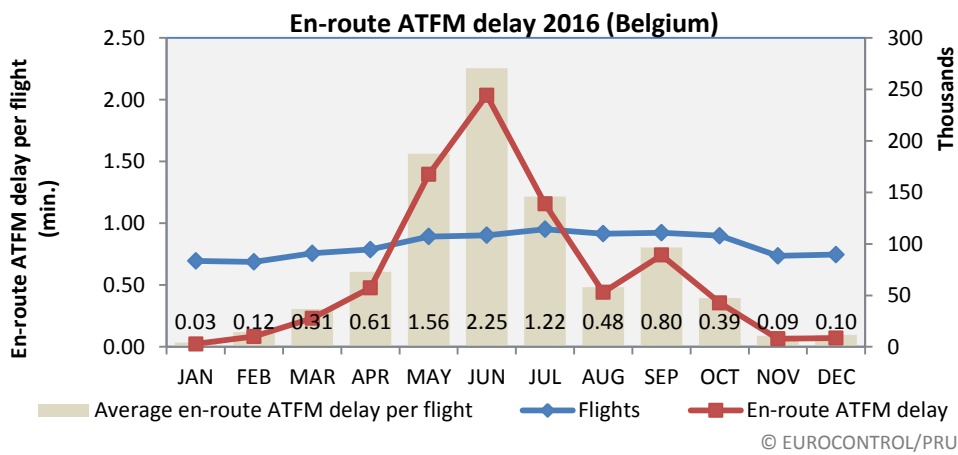
BONUS / MALUS
 The percentage of malus for Belgocontrol was -0.5% of total ANSP’s revenue in 2015, which equates to a penalty of €506,874.19.
 The percentage of malus for EUROCONTROL (MUAC) was -0.5% of total ANSP’s revenue in 2015, which equates to a penalty of €794,361.44.

NOTE: The penalty for EUROCONTROL (MUAC) is applicable because of the performance over the four MUAC States (Belgium, Luxembourg, Germany and the Netherlands). The breakdown of the MUAC penalty per State is: Belgium €248,800.36; Luxembourg €7,694.98; Germany €377,536.96 and the Netherlands €160,329.15.

Compliance issues relating to national capacity incentive scheme

The PRB noted several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report

Observations regarding national capacity performance



En-route ATFM delay per flight (Belgium)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.17	0.24	0.20	0.04	0.03	0.08	0.02	0.50	0.72

The deterioration of en route capacity performance in Belgium in 2016 (0,72 minutes per flight) in comparison with 2015 (0,50 minutes per flight) is noted. It is noted that traffic increased from 2015 levels by approximately 2% whereas ATFM delays rose by 44% year on year. It is noted that the Network Manager highlights the probability of capacity shortfalls in both MUAC and Brussels ACC in 2017 and 2018 based on the current capacity plans (NOP 2017-2021). It is noted that FABEC report the cancellation of capacity enhancement projects despite repeated warnings that capacity plans, and deployment of available capacity, in the FABEC airspace were not consistent with the required level of performance.

Planning and Effective Use of CDRs

Such data is not available at national level (or FAB) level. CURA (civil use of released airspace) and PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Monitoring) tools are currently not designed to provide rate of planning of conditional routes (CDRs) and effective use of CDRs. Indeed, only the Special Use of Airspace (SUA) can be evaluated. Belgium is therefore currently evaluating SUA aggregated indicators matching IR (EC) 390/2013 to replace CDR-based indicators.

Observations on Planning and effective Use of CDRs

It is noted that Belgium, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 70%.
 The ratio of time that airspace, surplus to requirement, was released with more than 3 hours’ notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 10%
 Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

Belgium reports that airspace is very often released at tactical level (ASM level 3), however tactical releases are yet not always recorded in ASM systems and also not always notified to the Network Manager. No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

BELGIUM

Monitoring of Airports Contribution to CAPACITY for 2016

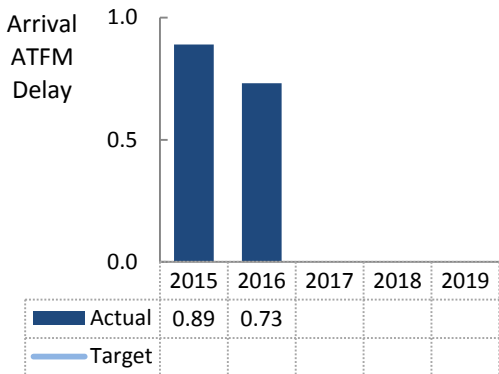
1. Overview

In Belgium, ANS at a total of 5 airports are subject to RP2. Local targets have been established for a subset of the airports as a method for establishing a national target on all airports was not available. In their monitoring report Belgium accounts only for contributions by EBBR and EBLG. The following is based on the available data for all 5 airports subject to monitoring.

Arrival ATFM delay (all causes/ 5 airports) improved in 2016 (2015: 0.89 min/arr. vs 2016: 0.73 min/arr). The reported level of arrival ATFM delay at EBBR and EBLG is consistent.

The Airport Operator Data Flow is not yet established for Antwerp (EBAW), Liege (EBLG), and Ostend-Bruges (EBOS).

2. Arrival ATFM Delay



Belgium has not established a national target on arrival ATFM delay covering all causes. The national target is currently set on CRSTMP causes with breakdown for two airports EBBR and EBLG

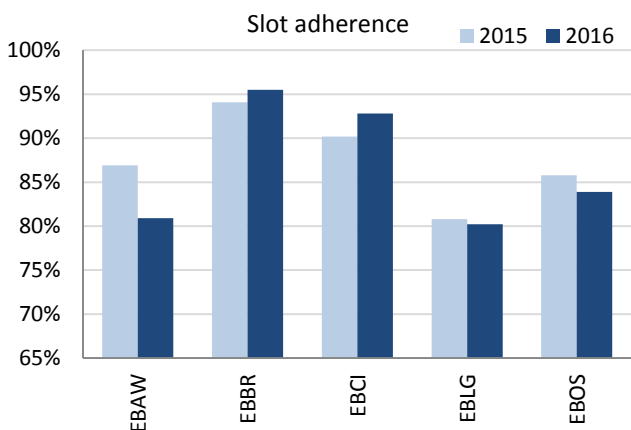
Arrival ATFM delay (all causes) reduced at Brussels (EBBR) significantly in 2016, i.e. 0.93 min/arr. (2015: 1.26 min/arr.), however, this improvement is off-set by the increase in arrival ATFM delay observed in Charleroi (EBCI) and Liege (EBLG). arrival ATFM performance at EBCI jumped to 0.47 min/arr. in 2016. EBLG approximately doubled to 0.33 min/arr.

Belgium monitors, for target and incentive purposes, CRSTMP values. This national average for all airports deteriorated from 0.05 min/arr. in 2015 to 0.16 min/arr. in 2016.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Belgium has established local targets based on CRSTMP causes for Brussels (EBBR) and Liege (EBLG). The observed arrival ATFM delay performance at EBBR in 2016 ranges within the deadband, while performance at EBLG does not meet the established local target. Accordingly, a penalty for the 2016 performance observed at EBLG is applied for BELGOCONTROL.

4. ATFM Slot Adherence



Performance in terms of slot adherence at Brussels (EBBR) and Charleroi (EBCI) improved in 2016 in comparison to 2015, while the performance at Liege (EBLG) remained almost constant.

The compliance with ATFM slots deteriorated slightly at Ostend-Bruges (EBOS; 2015: 85.8% vs 2016: 83.9%), while at Antwerp (EBAW) a significant lower performance (2015: 86.9% vs 2016: 80.9%) was observed. The level of traffic observed at these airports and the number of regulations would suggest a higher compliance with the slot window.

5. Pre-departure Delay

The monitoring of pre-departure delay is dependent on the establishment of the Airport Operator Data Flow. For the time being, this flow is only established for Brussels (EBBR) and Charleroi (EBCI). The technical preparation for the establishment of the data flow with the other airports is on-going.

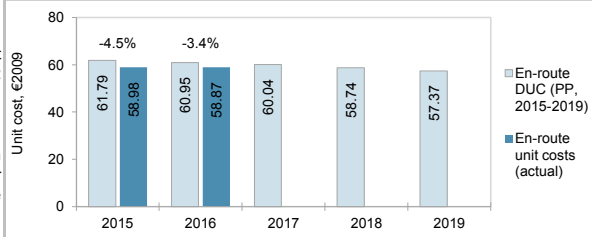
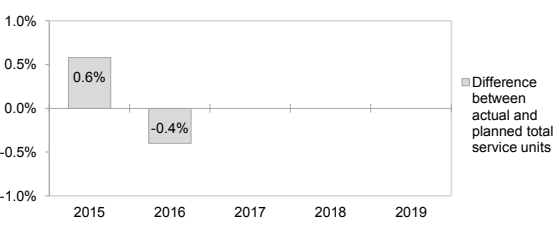
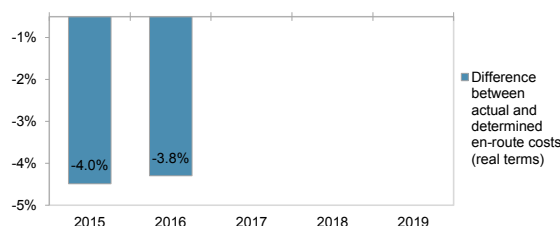
Though the overall share of pre-departure delay increased in 2016, EBCI accrues a negligible share. The performance at Brussels shows an improvement by 0.23 min/dep. in 2016 versus 2015. Nonetheless there is a high share of unreported delay which requires further validation.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Antwerp	EBAW	0.00	0.00				86.9%	80.9%				n/a	n/a			
Brussels	EBBR	1.26	0.93				94.1%	95.5%				0.66	0.43			
Charleroi	EBCI	0.00	0.47				90.2%	92.8%				0.07	0.16			
Liège	EBLG	0.14	0.33				80.8%	80.2%				n/a	n/a			
Ostend-Bruges	EBOS	0.00	0.00				85.8%	83.9%				n/a	n/a			

BELGIUM & LUXEMBOURG: En-route charging zone

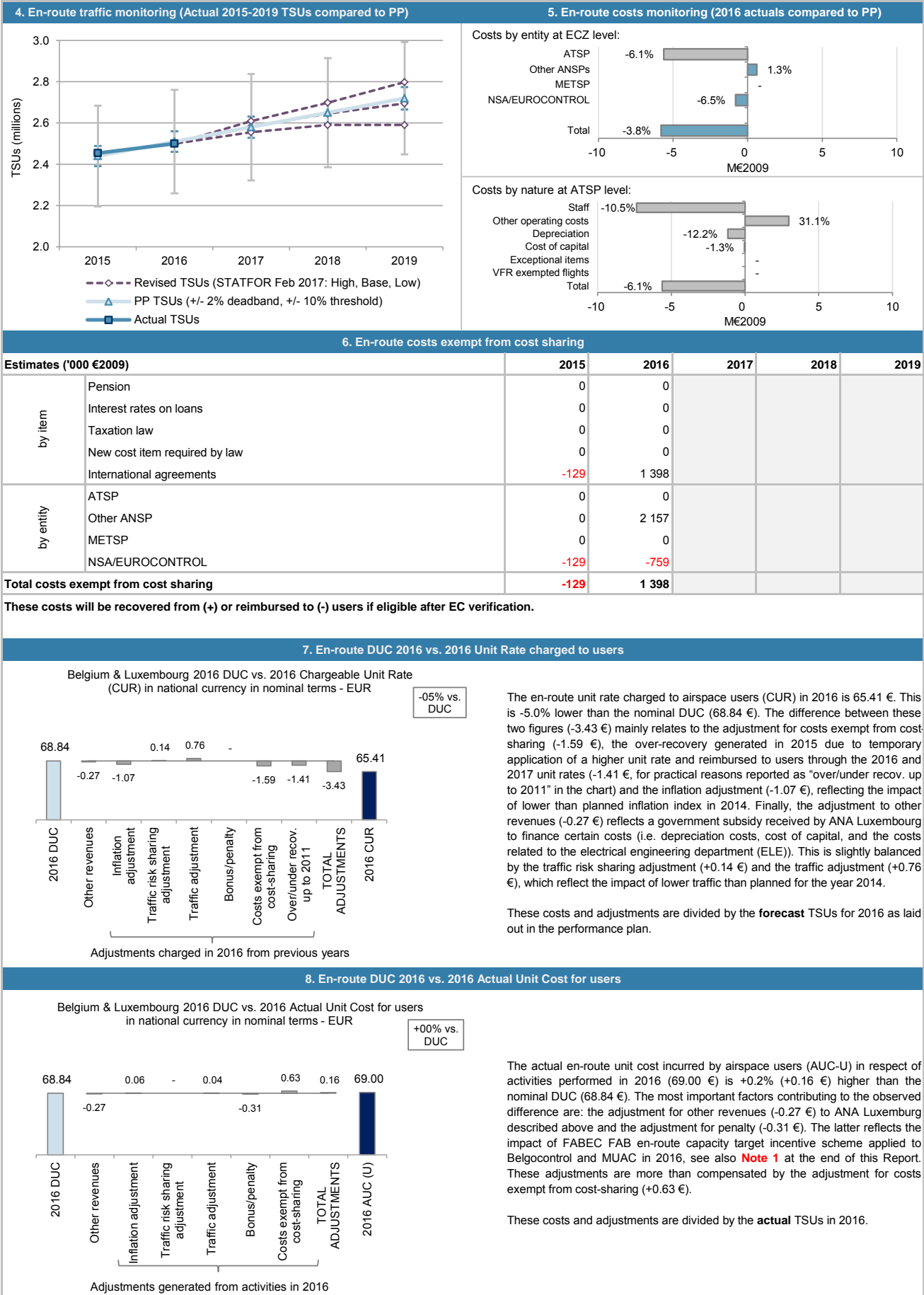
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Belgium & Luxembourg ECZ represents 02% of the SES en-route ANS determined costs in 2016						
· ATSP: Belgocontrol						
· FAB: FABEC						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Belgium & Luxembourg: Data from RP2 PP (EC Decision 2017/553 of 22 March 2017)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		168 277 718	172 792 013	177 260 922	180 556 020	183 521 461
Inflation %		1.1%	1.2%	1.3%	1.4%	1.4%
Inflation index (100 in 2009)		111.6	112.9	114.4	116.0	117.6
Real en-route costs (EUR2009)		150 757 603	152 984 440	154 897 964	155 652 698	156 055 562
Total en-route Service Units		2 440 000	2 510 000	2 580 000	2 650 000	2 720 000
Real en-route unit cost per Service Unit (EUR2009)		61.79	60.95	60.04	58.74	57.37
Belgium & Luxembourg: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		160 753 284	166 383 298			
Inflation %		0.6%	1.8%			
Inflation index (100 in 2009)		111.1	113.1			
Real en-route costs (EUR2009)		144 755 264	147 175 819			
Total en-route Service Units		2 454 178	2 499 996			
Real en-route unit cost per Service Unit (EUR2009)		58.98	58.87			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-7 524 434	-6 408 715			
	in %	-4.5%	-3.7%			
Inflation %	in p.p.	-0.5 p.p.	0.6 p.p.			
	in p.p.	-0.6 p.p.	0.1 p.p.			
Real en-route costs (EUR2009)	in value	-6 002 339	-5 808 621			
	in %	-4.0%	-3.8%			
Total en-route Service Units	in value	14 178	-10 004			
	in %	0.6%	-0.4%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-2.80	-2.08			
	in %	-4.5%	-3.4%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (58.87 €2009) is -3.4% lower than planned in the PP (60.95 €2009). This difference results from the combination of slightly lower than planned TSUs (-0.4%) and lower than planned en-route costs in real terms (-3.8%, or -5.8 M€2009).						
En-route service units						
The difference between actual and planned TSUs (-0.4%) falls inside the ±2% dead band foreseen in the traffic risk-sharing mechanism. The resulting loss of en-route revenues (-0.3 M€2009) is therefore fully borne by the main ATSP.						
According to STATFOR February 2017 base TSU scenario, the en-route TSUs for Belgium & Luxembourg charging zone are expected to remain in line with the PP and within the ±2% dead-band foreseen in the traffic risk sharing mechanism for the remainder of RP2.						
En-route costs						
In nominal terms, actual en-route costs are -3.7% (-6.4 M€) lower than planned. Since the actual inflation index is slightly above the plan (+0.1 p.p.), actual en-route costs are -3.8% below plans when expressed in real terms.						
The lower than planned en-route costs in real terms are primarily driven by lower costs for Belgocontrol (-6.1%, or -5.6 M€2009) and the NSA/EUROCONTROL (-6.5%, or -0.8 M€2009), while the costs for the other ANSPs are higher than planned (+1.3%, or +0.6 M€2009). A detailed analysis at the level of the main ATSP (Belgocontrol) is provided in Box 12.						
For MUAC, the higher than planned actual en-route costs in real terms (+1.5%, or +0.6 M€2009) reflect a combination of higher staff costs (+4.0%, or +1.3 M€2009), lower other operating costs (-4.0%, or -0.2 M€2009), lower depreciation costs (-14.3%, or -0.4 M€2009) and lower cost of capital (-43.2%, or -0.1 M€2009).						
Costs exempt from cost-sharing are reported for a total amount of +1.4 M€2009 comprising unforeseen changes in costs or revenues stemming from international agreements. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.						



BELGIUM & LUXEMBOURG: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



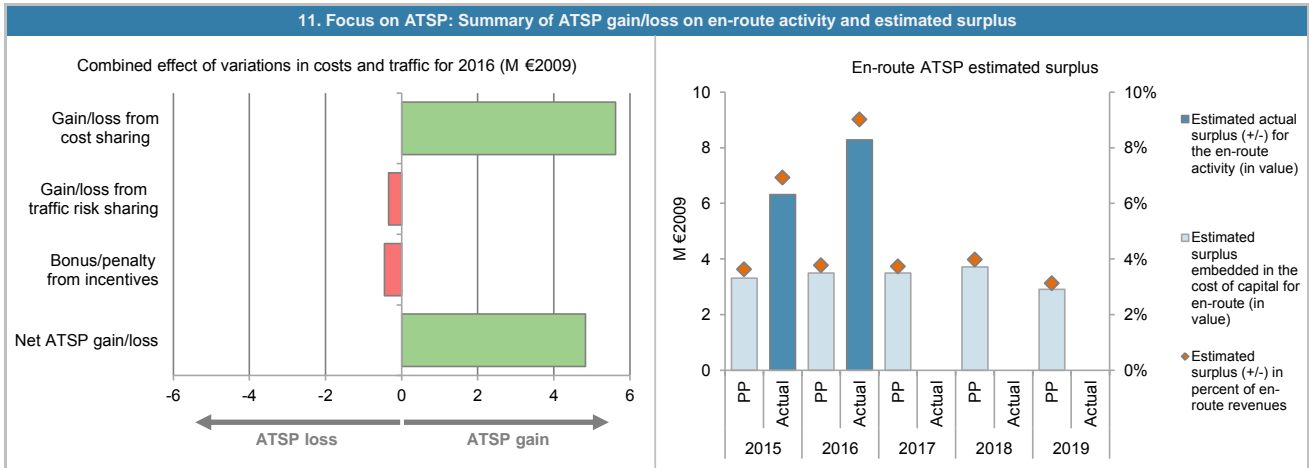
BELGIUM: En-route ATSP (Belgocontrol)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	91 079	92 659			
Actual costs for the ATSP	88 088	87 035			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	2 992	5 624			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	2 992	5 624			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	0.6%	-0.4%			
Determined costs for the ATSP (PP) - based on actual inflation	84 792	85 734			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	493	-342			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	-456	-448			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	3 028	4 834			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	78 793	77 836	72 977	72 740	73 449
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	78 793	77 836	72 977	72 740	73 449
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	3 310	3 496	3 502	3 719	2 908
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	4.2%	4.5%	4.8%	5.1%	4.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	3 310	3 496	3 502	3 719	2 908
Overall estimated surplus (+/-) for the en-route activity	3 310	3 496	3 502	3 719	2 908
Revenue/costs for the en-route activity	91 079	92 659	93 716	93 306	92 857
Estimated surplus (+/-) in percent of en-route revenues	3.6%	3.8%	3.7%	4.0%	3.1%
Estimated ex-ante RoE pre-tax rate (in %)	4.2%	4.5%	4.8%	5.1%	4.0%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	78 273	76 819			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	78 273	76 819			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	3 288	3 450			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	4.2%	4.5%			
Estimated surplus embedded in the cost of capital for en-route (in value)	3 288	3 450			
Net ATSP gain(+)/loss(-) on en-route activity	3 028	4 834			
Overall estimated surplus (+/-) for the en-route activity	6 317	8 284			
Revenue/costs for the en-route activity	91 116	91 869			
Estimated surplus (+/-) in percent of en-route revenues	6.9%	9.0%			
Estimated ex-post RoE pre-tax rate (in %)	8.1%	10.8%			

BELGIUM: En-route ATSP (Belgocontrol)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 Belgocontrol en-route costs vs. PP

In 2016, Belgocontrol actual en-route costs are -6.1% (-5.6 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 en-route reporting tables, this results from a combination of:

- lower staff costs (-10.5%, or -7.4 M€2009), mainly driven by delays in the recruitment process;
- much higher other operating costs (+31.1%, or +3.0 M€2009), primarily justified by increases in costs for temporary reinforcement of staff;
- lower depreciation costs (-12.2%, or -1.2 M€2009), resulting from delays in the investment programme. Based on the information provided in the FABEC FAB Monitoring Report 2016, the actual capex for 2016, in real terms (€2009), is much lower (-75.7%) than planned in PP; and,
- slightly lower cost of capital (-1.3%, or -0.05 M€2009) as a result of the slightly lower than planned asset base (-1.3%, or -1.0 M€2009).

Belgocontrol net gain/loss on en-route activity in 2016

As shown in box 9, Belgocontrol generated a net gain of +4.8 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +5.6 M€2009 arising from the cost-sharing mechanism;
- a loss of -0.3 M€2009 arising from the traffic risk-sharing mechanism; and,
- a loss of -0.4 M€2009 (or -0.5 M€ in nominal terms), corresponding to a penalty for Belgocontrol as part of the en-route capacity target incentive mechanism. This amount corresponds to 0.5% of Belgocontrol en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this penalty in the chargeable cost base will be examined by the European Commission. See also **Note 1** at the end of this Report.

Belgocontrol overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+4.8 M€2009) and the surplus embedded in the actual cost of capital (+3.5 M€2009) amounts to +8.3 M€2009 (9.0% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 10.8%, which is significantly higher than the 4.5% planned in the PP for 2016.

BELGIUM ANTWERPEN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Belgium Antwerpen TCZ represents 0.4% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		No	
· ATSP:	Belgocontrol	· Airports with fewer than 70,000 IFRs ATMs:		1	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	1,	of which:	· Airports with more than 225,000 IFRs ATMs:	0	
2. Terminal DUC monitoring at Charging Zone level					
Belgium Antwerpen: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	5 402 889	5 506 774	5 653 055	5 832 191	6 229 428
Inflation %	1.1%	1.2%	1.3%	1.4%	1.4%
Inflation index (100 in 2009)	111.6	112.9	114.4	116.0	117.6
Real terminal costs (EUR2009)	4 840 371	4 875 519	4 939 875	5 027 781	5 297 129
Total terminal Service Units	3 646	3 947	3 976	4 021	4 068
Real terminal unit cost per Service Unit (EUR2009)	1 327.71	1 235.18	1 242.50	1 250.51	1 302.00
Belgium Antwerpen: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	4 696 338	5 252 264			
Inflation %	0.6%	1.8%			
Inflation index (100 in 2009)	111.1	113.1			
Real terminal costs (EUR2009)	4 228 962	4 645 937			
Total terminal Service Units	4 426	4 371			
Real terminal unit cost per Service Unit (EUR2009)	955.43	1 062.99			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -706 552	in value -254 510			
	in % -13.1%	in % -4.6%			
Inflation %	in p.p. -0.5 p.p.	in p.p. 0.6 p.p.			
Inflation index (100 in 2009)	in p.p. -0.6 p.p.	in p.p. 0.1 p.p.			
Real terminal costs (EUR2009)	in value -611 409	in value -229 582			
	in % -12.6%	in % -4.7%			
Total terminal Service Units	in value 781	in value 423			
	in % 21.4%	in % 10.7%			
Real terminal unit cost per Service Unit (EUR2009)	in value -372.28	in value -172.19			
	in % -28.0%	in % -13.9%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Belgium Antwerpen Terminal Charging Zone (TCZ) comprising Antwerpen airport (EBAW). In this TCZ the financing of terminal ANS activities in 2016 is fully subsidised by the State or regional authorities, no unit rate is charged to the airspace users. See also Note 2 at the end of this Report.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (1 062.99 €2009) is -13.9% lower than planned in the PP (1 235.18 €2009). This difference results from the combination of higher than planned TNSUs (+10.7%) and lower than planned terminal costs in real terms (-4.7%, or -0.2 M€2009).</p> <p>Terminal service units The actual TNSUs are +10.7% higher than planned. The number of TNSUs planned for the 2017-2019 period is significantly above the STATFOR February 2017 base TNSU scenario. However, it is noted, that STATFOR forecast only includes IFR flights while, as indicated in the additional information to June 2017 terminal reporting tables, from 2014 onwards Belgium includes TNSUs from both IFR and VFR flights in the calculation and reporting.</p> <p>Terminal costs In nominal terms, actual terminal costs are -4.6% (-0.3 M€) lower than planned. Since the actual inflation index is slightly above the plan (+0.1 p.p.), actual terminal costs are -4.7% below plans when expressed in real terms.</p> <p>The lower than planned terminal costs in real terms are driven by lower than planned costs for Belgocontrol (-4.9%, or -0.2 M€2009), whereas NSA costs are slightly higher than planned (+7.2%, or +0.005 M€2009). A detailed analysis at ATSP level is provided in Box 9.</p> <p>No costs exempt from cost sharing are reported for Antwerpen TCZ.</p>					

BELGIUM ANTWERPEN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-4.9%
Other ANSPs	-
METSP	-
NSA	7.2%
Total	-4.7%

Costs by nature at ATSP level:

Staff	-7.0%
Other operating costs	42.0%
Depreciation	-30.7%
Cost of capital	-5.1%
Exceptional items	-
VFR exempted flights	-
Total	-4.9%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Analysis not applicable, terminal ANS in Antwerpen TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Analysis not applicable, terminal ANS in Antwerpen TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

9. Focus on terminal ATSP: General conclusions *See Note 2

Actual 2016 Belgocontrol terminal costs in the TCZ vs. PP

Belgocontrol actual terminal costs in Antwerpen TCZ are -4.9% (-0.2 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

- lower staff costs (-7.0%, or -0.3 M€2009), mainly driven by delays in the recruitment process;
- higher other operating costs (+42.0%, or +0.1 M€2009), primarily justified by increases in costs for temporary reinforcement of staff;
- lower depreciation costs (-30.7%, or -0.1 M€2009), resulting from delays in the investment programme; and,
- a slightly lower cost of capital (-5.1%, or -0.004 M€2009).

No description of the main drivers for the deviation between actual and determined costs is provided individually for each TCZ in the FABEC FAB 2016 Monitoring Report or in the additional information to June 2017 terminal reporting tables. A consolidated description for the variation in costs for Belgocontrol, aggregating all five TCZs, is reported in the additional information to June 2017 terminal reporting tables.

BELGIUM BRUSSELS: Terminal charging zone

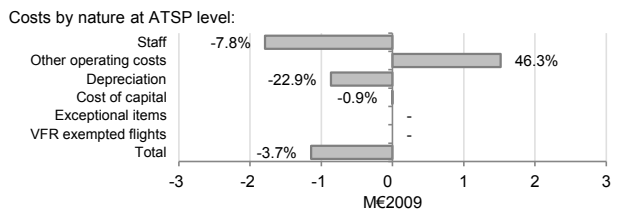
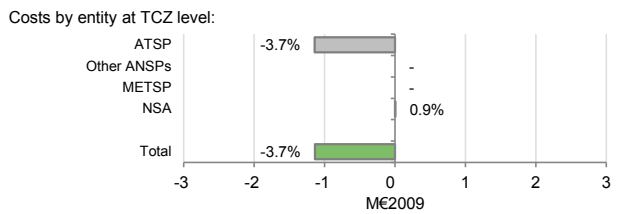
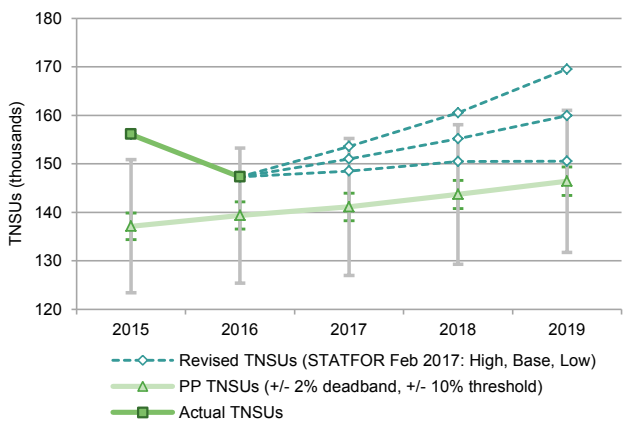
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Belgium Brussels TCZ represents 2.8% of the SES terminal ANS determined costs in 2016	· Is this TCZ applying traffic risk sharing?				No
· ATSP: Belgocontrol	· Airports with fewer than 70,000 IFRs ATMs:				0
· National currency: EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:				1
· Number of airports in charging zone in 2016: 1, of which:	· Airports with more than 225,000 IFRs ATMs:				0
2. Terminal DUC monitoring at Charging Zone level					
Belgium Brussels: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	34 001 220	35 029 505	35 994 691	36 596 159	36 991 971
Inflation %	1.12%	1.2%	1.3%	1.4%	1.4%
Inflation index (100 in 2009)	111.6	112.9	114.4	116.0	117.6
Real terminal costs (EUR2009)	30 461 207	31 013 987	31 453 658	31 548 606	31 455 737
Total terminal Service Units	137 140	139 355	141 121	143 691	146 408
Real terminal unit cost per Service Unit (EUR2009)	222.12	222.55	222.88	219.56	214.85
Belgium Brussels: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	32 935 259	33 777 305			
Inflation %	0.60%	1.8%			
Inflation index (100 in 2009)	111.1	113.1			
Real terminal costs (EUR2009)	29 657 572	29 878 014			
Total terminal Service Units	156 085	147 297			
Real terminal unit cost per Service Unit (EUR2009)	190.01	202.84			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -1 065 961	in value -1 252 200			
	in % -3.1%	in % -3.6%			
Inflation %	in p.p. -0.5 p.p.	in p.p. 0.6 p.p.			
Inflation index (100 in 2009)	in p.p. -0.6 p.p.	in p.p. 0.1 p.p.			
Real terminal costs (EUR2009)	in value -803 635	in value -1 135 973			
	in % -2.6%	in % -3.7%			
Total terminal Service Units	in value 18 945	in value 7 942			
	in % 13.8%	in % 5.7%			
Real terminal unit cost per Service Unit (EUR2009)	in value -32.11	in value -19.71			
	in % -14.5%	in % -8.9%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Belgium Brussels Terminal Charging Zone (TCZ) which comprises Brussels airport (EBBR). In this TCZ the costs for terminal ANS activities in 2016 were partly (25%) subsidised by the State or regional authorities. See also Note 2 at the end of this Report.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (202.84 €2009) is -8.9% lower than planned in the PP (222.55 €2009). This difference results from the combination of higher than planned TNSUs (+5.7%) and lower than planned terminal costs in real terms (-3.7%, or -1.1 M€2009).</p> <p>Terminal service units Traffic risk sharing does not apply in Brussels TCZ. The difference between actual and planned TNSUs (+5.7%) generates a gain of terminal revenues (+1.8 M€2009) which will be carried-over and reimbursed to the airspace users and to the state. This is done in proportion to the respective shares in financing of the costs by user charges and other revenues from the State</p> <p>It is noted that the TNSUs included in the RP2 PP are expected to remain below STATFOR February 2017 <u>base</u> TNSU scenario for the rest of RP2 (2017-2019). However, it is noted, that STATFOR forecast only includes IFR flights while, as indicated in the additional information to June 2017 terminal reporting tables, from 2014 onwards Belgium includes TNSUs from both IFR and VFR flights in the calculation and reporting.</p> <p>Terminal costs In nominal terms, actual terminal costs are -3.6% (-1.3 M€) lower than planned. Since the actual inflation index is slightly above the plan (+0.1 p.p.), actual terminal costs are -3.7% below plans when expressed in real terms.</p> <p>The lower than planned terminal costs in real terms are driven by lower than planned costs for Belgocontrol (-3.7%, or -1.1 M€2009), while the costs for the NSA are slightly higher than planned (+0.9% or +0.004 M€2009). A detailed analysis at ATSP level is provided in Box 9.</p> <p>No costs exempt from cost sharing are reported for Brussels TCZ.</p>					

BELGIUM BRUSSELS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) **5. Terminal costs monitoring (2016 actuals compared to PP)**



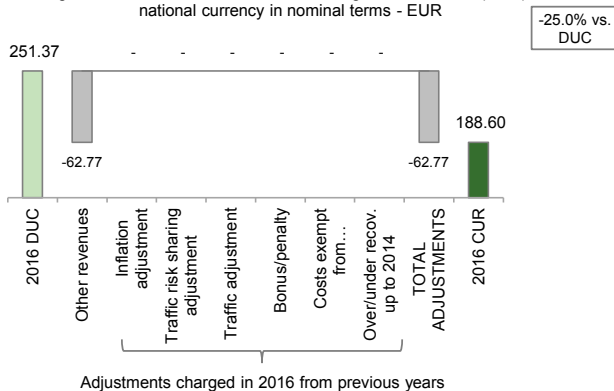
6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Belgium Brussels 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR



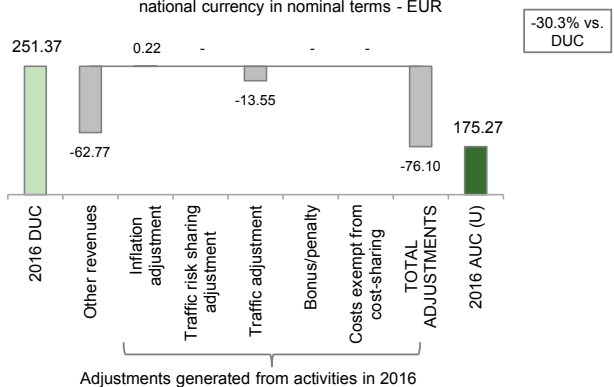
The terminal unit rate charged to airspace users (CUR) in 2016 is 188.60 €. This is -25.0% lower than the nominal DUC (251.37 €). The difference between these two figures (-62.77 €) relates to other revenues, which, according to the additional information provided in the June 2017 terminal reporting tables, reflects the fact that 25% of the terminal costs in Brussels TCZ are subsidised by the State or regional authorities.

As specified in the additional information to June 2017 terminal reporting tables, a modulation of terminal charges is applied in Belgium Brussels TCZ.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Belgium Brussels 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (175.27 €) is -30.3% lower than the nominal DUC (251.37 €). The factors contributing to the observed difference (-76.10 €) are: deduction of other revenues (-62.77 €), see box 7 above for more details), the traffic adjustment (-13.55 €) and the inflation adjustment (+0.22 €). The traffic adjustment reflects the additional gain of revenues due to higher than planned TNSUs in 2016, which will be reimbursed to airspace users and to the state in 2018. The inflation adjustment corresponds to the impact of a slightly higher than planned inflation index for the year 2016, and the forthcoming recovery from airspace users and from the State in 2018.

As specified in the additional information to June 2017 terminal reporting tables, a modulation of terminal charges is applied in Belgium Brussels TCZ.

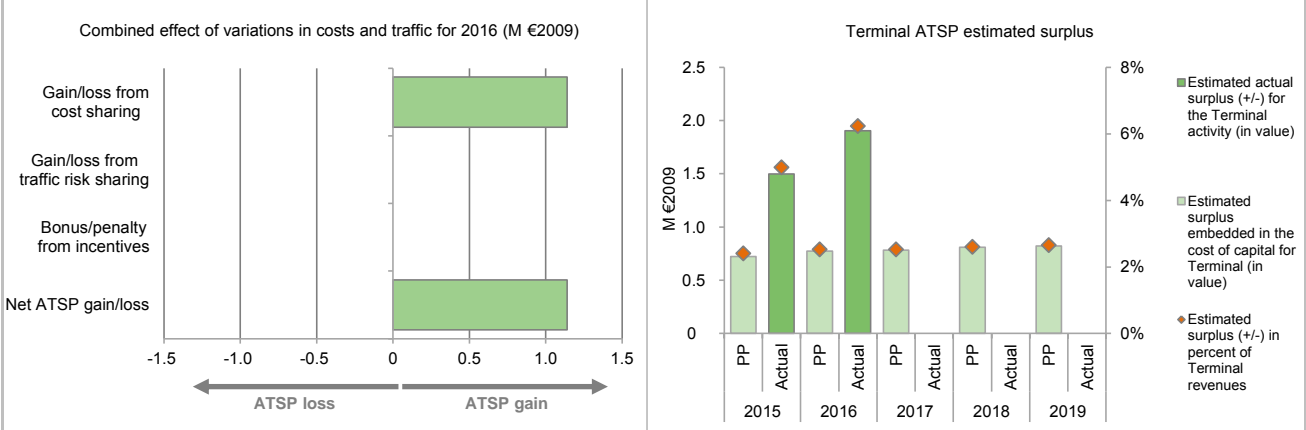
These costs and adjustments are divided by the **actual** TNSUs in 2016.

Terminal ATSP (Belgocontrol) Belgium Brussels

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	30 031	30 581			
Actual costs for the ATSP	29 253	29 442			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	778	1 140			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	778	1 140			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
	Not Applicable				
	Not Applicable				
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	778	1 140			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	27 816	27 594	26 078	26 092	26 508
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	27 816	27 594	26 078	26 092	26 508
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	723	773	782	809	822
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	2.6%	2.8%	3.0%	3.1%	3.1%
Estimated surplus embedded in the cost of capital for terminal (in value)	723	773	782	809	822
Overall estimated surplus (+/-) for the terminal activity	723	773	782	809	822
Revenue/costs for the terminal activity	30 031	30 581	31 019	31 109	31 014
Estimated surplus (+/-) in percent of terminal revenues	2.4%	2.5%	2.5%	2.6%	2.6%
Estimated ex-ante RoE pre-tax rate (in %)	2.6%	2.8%	3.0%	3.1%	3.1%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	27 734	27 340			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	27 734	27 340			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	721	766			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	2.6%	2.8%			
Estimated surplus embedded in the cost of capital for terminal (in value)	721	766			
Net ATSP gain(+)/loss(-) on terminal activity	778	1 140			
Overall estimated surplus (+/-) for the terminal activity	1 499	1 905			
Revenue/costs for the terminal activity	30 031	30 581			
Estimated surplus (+/-) in percent of terminal revenues	5.0%	6.2%			
Estimated ex-post RoE pre-tax rate (in %)	5.4%	7.0%			

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 Belgocontrol terminal costs in the TCZ vs. PP

Belgocontrol actual terminal costs in the TCZ are -3.7% (-1.1 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

- lower staff costs (-7.8%, or -1.8 M€2009), mainly driven by delays in the recruitment process;
- higher other operating costs (+46.3%, or +1.5 M€2009), primarily justified by increases in costs for temporary reinforcement of staff;
- lower depreciation costs (-22.9%, or -0.9 M€2009), resulting from delays in the investment programme; and,
- slightly lower cost of capital (-0.9%, or -0.007 M€2009).

No description of the main drivers for the deviation between actual and determined costs is provided individually for each TCZ in the FABEC FAB 2016 Monitoring Report or in the additional information to June 2017 terminal reporting tables. A consolidated description for the variation in costs for Belgocontrol, aggregating all five TCZs, is reported in the additional information to June 2017 terminal reporting tables.

Belgocontrol 2016 net gain/loss on terminal activity in the TCZ

As shown in Box 9, Belgocontrol generated a net gain of +1.1 M€2009 in 2016 from the terminal activity in the Brussels TCZ as a result of the cost sharing mechanism.

Belgocontrol 2016 overall estimated surplus for the terminal activity in the TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in the TCZ mentioned above (+1.1 M€2009) and the surplus embedded in the cost of capital (+0.8 M€2009) amounts to +1.9 M€2009 (6.2% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 7.0%, which is significantly higher than the 2.8% planned in the PP.

BELGIUM CHARLEROI: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Belgium Charleroi TCZ represents 0.6% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		No		
· ATSP:	Belgocontrol	} Airports with fewer than 70,000 IFRs ATMs: 1 Airports with between 70,000 and 225,000 IFRs ATMs: 0 Airports with more than 225,000 IFRs ATMs: 0				
· National currency:	EUR					
· Number of airports in charging zone in 2016:	1, of which:					
2. Terminal DUC monitoring at Charging Zone level						
Belgium Charleroi: Data from RP2 Performance Plan		2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)		7 475 595	8 108 922	8 546 450	8 819 991	8 607 741
Inflation %		1.1%	1.2%	1.3%	1.4%	1.4%
Inflation index (100 in 2009)		111.6	112.9	114.4	116.0	117.6
Real terminal costs (EUR2009)		6 697 279	7 179 377	7 468 243	7 603 488	7 319 503
Total terminal Service Units		31 090	34 839	35 739	36 776	37 820
Real terminal unit cost per Service Unit (EUR2009)		215.41	206.07	208.96	206.75	193.53
Belgium Charleroi: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)		3 773 554	6 672 780			
Inflation %		0.6%	1.8%			
Inflation index (100 in 2009)		111.1	113.1			
Real terminal costs (EUR2009)		3 398 013	5 902 467			
Total terminal Service Units		29 192	30 005			
Real terminal unit cost per Service Unit (EUR2009)		116.40	196.71			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value	-3 702 041	-1 436 142			
	in %	-49.5%	-17.7%			
Inflation %	in p.p.	-0.5 p.p.	0.6 p.p.			
	in p.p.	-0.6 p.p.	0.1 p.p.			
Real terminal costs (EUR2009)	in value	-3 299 266	-1 276 910			
	in %	-49.3%	-17.8%			
Total terminal Service Units	in value	-1 898	-4 834			
	in %	-6.1%	-13.9%			
Real terminal unit cost per Service Unit (EUR2009)	in value	-99.01	-9.36			
	in %	-46.0%	-4.5%			
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Belgium Charleroi Terminal Charging Zone (TCZ) comprising Charleroi airport (EBCI). In this TCZ the financing of terminal ANS activities in 2016 is fully subsidised by the State or regional authorities, no unit rate is charged to the airspace users. See also Note 2 at the end of this Report.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (196.71 €2009) is -4.5% lower than planned in the PP (206.07 €2009). This difference results from the combination of lower than planned TNSUs (-13.9%) and significantly lower than planned terminal costs in real terms (-17.8%, or -1.3 M€2009).</p> <p>Terminal service units The actual TNSUs are -17.8% lower than planned. The number of TNSUs planned for the 2017-2019 period is well above the STATFOR February 2017 <u>base</u> TNSU scenario. However, it is noted, that STATFOR forecast only includes IFR flights while, as indicated in the additional information to June 2017 terminal reporting tables, from 2014 onwards Belgium includes TNSUs from both IFR and VFR flights in the calculation and reporting.</p> <p>Terminal costs In nominal terms, actual terminal costs are -17.7% (-1.4 M€) lower than planned. Since the actual inflation index is slightly above the plan (+0.1 p.p.), actual terminal costs are -17.8% below plans when expressed in real terms.</p> <p>The lower than planned terminal costs in real terms are driven by lower than planned costs across all entities: Belgocontrol (-17.7%, or -1.3 M€2009) and the NSA (-26.8%, or -0.03 M€2009). A detailed analysis at ATSP level is provided in Box 9.</p> <p>No costs exempt from cost sharing are reported for Charleroi TCZ.</p>						

BELGIUM CHARLEROI: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-17.7%
Other ANSPs	-
METSP	-
NSA	-26.8%
Total	-17.8%

Costs by nature at ATSP level:

Staff	-8.5%
Other operating costs	-26.4%
Depreciation	-70.8%
Cost of capital	-4.6%
Exceptional items	-
VFR exempted flights	-
Total	-17.7%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Analysis not applicable, terminal ANS in Charleroi TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Analysis not applicable, terminal ANS in Charleroi TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

9. Focus on terminal ATSP: General conclusions *See Note 2

Actual 2016 Belgocontrol terminal costs in the TCZ vs. PP

Belgocontrol actual terminal costs in Charleroi TCZ are -17.7% (-1.3 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

- lower staff costs (-8.5%, or -0.5 M€2009), mainly driven by delays in the recruitment process;
- lower other operating costs (-26.4%, or -0.1 M€2009), driven by a combination factors: the reversal of a provision and the increases in costs for temporary reinforcement of staff;
- much lower depreciation costs (-70.8%, or -0.6 M€2009), resulting from delays in the investment programme; and,
- a slightly lower cost of capital (-4.6%, or -0.004 M€2009).

No description of the main drivers for the deviation between actual and determined costs is provided individually for each TCZ in the FABEC FAB 2016 Monitoring Report or in the additional information to June 2017 terminal reporting tables. A consolidated description for the variation in costs for Belgocontrol, aggregating all five TCZs, is reported in the additional information to June 2017 terminal reporting tables.

BELGIUM LIEGE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services																													
· Belgium Liege TCZ represents 0.6% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No																							
· ATSP: Belgocontrol					· Airports with fewer than 70,000 IFRs ATMs:	1																							
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs:	0																							
· Number of airports in charging zone in 2016: 1, of which:					· Airports with more than 225,000 IFRs ATMs:	0																							
2. Terminal DUC monitoring at Charging Zone level																													
Belgium Liege: Data from RP2 Performance Plan																													
	2015D	2016D	2017D	2018D	2019D																								
Terminal costs (nominal EUR)	7 177 907	7 486 635	7 872 765	8 073 493	7 955 035																								
Inflation %	1.1%	1.2%	1.3%	1.4%	1.4%																								
Inflation index (100 in 2009)	111.6	112.9	114.4	116.0	117.6																								
Real terminal costs (EUR2009)	6 430 584	6 628 424	6 879 549	6 959 950	6 764 481																								
Total terminal Service Units	26 760	25 496	26 508	27 602	28 662																								
Real terminal unit cost per Service Unit (EUR2009)	240.31	259.98	259.53	252.16	236.00																								
Belgium Liege: Actual data from Reporting Tables																													
	2015A	2016A	2017A	2018A	2019A																								
Terminal costs (nominal EUR)	6 824 573	7 156 500																											
Inflation %	0.6%	1.8%																											
Inflation index (100 in 2009)	111.1	113.1																											
Real terminal costs (EUR2009)	6 145 398	6 330 345																											
Total terminal Service Units	28 322	29 517																											
Real terminal unit cost per Service Unit (EUR2009)	216.99	214.46																											
Difference between Actuals and Planned																													
	2015	2016	2017	2018	2019																								
Terminal costs (nominal EUR)	in value -353 334	in value -330 135																											
	in % -4.9%	in % -4.4%																											
Inflation %	in p.p. -0.5 p.p.	in p.p. 0.6 p.p.																											
Inflation index (100 in 2009)	in p.p. -0.6 p.p.	in p.p. 0.1 p.p.																											
Real terminal costs (EUR2009)	in value -285 186	in value -298 078																											
	in % -4.4%	in % -4.5%																											
Total terminal Service Units	in value 1 562	in value 4 022																											
	in % 5.8%	in % 15.8%																											
Real terminal unit cost per Service Unit (EUR2009)	in value -23.32	in value -45.52																											
	in % -9.7%	in % -17.5%																											
3. Focus on terminal at State/Charging Zone level																													
<p>This analysis focuses on Belgium Liège Terminal Charging Zone (TCZ) comprising Liège airport (EBLG). In this TCZ the financing of terminal ANS activities in 2016 is fully subsidised by the State or regional authorities, no unit rate is charged to the airspace users. See also Note 2 at the end of this Report.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (214.46 €2009) is -17.5% lower than planned in the PP (259.98 €2009). This difference results from the combination of higher than planned TNSUs (+15.8%) and lower than planned terminal costs in real terms (-4.5%, or -0.3 M€2009).</p> <p>Terminal service units The actual TNSUs are +15.8% higher than planned. The number of TNSUs planned for the 2017-2019 period is well below the STATFOR February 2017 <u>base</u> TNSU scenario. However, it is noted, that STATFOR forecast only includes IFR flights while, as indicated in the additional information to June 2017 terminal reporting tables, from 2014 onwards Belgium includes TNSUs from both IFR and VFR flights in the calculation and reporting.</p> <p>Terminal costs In nominal terms, actual terminal costs are -4.4% (-0.3 M€) lower than planned. Since the actual inflation index is in slightly above the plan (+0.1 p.p.), actual terminal costs are -4.5% below plans when expressed in real terms.</p> <p>The lower than planned terminal costs in real terms are driven by lower than planned costs across all entities: Belgocontrol (-4.1%, or -0.3 M€2009) and the NSA (-37.3%, or -0.03 M€2009). A detailed analysis at ATSP level is provided in Box 9.</p> <p>No costs exempt from cost sharing are reported for Liège TCZ.</p>																													
<table border="1"> <caption>Difference between actual and determined terminal costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-4.4%</td> </tr> <tr> <td>2016</td> <td>-4.5%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	-4.4%	2016	-4.5%																		
Year	Difference (%)																												
2015	-4.4%																												
2016	-4.5%																												
<table border="1"> <caption>Difference between actual and planned terminal service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>5.8%</td> </tr> <tr> <td>2016</td> <td>15.8%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	5.8%	2016	15.8%																		
Year	Difference (%)																												
2015	5.8%																												
2016	15.8%																												
<table border="1"> <caption>Terminal DUC (PP, 2015-2019) vs Terminal unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>Terminal DUC (PP, €2009)</th> <th>Terminal unit costs (actual, €2009)</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>240.31</td> <td>216.99</td> <td>-9.7%</td> </tr> <tr> <td>2016</td> <td>259.98</td> <td>214.46</td> <td>-17.5%</td> </tr> <tr> <td>2017</td> <td>259.53</td> <td></td> <td></td> </tr> <tr> <td>2018</td> <td>252.16</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td>236.00</td> <td></td> <td></td> </tr> </tbody> </table>						Year	Terminal DUC (PP, €2009)	Terminal unit costs (actual, €2009)	Difference (%)	2015	240.31	216.99	-9.7%	2016	259.98	214.46	-17.5%	2017	259.53			2018	252.16			2019	236.00		
Year	Terminal DUC (PP, €2009)	Terminal unit costs (actual, €2009)	Difference (%)																										
2015	240.31	216.99	-9.7%																										
2016	259.98	214.46	-17.5%																										
2017	259.53																												
2018	252.16																												
2019	236.00																												

BELGIUM LIEGE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-4.1%
Other ANSPs	-
METSP	-
NSA	-37.3%
Total	-4.5%

Costs by nature at ATSP level:

Staff	-5.1%
Other operating costs	32.3%
Depreciation	-38.1%
Cost of capital	-4.7%
Exceptional items	-
VFR exempted flights	-
Total	-4.1%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Analysis not applicable, terminal ANS in Liège TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Analysis not applicable, terminal ANS in Liège TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

9. Focus on terminal ATSP: General conclusions *See Note 2

Actual 2016 Belgocontrol terminal costs in the TCZ vs. PP

Belgocontrol actual terminal costs in Liège TCZ are -4.1% (-0.3 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

- lower staff costs (-5.1%, or -0.3 M€2009), mainly driven by delays in the recruitment process;
- higher other operating costs (+32.3%, or +0.2 M€2009), primarily justified by increases in costs for temporary reinforcement of staff;
- lower depreciation costs (-38.1%, or -0.1 M€2009), resulting from delays in the investment programme; and,
- slightly lower cost of capital (-4.7%, or -0.003 M€2009).

No description of the main drivers for the deviation between actual and determined costs is provided individually for each TCZ in the FABEC FAB 2016 Monitoring Report or in the additional information to June 2017 terminal reporting tables. A consolidated description for the variation in costs for Belgocontrol, aggregating all five TCZs, is reported in the additional information to June 2017 terminal reporting tables.

It is noted that according to the FABEC FAB 2016 Monitoring Report, a penalty of 19 '000 €2009 (or 22 '000 € in nominal terms) is reported for Belgocontrol in 2016 for failing to achieve the local terminal capacity target in Liège TCZ. However, since the terminal ANS activity in this TCZ is fully subsidised by the State or regional authorities, this penalty will have no impact on the airspace users.

BELGIUM OOSTENDE-BRUGGE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services																							
Belgium Oostende-Brugge TCZ represents 0.2% of the SES terminal ANS determined costs in			Is this TCZ applying traffic risk sharing?		No																		
ATSP:	Belgocontrol		Airports with fewer than 70,000 IFRs ATMs:	1																			
National currency:	EUR		Airports with between 70,000 and 225,000 IFRs ATMs:	0																			
Number of airports in charging zone in 2016:	1, of which:		Airports with more than 225,000 IFRs ATMs:	0																			
2. Terminal DUC monitoring at Charging Zone level																							
Belgium Oostende-Brugge: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Terminal costs (nominal EUR)	2 321 852	2 410 573	2 573 002	2 579 116	2 591 757																		
Inflation %	1.1%	1.2%	1.3%	1.4%	1.4%																		
Inflation index (100 in 2009)	111.6	112.9	114.4	116.0	117.6																		
Real terminal costs (EUR2009)	2 080 114	2 134 243	2 248 396	2 223 390	2 203 873																		
Total terminal Service Units	4 635	6 057	6 204	6 459	6 621																		
Real terminal unit costs per Service Unit (EUR2009)	448.80	352.35	362.44	344.24	332.84																		
Belgium Oostende-Brugge: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Terminal costs (nominal EUR)	2 146 088	2 326 728																					
Inflation %	0.6%	1.8%																					
Inflation index (100 in 2009)	111.1	113.1																					
Real terminal costs (EUR2009)	1 932 511	2 058 128																					
Total terminal Service Units	3 838	4 883																					
Real terminal unit cost per Service Unit (EUR2009)	503.57	421.50																					
Difference between Actuals and Planned																							
	2015	2016	2017	2018	2019																		
Terminal costs (nominal EUR)	in value -175 764	in value -83 845																					
	in % -7.6%	in % -3.5%																					
Inflation %	in p.p. -0.5 p.p.	in p.p. 0.6 p.p.																					
Inflation index (100 in 2009)	in p.p. -0.6 p.p.	in p.p. 0.1 p.p.																					
Real terminal costs (EUR2009)	in value -147 603	in value -76 115																					
	in % -7.1%	in % -3.6%																					
Total terminal Service Units	in value -797	in value -1 174																					
	in % -17.2%	in % -19.4%																					
Real terminal unit cost per Service Unit (EUR2009)	in value 54.77	in value 69.15																					
	in % 12.2%	in % 19.6%																					
3. Focus on terminal at State/Charging Zone level																							
<p>This analysis focuses on Belgium Oostende-Brugge Terminal Charging Zone (TCZ) comprising Oostende-Brugge airport (EBOS). In this TCZ the financing of terminal ANS activities in 2016 is fully subsidised by the State or regional authorities, no unit rate is charged to the airspace users. See also Note 2 at the end of this Report.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (421.50 €2009) is +19.6% higher than planned in the PP (352.35 €2009). This difference results from the combination of significantly lower than planned TNSUs (-19.4%) and lower than planned terminal costs in real terms (-3.6%, or -0.08 M€2009).</p> <p>In terms of corrective measures, the FABEC FAB 2016 Monitoring Report indicates that the "underlying reason for the higher actual unit cost, is the actual traffic is 19,4% lower than the planned traffic in the performance scheme (based upon STATFOR low growth scenario Feb 2014). The terminal activities are exempted from traffic risk sharing and the costs are not charged to the users."</p> <p>Terminal service units The actual TNSUs are -19.4% lower than planned. The number of TNSUs planned for the 2017-2019 period is significantly above the STATFOR February 2017 base TNSU scenario. However, it is noted, that STATFOR forecast only includes IFR flights while, as indicated in the additional information to June 2017 terminal reporting tables, from 2014 onwards Belgium includes TNSUs from both IFR and VFR flights in the calculation and reporting.</p> <p>Terminal costs In nominal terms, actual terminal costs are -3.5% (-0.08 M€) lower than planned. Since the actual inflation index is slightly above the plan (+0.1 p.p.), actual terminal costs are -3.6% below plans when expressed in real terms.</p> <p>The lower than planned terminal costs in real terms are mainly driven by lower than planned costs for Belgocontrol (-3.7%, or -0.1 M€2009), while the costs for the NSA are slightly higher than planned (+4.8% or +0.001 M€2009). A detailed analysis at ATSP level is provided in Box 9.</p> <p>No costs exempt from cost sharing are reported for Oostende-Brugge TCZ.</p>																							
<table border="1"> <caption>Difference between actual and determined terminal costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-7.1%</td> </tr> <tr> <td>2016</td> <td>-3.6%</td> </tr> <tr> <td>2017</td> <td></td> </tr> <tr> <td>2018</td> <td></td> </tr> <tr> <td>2019</td> <td></td> </tr> </tbody> </table>						Year	Difference (%)	2015	-7.1%	2016	-3.6%	2017		2018		2019							
Year	Difference (%)																						
2015	-7.1%																						
2016	-3.6%																						
2017																							
2018																							
2019																							
<table border="1"> <caption>Difference between actual and planned terminal service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-17.2%</td> </tr> <tr> <td>2016</td> <td>-19.4%</td> </tr> <tr> <td>2017</td> <td></td> </tr> <tr> <td>2018</td> <td></td> </tr> <tr> <td>2019</td> <td></td> </tr> </tbody> </table>						Year	Difference (%)	2015	-17.2%	2016	-19.4%	2017		2018		2019							
Year	Difference (%)																						
2015	-17.2%																						
2016	-19.4%																						
2017																							
2018																							
2019																							
<table border="1"> <caption>Terminal DUC (PP, 2015-2019) and Terminal unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>Terminal DUC (PP, €2009)</th> <th>Terminal unit costs (actual, €2009)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>448.80</td> <td>503.57</td> </tr> <tr> <td>2016</td> <td>352.35</td> <td>421.50</td> </tr> <tr> <td>2017</td> <td>362.44</td> <td></td> </tr> <tr> <td>2018</td> <td>344.24</td> <td></td> </tr> <tr> <td>2019</td> <td>332.84</td> <td></td> </tr> </tbody> </table>						Year	Terminal DUC (PP, €2009)	Terminal unit costs (actual, €2009)	2015	448.80	503.57	2016	352.35	421.50	2017	362.44		2018	344.24		2019	332.84	
Year	Terminal DUC (PP, €2009)	Terminal unit costs (actual, €2009)																					
2015	448.80	503.57																					
2016	352.35	421.50																					
2017	362.44																						
2018	344.24																						
2019	332.84																						

BELGIUM OOSTENDE-BRUGGE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

Legend:
 - -◇- - Revised TNSUs (STATFOR Feb 2017: High, Base, Low)
 —△— PP TNSUs (+/- 2% deadband, +/- 10% threshold)
 —■— Actual TNSUs

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-3.7%
Other ANSPs	-
METSP	-
NSA	4.8%
Total	-3.6%

Costs by nature at ATSP level:

Staff	-5.4%
Other operating costs	32.6%
Depreciation	-16.5%
Cost of capital	-6.6%
Exceptional items	-
VFR exempted flights	-
Total	-3.7%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Analysis not applicable, terminal ANS in Oostende-Brugge TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Analysis not applicable, terminal ANS in Oostende-Brugge TCZ was free of charge for the airspace users since terminal ANS costs were 100% subsidised by the State or regional authorities in 2016. See also **Note 2** at the end of this Report.

9. Focus on terminal ATSP: General conclusions *See Note 2

Actual 2016 Belgocontrol terminal costs in the TCZ vs. PP

Belgocontrol actual terminal costs in Oostende-Brugge TCZ are -3.7% (-0.1 M€2009) lower, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

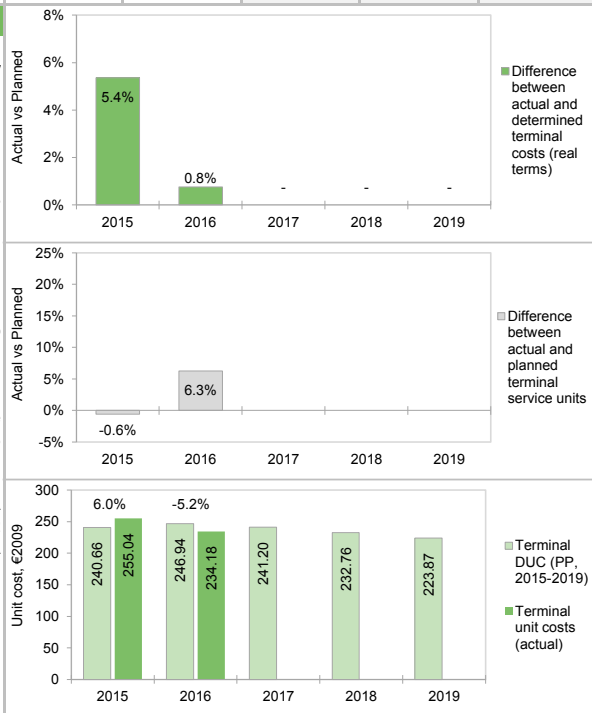
- lower staff costs (-5.4%, or -0.09 M€2009), mainly driven by delays in the recruitment process;
- higher other operating costs (+32.6%, or +0.06 M€2009), primarily justified by increases in costs for temporary reinforcement of staff;
- lower depreciation costs (-16.5%, or -0.05 M€2009), resulting from delays in the investment programme; and,
- a slightly lower cost of capital (-6.6%, or -0.002 M€2009).

No description of the main drivers for the deviation between actual and determined costs is provided individually for each TCZ in the FABEC FAB 2016 Monitoring Report or in the additional information to June 2017 terminal reporting tables. A consolidated description for the variation in costs for Belgocontrol, aggregating all five TCZs, is reported in the additional information to June 2017 terminal reporting tables.

LUXEMBOURG: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

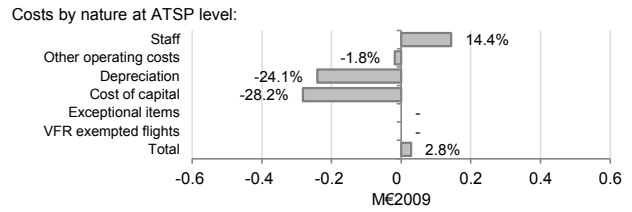
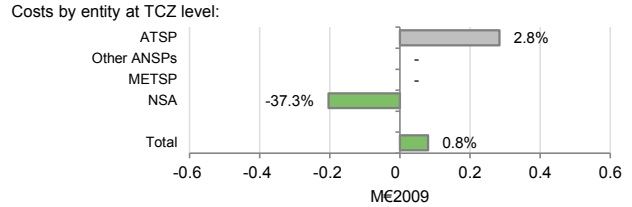
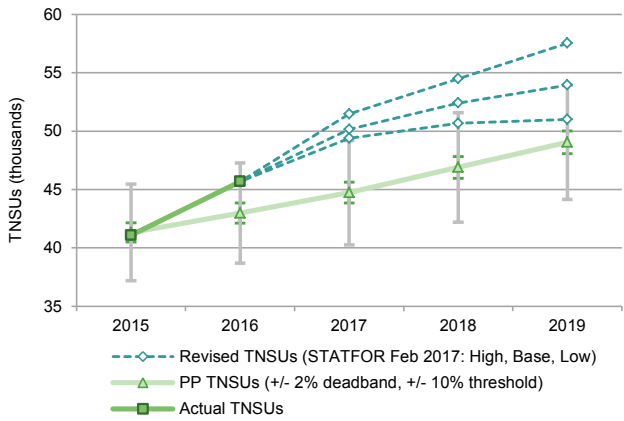
1. Contextual economic information: terminal air navigation services						
· Luxembourg TCZ represents 1.0% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No
· ATSP: ANA LUX					· Airports with fewer than 70,000 IFRs ATMs:	1
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs:	0
· Number of airports in charging zone in 2016: 1, of which:					· Airports with more than 225,000 IFRs ATMs:	0
2. Terminal DUC monitoring at Charging Zone level						
Luxembourg: Data from RP2 Performance Plan						
	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal EUR)	11 377 701	12 361 275	12 794 627	13 192 688	13 524 467	
Inflation %	1.8%	1.8%	1.8%	1.9%	1.9%	
Inflation index (100 in 2009)	114.4	116.4	118.6	120.9	123.2	
Real terminal costs (EUR2009)	9 944 465	10 615 918	10 789 343	10 915 761	10 979 796	
Total terminal Service Units	41 322	42 989	44 732	46 898	49 046	
Real terminal unit cost per Service Unit (EUR2009)	240.66	246.94	241.20	232.76	223.87	
Luxembourg: Actual data from Reporting Tables						
	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal EUR)	11 782 917	12 028 446				
Inflation %	0.1%	0.0%				
Inflation index (100 in 2009)	112.5	112.5				
Real terminal costs (EUR2009)	10 478 064	10 696 404				
Total terminal Service Units	41 083	45 676				
Real terminal unit cost per Service Unit (EUR2009)	255.04	234.18				
Difference between Actuals and Planned						
	2015	2016	2017	2018	2019	
Terminal costs (nominal EUR)	in value 405 215	-332 828				
	in % 3.6%	-2.7%				
Inflation %	in p.p. -1.7 p.p.	-1.8 p.p.				
Inflation index (100 in 2009)	in p.p. -2.0 p.p.	-4.0 p.p.				
Real terminal costs (EUR2009)	in value 533 600	80 486				
	in % 5.4%	0.8%				
Total terminal Service Units	in value -239	2 687				
	in % -0.6%	6.3%				
Real terminal unit cost per Service Unit (EUR2009)	in value 14.39	-12.77				
	in % 6.0%	-5.2%				
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Luxembourg Terminal Charging Zone (TCZ) comprising Luxembourg airport (ELLX). In this TCZ the costs for terminal ANS activities in 2016 were partly subsidised by the State or regional authorities.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (234.18 €2009) is -5.2% lower than planned in the PP (246.94 €2009). This difference results from the combination of higher than planned TNSUs (+6.3%) and slightly higher than planned terminal costs in real terms (+0.8%, or +0.08 M€2009), although in nominal terms the costs are lower than planned (see below).</p> <p>Terminal service units Traffic risk sharing does not apply in Luxembourg TCZ. The difference between actual and planned TNSUs (+6.3%) will be carried-over and reimbursed to the airspace users in 2018. When considering the STATFOR forecast (February 2017), it appears that traffic is likely to remain significantly higher than planned throughout RP2 for all scenarios.</p> <p>Terminal costs In nominal terms, actual terminal costs are -2.7% (-0.3 M€) lower than planned. However, since the actual inflation index is also lower than planned (-4.0 p.p.), actual en-route costs are +0.8% (+0.08 M€2009) higher than planned when expressed in real terms.</p> <p>The higher than planned terminal costs in real terms are primarily driven by higher costs for ANA (+2.8%, or +0.3 M€2009), while the costs for the NSA are lower than planned (-37.3%, or -0.2 M€2009). It is however noted that, due to the lower than planned inflation index, actual ANA costs are lower than planned when expressed in nominal terms (-0.7%, or -0.08 M€). A detailed analysis at ATSP level is provided in Box 12.</p> <p>No costs exempt from cost sharing are reported for Luxembourg TCZ.</p>						



LUXEMBOURG: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)



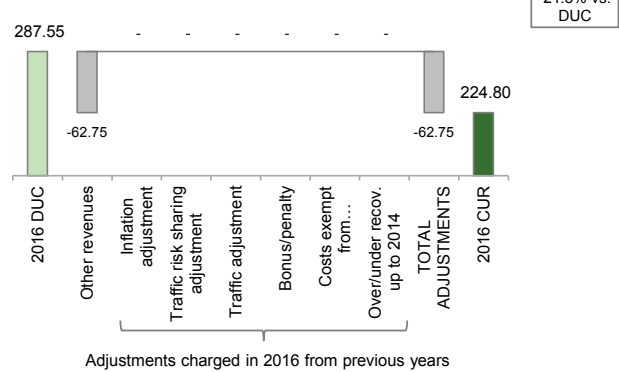
6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 unit rate charged to users

Luxembourg 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR



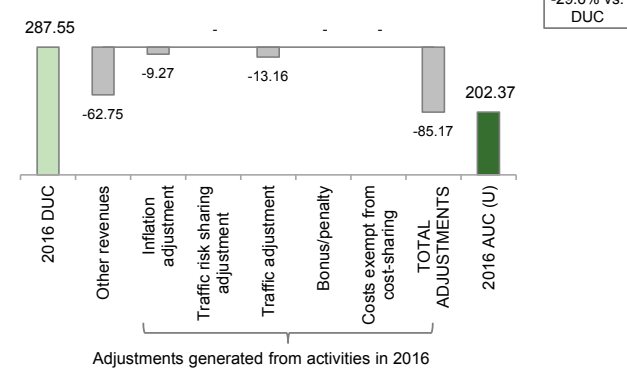
The terminal unit rate charged to airspace users (CUR) in 2016 is 224.80 €. This is -22% lower than the nominal DUC (287.55 €). The difference between these two figures (-62.75 €) relates to other revenues, which, according to the additional information provided in the June 2017 terminal reporting tables, reflects the subsidy granted by the State for terminal ANS activity in 2016.

As specified in the additional information to June 2017 terminal reporting tables, a modulation of terminal charges across user categories is applied in Luxembourg TCZ. See also Note 3 at the end of this Report.

These costs and adjustments are divided by the forecast TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Luxembourg 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (202.37 €) is -30% lower than the nominal DUC (287.55 €). The most important factors contributing to the observed difference (-85.17 €) are the deduction of other revenues (-62.75 €), see box 7 above for more details and the traffic adjustment (-13.16 €). It is noted, that the traffic adjustment reported in the chart refers to the difference between modulation effect (+0.1 M€ in total, resulting from the application of modulation of charges in TCZ) and the traffic effect (-0.7 M€ in total), resulting from variation in traffic.

See also Note 3 at the end of this Report.

Furthermore, it is noted that no traffic adjustment is calculated for the NSA costs, since these costs are fully subsidised by the State and not charged to the airspace users.

These costs and adjustments are divided by the actual TNSUs in 2016.

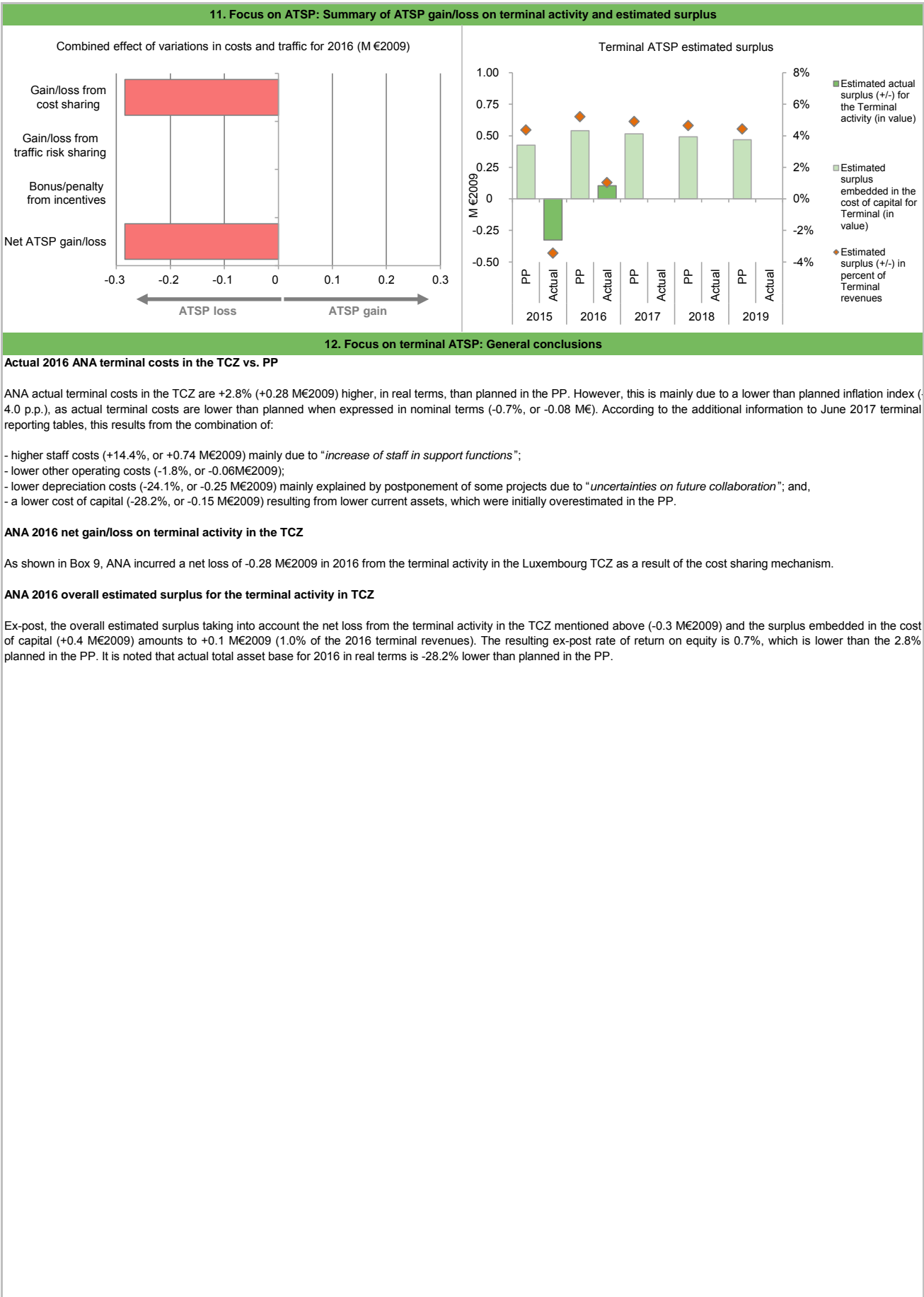
LUXEMBOURG: Terminal ATSP (ANA LUX)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	9 499	10 070			
Actual costs for the ATSP	10 164	10 354			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-665	-284			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-665	-284			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-665	-284			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the Profit & Loss accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	15 283	19 433	18 522	17 686	16 881
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	15 283	19 433	18 522	17 686	16 881
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	425	540	515	492	469
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	2.8%	2.8%	2.8%	2.8%	2.8%
Estimated surplus embedded in the cost of capital for terminal (in value)	425	540	515	492	469
Overall estimated surplus (+/-) for the terminal activity	425	540	515	492	469
Revenue/costs for the terminal activity	9 737	10 381	10 510	10 597	10 618
Estimated surplus (+/-) in percent of terminal revenues	4.4%	5.2%	4.9%	4.6%	4.4%
Estimated ex-ante RoE pre-tax rate (in %)	2.8%	2.8%	2.8%	2.8%	2.8%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	12 126	13 956			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	12 126	13 956			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	337	388			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	2.8%	2.8%			
Estimated surplus embedded in the cost of capital for terminal (in value)	337	388			
Net ATSP gain(+)/loss(-) on terminal activity	-665	-284			
Overall estimated surplus (+/-) for the terminal activity	-327	104			
Revenue/costs for the terminal activity	9 499	10 070			
Estimated surplus (+/-) in percent of terminal revenues	-3.4%	1.0%			
Estimated ex-post RoE pre-tax rate (in %)	-2.7%	0.7%			

LUXEMBOURG: Terminal ATSP (ANA LUX)

Monitoring of terminal COST-EFFICIENCY for 2016



BELGIUM & LUXEMBOURG: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																	
Belgium & Luxembourg: Data from RP2 Performance Plan		2015D	2016D	2017D	2018D	2019D											
Real en-route costs (EUR2009)		150 757 603	152 984 440	154 897 964	155 652 698	156 055 562											
Real terminal costs (EUR2009)		60 454 020	62 447 468	63 779 064	64 278 977	64 020 519											
Real gate-to-gate costs (EUR2009)		211 211 623	215 431 908	218 677 028	219 931 675	220 076 081											
En-route share (%)		71.4%	71.0%	70.8%	70.8%	70.9%											
Belgium & Luxembourg: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A											
Real en-route costs (EUR2009)		144 755 264	147 175 819														
Real terminal costs (EUR2009)		55 840 520	59 511 295														
Real gate-to-gate costs (EUR2009)		200 595 784	206 687 114														
En-route share (%)		72.2%	71.2%														
Difference between Actuals and Planned (Actuals vs. PP)		2015	2016	2017	2018	2019											
Real gate-to-gate costs (EUR2009) in value		-10 615 839	-8 744 794														
in %		-5.0%	-4.1%														
En-route share in p.p.		0.8%	0.2%														
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																	
<p>In 2016, actual gate-to-gate ANS costs are -4.1% (-8.7 M€2009) lower than planned due to lower costs for both en-route (-3.8%, or -5.8 M€2009) and terminal (-4.7%, or -2.9 M€2009) ANS.</p> <p>The actual share of en-route in gate-to-gate ANS costs (71.2%) is mostly in line with the 2016 (71.0%).</p>		<table border="1"> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> </tbody> </table>				Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%
Year	En-route (%)	Terminal (%)															
2015	83%	17%															
2016	85%	15%															
2017	82%	18%															
3. Technical notes on en-route and terminal information reported by Belgium & Luxembourg																	
<p>Note 1: A penalty of -763 '000€ for not achieving the local en-route capacity target is reported for Belgium-Luxembourg charging zone in the 2016 FABEC FAB monitoring report and in the submission of June 2017 en-route reporting tables. This amount is split between the ATSPs in the charging zone with -507 '000€ allocated to Belgocontrol and -256 '000€ allocated to MUAC (Belgium-Luxembourg).</p> <p>Note 2: According to the information provided in the additional information to the June 2017 terminal reporting tables "Based on the Royal decrees of 19 December 2016, 26 December 2015 and of 25 December 2016, the regional airports (100%) and a part of Brussels TCZ (25%) are financed from the State or regional authorities". As the terminal ANS activities are therefore fully financed through "income from other sources" in four of the five Belgium TCZs (with the exception of Brussels TCZ), the analysis of the terminal economic surplus for these TCZs is void. Nevertheless, the analysis at Belgium TCZ level still looks at the deviation between the terminal actual unit cost and the terminal DUC target reported for 2016 in the RP2 PP.</p> <p>Note 3: It is noted, that in the June 2017 submission of terminal reporting tables, the traffic adjustment reported by Luxembourg refers to the difference between modulation effect (resulting from the application of modulation of charges in TCZ) and the traffic effect, resulting from variation in traffic. According to additional information to June 2017 terminal reporting tables, this was implemented since "the official reporting tables do not foresee any mechanism to report over- or under-coverage due to a modulation of the unit rate, as it is the case for the traffic effect".</p>																	

PRB Annual monitoring report 2016

Volume 2 – Local Overview

France

Version: 1.1

Date: 9 October 2017

FRANCE

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	71	C	D	C	C	B
DSNA	85	C	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	97%	99%
Runway Incursions (RIs)	69%	80%
ATM Specific Occurrences (ATM-S)		86%
Source of RAT data:	DSAC	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	4	3
Occurrence reporting and Investigation	2	0
TOTAL	13	5
DSNA	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	3	0
Occurrence reporting and Investigation	8	0
TOTAL	22	2

Observations

The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.

FRANCE

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

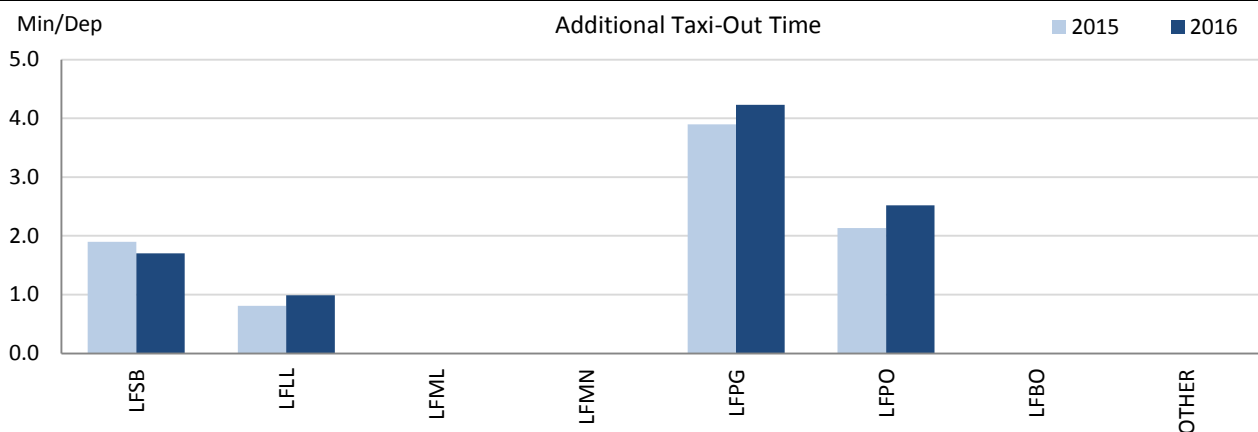
For France, the scope of the RP2 monitoring comprises a total of 60 airports. However, 53 of these 60 airports are grouped into a basket ("OTHER") for monitoring and target setting purposes.

At the time being the Airport Operator Data Flow is only fully established for 4 of the 7 airports independently monitored and for none of the airports within the basket. Accordingly, the monitoring of the environmental performance is limited. France shall encourage the timely implementation of the airport operator data flow for a further batch of airports to improve the reporting situation.

Given the limited data availability, the French airport-related ANS contribution to Environment is difficult to assess. On the basis of the available data set, the taxi-out performance at French airports is commensurate with the levels of traffic and well below the average for RP2 airports.

The ASMA indicator seems to follow the same trend as in 2015, when in general terms the values of additional ASMA times are significantly lower than those at other European airports with a similar share of traffic, especially in the case Paris CDG being clearly best in class. As an exception to this trend, LFMN keeps showing the highest ASMA value for airports in its category and above the European average.

2. Additional Taxi-Out Time

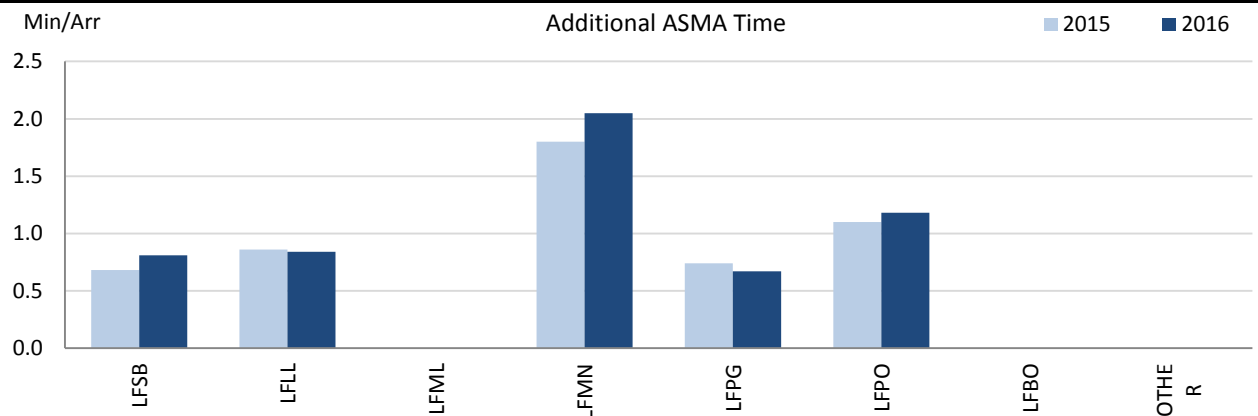


The additional taxi-out times range, with the exception of LFPG, well below the 3 min/dep. However there is a slight increase with respect to 2015, despite the fact that traffic has maintained the same level for all these airports.

The complete renovation of RWY 06/24 at Paris Orly (LFPO) had a significant impact in the additional taxi-out times during the months of July and August.

In Paris Charles de Gaulle, the biggest increase is observed in December and to certain extent during the summer.

3. Additional ASMA Time



Nice continues to show a high additional time in terminal airspace for an airport with around 120000 yearly movements. This value has also increased in the first half of 2016.

The works at LFPO also impacted the additional ASMA times during July and August, resulting in a slight increase in the yearly aggregate.

Paris Charles de Gaulle shows the best performance in Europe regarding ASMA for an airport in its category.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bâle-Mulhouse	LFSB	1.90	1.70				0.68	0.81			
Lyon-Saint-Exupéry	LFLL	0.81	0.99				0.86	0.84			
Marseille-Provence	LFML	n/a	n/a				n/a	n/a			
Nice-Côte d'Azur	LFMN	n/a	n/a				1.80	2.05			
Paris-Charles-de-Gaulle	LFPG	3.90	4.23				0.74	0.67			
Paris-Orly	LFPO	2.13	2.52				1.10	1.18			
Toulouse-Blagnac	LFBO	n/a	n/a				n/a	n/a			
OTHER:											
Agen-La Garenne	LFBA	n/a	n/a				n/a	n/a			
Ajaccio-Napoléon-Bonaparte	LFKJ	n/a	n/a				n/a	n/a			
Albert-Bray	LFAQ	n/a	n/a				n/a	n/a			
Angers-Marcé	LFJR	n/a	n/a				n/a	n/a			
Annecy-Meythet	LFLL	n/a	n/a				n/a	n/a			
Avignon-Caumont	LFMV	n/a	n/a				n/a	n/a			
Bastia-Poretta	LFKB	n/a	n/a				n/a	n/a			
Beauvais-Tillé	LFOB	n/a	n/a				n/a	n/a			
Bergerac-Roumanière	LFBE	n/a	n/a				n/a	n/a			
Béziers-Vias	LFMU	n/a	n/a				n/a	n/a			
Biarritz-Bayonne-Anglet	LFBZ	n/a	n/a				n/a	n/a			
Bordeaux-Mérignac	LFBD	n/a	n/a				n/a	n/a			
Brest-Bretagne	LFRB	n/a	n/a				n/a	n/a			
Brive-Souillac	LFSL	n/a	n/a				n/a	n/a			
Caen-Carpiquet	LFRK	n/a	n/a				n/a	n/a			
Calvi-Sainte-Catherine	LFKC	n/a	n/a				n/a	n/a			
Cannes-Mandelieu	LFMD	n/a	n/a				n/a	n/a			
Carcassonne-Salvaza	LFMK	n/a	n/a				n/a	n/a			
Châlons-Vatry	LFOK	n/a	n/a				n/a	n/a			
Chambéry-Aix-les-Bains	LFLB	n/a	n/a				n/a	n/a			
Châteauroux-Déols	LFLX	n/a	n/a				n/a	n/a			
Clermont-Ferrand-Auvergne	LFLC	n/a	n/a				n/a	n/a			
Deauville-Normandie	LFRG	n/a	n/a				n/a	n/a			
Dinard-Pleurtuit-Saint-Malo	LFRD	n/a	n/a				n/a	n/a			
Dôle-Tavaux	LFGJ	n/a	n/a				n/a	n/a			
Figari-Sud Corse	LFKF	n/a	n/a				n/a	n/a			
Grenoble-Isère	LFSL	n/a	n/a				n/a	n/a			
Hyères-Le Palyvestre	LFTH	n/a	n/a				n/a	n/a			
Istres-Le Tubé	LFMI	n/a	n/a				n/a	n/a			
La Rochelle-Ile de Ré	LFBH	n/a	n/a				n/a	n/a			
Lannion	LFRD	n/a	n/a				n/a	n/a			
Le Havre-Octeville	LFOH	n/a	n/a				n/a	n/a			
Lille-Lesquin	LFQQ	n/a	n/a				n/a	n/a			
Limoges-Bellegarde	LFBL	n/a	n/a				n/a	n/a			
Lorient-Lann Bihoué	LFRH	n/a	n/a				n/a	n/a			
Lyon-Bron	LFLY	n/a	n/a				n/a	n/a			
Metz-Nancy-Lorraine	LFJL	n/a	n/a				n/a	n/a			
Montpellier-Méditerranée	LFMT	n/a	n/a				n/a	n/a			
Nantes-Atlantique	LFRS	n/a	n/a				n/a	n/a			
Nîmes-Garons	LFTW	n/a	n/a				n/a	n/a			
Paris-Le Bourget	LFPB	n/a	n/a				n/a	n/a			
Pau-Pyrénées	LFBP	n/a	n/a				n/a	n/a			
Perpignan-Rivesaltes	LFMP	n/a	n/a				n/a	n/a			

Poitiers-Biard	LFBI	n/a	n/a				n/a	n/a			
Quimper-Pluguffan	LFRQ	n/a	n/a				n/a	n/a			
Rennes-Saint-Jacques	LFRN	n/a	n/a				n/a	n/a			
Rodez-Marcillac	LFRC	n/a	n/a				n/a	n/a			
Saint-Etienne-Bouthéon	LFMH	n/a	n/a				n/a	n/a			
Saint-Nazaire-Montoir	LFRZ	n/a	n/a				n/a	n/a			
Strasbourg-Entzheim	LFST	n/a	n/a				n/a	n/a			
Tarbes-Lourdes Pyrénées	LFBT	n/a	n/a				n/a	n/a			
Tours-Val de Loire	LFOT	n/a	n/a				n/a	n/a			
Toussus-le-Noble	LFPN	n/a	n/a				n/a	n/a			

FRANCE

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.37	0.40	0.40	0.39	0.32	Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.84	1.18				

National capacity incentive scheme

Incentive scheme targets:
 The capacity delay target at FAB level was set at an average of 0.38 min/flight for CRSTMP causes ATFM delays.
 DSNA’s broken down target was set at 0.31 min/flight.

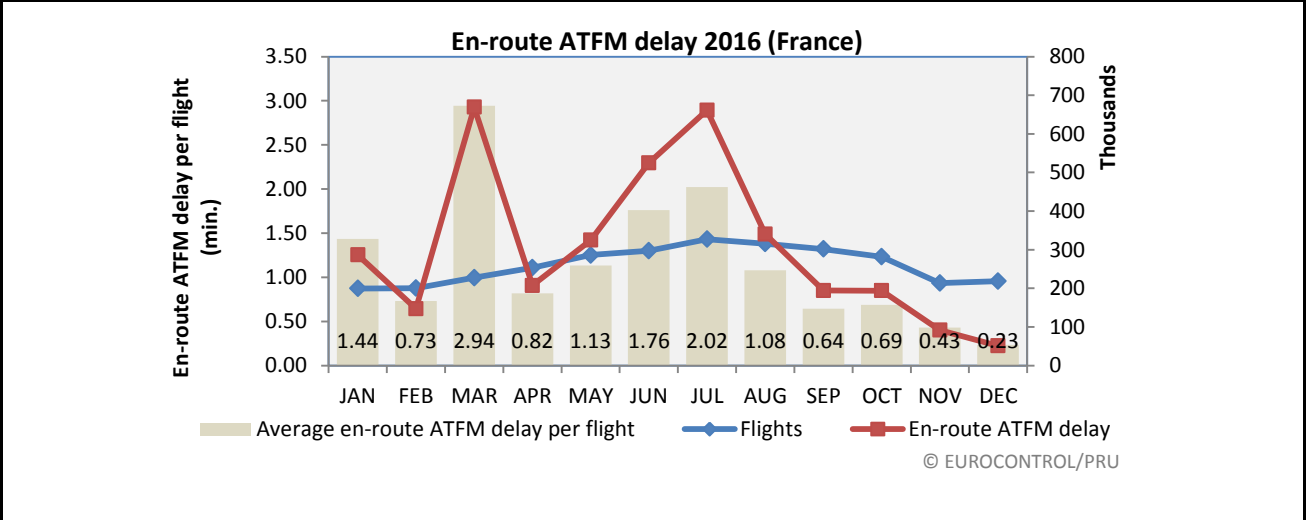
2015 achievement (As reported by FABEC)
 - FABEC: 0.67 min/flight for CRSTMP ATFM delays
 - DSNA: 0.76 min/flight for CRSTMP delays

BONUS / MALUS
 DSNA, as an ANSP contributing to the under-performance, achieved a malus of -0.5% of the total ANSP’s revenue in 2016, which equates to a penalty of €3,298,387.92

Compliance issues relating to national capacity incentive scheme

The PRB notes several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report

Observations regarding national capacity performance



En-route ATFM delay per flight (France)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.47	0.18	2.53	0.45	0.54	0.53	0.66	0.84	1.18

The deterioration in en route capacity performance in France in 2016 (1,18 minutes delay per flight) in comparison to 2015 (0,84 minutes delay per flight) is noted. A 4% rise in traffic levels saw a 43% rise in ATFM delays. En route capacity performance was seriously impacted by ATC strikes, (which are not included in CRSTMP calculations used to calculate incentives) accounting for 26% of the total AFTM delay in 2016, according to the data from the Network Manager. It is noted that the Network Manager highlights a probable capacity shortfall in Brest ACC for 2017, based on the current capacity plans (NOP 2017-2021), but otherwise expects en route capacity performance in France to meet the requirements for the remainder of RP2. However, It is noted that France continues to experience difficulties in delivering capacity to meet the traffic demand due to factors such as, industrial action, inability to open sectors during periods of peak traffic, etc. It is noted that FABEC report of the cancellation of capacity enhancement projects despite repeated warnings that capacity plans and deployment of available capacity in the FABEC airspace were not consistent with the required level of performance.

Planning and Effective Use of CDRs

Such data is not available at national level (or FAB) level.
 CURA (civil use of released airspace) and PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Monitoring) tools are currently not designed to provide rate of planning of conditional routes (CDRs) and effective use of CDRs. Indeed, only the Special Use of Airspace (SUA) can be evaluated. France is therefore currently evaluating SUA aggregated indicators matching IR (EC) 390/2013 to replace CDR-based indicators.

Observations on Planning and effective Use of CDRs

It is noted that France, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 63%.
 The ratio of time that airspace, surplus to requirement, was released with more than 3 hours’ notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 9%
 Procedure 3 is not applicable within the State.

PRB Observations on Effective booking procedures

France reports that airspace is very often released at tactical level (ASM level 3), however tactical releases are yet not always recorded in ASM systems and also not always notified to the Network Manager. No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

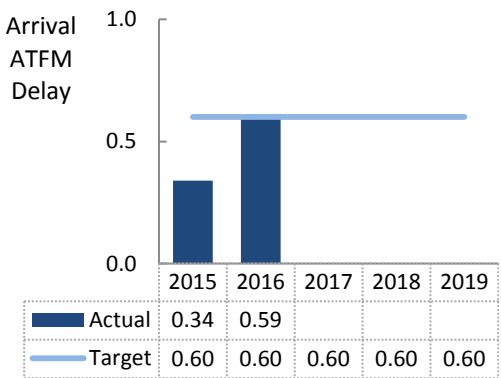
FRANCE

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

For France, ANS at a total of 60 airports falls under the scope of RP2. For practical reasons, the monitoring focuses on 7 major airports in terms of IFR movements and aggregates the 53 other airports into a residual group. France has established a national target for arrival ATFM delay. Despite a significant increase in arrival ATFM delay, the target (all causes) is met in 2016. The observed performance in terms of ATFM slot adherence at the 7 major airport has remained fairly stable, but ranges at the lower margin in comparison with other European airports, i.e. only Toulouse-Blagnac (LFBO) and Lyon-Saint Exupery (LFLL) reach or range above 90%. Paris Charles de Gaulle (LFPG) as one of the major European hubs only achieves a performance of 85.1%. The monitoring of pre-departure delay across all of these 7 major airports is at the time being not possible. France shall encourage the timely implementation of the Airport Operator Data Flow for these airports. From the 3 monitored airports (i.e. Bale-Mulhouse [LFSB], LFPG, and Paris-Orly [LFPO]), LFPG and LFPO show discernible levels of pre-departure delay (i.e. LFPG: 0.37 min/dep.; LFPO: 0.65 min/dep.).

2. Arrival ATFM Delay

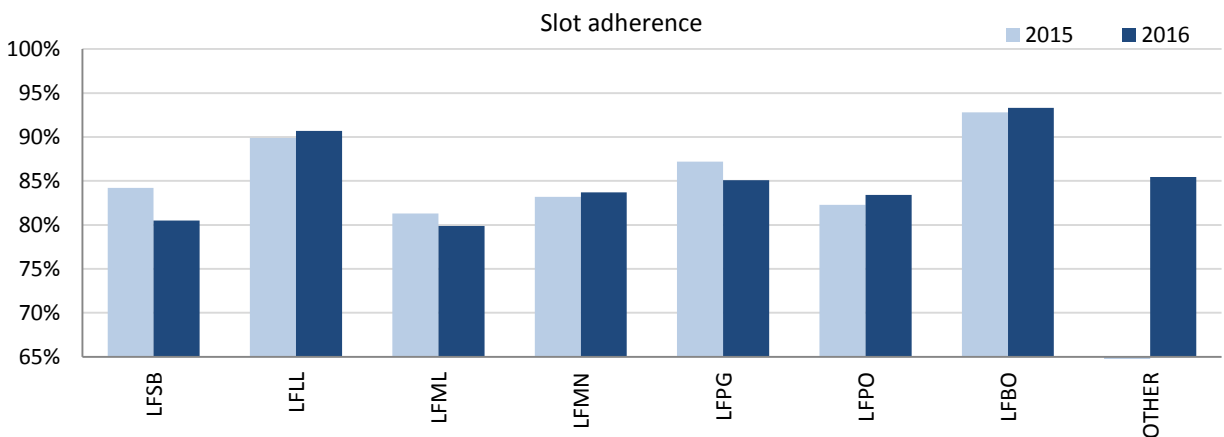


There has been a significant increase in terms of arrival ATFM delay (all causes) in France in 2016. The national average increased from 0.34 min/arr. to 0.59 min/arr. The value for 2016 just meets the established national target. With the exception of Lyon-Saint Exupery (LFLL) and Nice Cote d'Azur (LFMN), the observed performance deteriorated in 2016 at all other airports. Paris-Orly (LFPO) shows a critical increase in almost doubling the 2015 performance (i.e. 2015: 0.96 min/arr. vs 2016: 1.90 min/arr.).

3. Arrival ATFM Delay – National Target and Incentive Scheme

France established a national target on arrival ATFM delay (all causes: 0.60 min/arr. and CRSTMP: 0.15 min/arr.) as presented in the FABEC performance plan. France established an incentive scheme for the national target. In 2016, the established target has been met, i.e. actual performance: 0.59 min/arr. (all causes) and 0.11 min/arr. (CRSTMP). The actual performance ranges in the established deadband and no bonus is applied for DSNA.

4. ATFM Slot Adherence



ATFM slot adherence varies across the major 7 airports in France. The achieved performance in 2016 is broadly in line with 2015. It is noteworthy that the general performance in terms of slot adherence ranges at the lower compliance bound across Europe. Only Lyon Saint Exupery (LFLL) and Toulouse-Blagnac (LFBO) achieve a good adherence within the upper performance band of 90% or more. Paris Charles de Gaulle (LFPG), as one of the major European hubs, only achieves 85.1% (deterioration by 2% in comparison with 2015).

5. Pre-departure Delay

Discernible levels of pre-departure delay are measured at Paris Charles de Gaulle (LFPG, 2016: 0.37 min/dep.) and Paris-Orly (LFPO, 2016: 0.66 min/dep.)

In general there is a high share of unreported delay at French airports which requires further validation. The indicator cannot be computed in some cases due to data quality issues.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

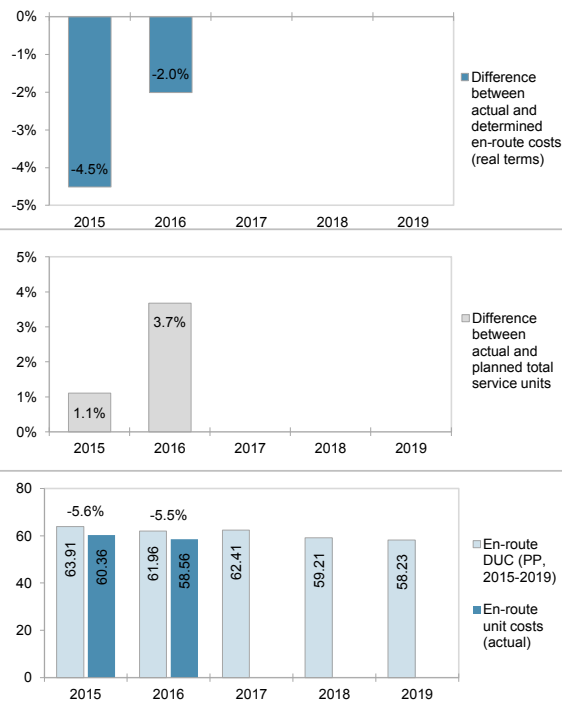
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bâle-Mulhouse	LFSB	0.14	0.32				84.2%	80.5%				n/a	n/a			
Lyon-Saint-Exupéry	LFLL	0.03	0.03				89.9%	90.7%				0.12	n/a			
Marseille-Provence	LFML	0.12	0.54				81.3%	79.9%				n/a	n/a			
Nice-Côte d'Azur	LFMN	0.23	0.20				83.2%	83.7%				n/a	n/a			
Paris-Charles-de-Gaulle	LFPG	0.35	0.53				87.2%	85.1%				0.40	0.37			
Paris-Orly	LFPO	0.96	1.90				82.3%	83.4%				n/a	0.65			
Toulouse-Blagnac	LFBO	0.26	0.41				92.8%	93.3%				n/a	n/a			
Agen-La Garenne	LFBA	0.00	0.00				83.0%	82.1%				n/a	n/a			
Ajaccio-Napoléon-Bonaparte	LFKJ	0.01	0.09				88.6%	83.3%				n/a	n/a			
Albert-Bray	LFAQ	0.39	0.03				44.0%	54.7%				n/a	n/a			
Angers-Marcé	LFJR	0.04	0.05				85.5%	88.3%				n/a	n/a			
Annecy-Meythet	LFLP	0.15	0.00				84.2%	90.0%				n/a	n/a			
Avignon-Caumont	LFMV	0.04	0.31				81.5%	77.7%				n/a	n/a			
Bastia-Poretta	LFKB	0.00	0.02				84.5%	81.6%				n/a	n/a			
Beauvais-Tillé	LFOB	0.29	1.65				55.3%	49.5%				n/a	n/a			
Bergerac-Roumanière	LFBE	0.00	0.00				79.1%	79.4%				n/a	n/a			
Béziers-Vias	LFMU	0.00	0.00				97.0%	89.6%				n/a	n/a			
Biarritz-Meyrepey	LFMZ	0.00	0.00				88.5%	87.8%				n/a	n/a			
Bordeaux-Mérignac	LFBD	0.12	0.23				87.7%	89.1%				n/a	n/a			
Brest-Bretagne	LFRB	0.01	0.02				90.3%	91.4%				n/a	n/a			
Brive-Souillac	LFSL	0.00	0.00				94.3%	96.2%				n/a	n/a			
Caen-Carpiquet	LFRK	0.00	0.00				84.9%	86.3%				n/a	n/a			
Calvi-Sainte-Catherine	LFKC	0.22	0.23				90.5%	94.0%				n/a	n/a			
Cannes-Mandelieu	LFMD	1.15	1.96				94.9%	95.1%				n/a	n/a			
Carcassonne-Salvaza	LFMK	0.00	0.00				77.2%	80.9%				n/a	n/a			
Châlons-Vatry	LFOK	0.09	0.00									n/a	n/a			
Chambéry-Aix-les-Bains	LFLB	1.62	1.31				89.1%	91.0%				n/a	n/a			
Châteauroux-Déols	LFLX	0.00	0.00				84.8%	86.7%				n/a	n/a			
Clermont-Ferrand-Auvergne	LFCL	0.01	0.00				79.5%	83.2%				n/a	n/a			
Deauville-Normandie	LFRG	0.02	0.00				85.6%	86.9%				n/a	n/a			
Dinard-Pleurtuit-Saint-Malo	LFRD	0.00	0.00				71.2%	75.8%				n/a	n/a			
Dôle-Tavaux	LFJJ	0.00	0.00				57.0%	42.2%				n/a	n/a			
Figari-Sud Corse	LFKF	1.58	1.37				84.6%	81.0%				n/a	n/a			
Grenoble-Isère	LFLS	1.70	2.77				95.1%	91.5%				n/a	n/a			
Hyères-Le Palyvestre	LFTH	0.00	0.01				84.3%	85.1%				n/a	n/a			
Istres-Le Tubé	LFMI	0.00	0.00				75.0%	70.8%				n/a	n/a			
La Rochelle-Ile de Ré	LFBH	0.10	0.00				89.2%	86.9%				n/a	n/a			
Lannion	LFRO	0.00	0.00				92.9%	93.7%				n/a	n/a			
Le Havre-Octeville	LFOH	0.00	0.00				82.4%	80.4%				n/a	n/a			
Lille-Lesquin	LFQQ	0.34	0.22				89.3%	84.3%				n/a	n/a			
Limoges-Bellegarde	LFBL	0.03	0.11				91.7%	92.4%				n/a	n/a			
Lorient-Lann Bihoué	LFRH	0.00	0.00				86.7%	84.4%				n/a	n/a			
Lyon-Bron	LFLY	0.00	0.01				92.9%	92.1%				n/a	n/a			

Metz-Nancy-Lorraine	LFJL	0.00	0.00				75.4%	77.5%				n/a	n/a			
Montpellier-Méditerranée	LFMT	0.02	0.01				92.0%	89.8%				n/a	n/a			
Nantes-Atlantique	LFRS	0.16	0.33				88.6%	88.6%				n/a	n/a			
Nîmes-Garons	LFTW	0.00	0.00				91.4%	87.9%				n/a	n/a			
Paris-Le Bourget	LFPB	0.35	1.00				91.0%	90.0%				n/a	n/a			
Pau-Pyrénées	LFBP	0.01	0.00				89.7%	88.2%				n/a	n/a			
Perpignan-Rivesaltes	LFMP	0.57	0.00				96.8%	93.7%				n/a	n/a			
Poitiers-Biard	LFBI	0.01	0.00				90.4%	87.1%				n/a	n/a			
Quimper-Pluguffan	LFRQ	0.00	0.00				89.9%	92.3%				n/a	n/a			
Rennes-Saint-Jacques	LFRN	0.00	0.00				82.2%	83.6%				n/a	n/a			
Rodez-Marcillac	LFMR	0.00	0.00				94.6%	95.8%				n/a	n/a			
Saint-Etienne-Bouthéon	LFMH	0.00	0.00				91.3%	92.0%				n/a	n/a			
Saint-Nazaire-Montoir	LFMZ	0.00	0.00				88.6%	90.2%				n/a	n/a			
Strasbourg-Entzheim	LFST	0.01	0.00				78.9%	80.9%				n/a	n/a			
Tarbes-Lourdes Pyrénées	LFBT	0.00	0.00				95.8%	94.0%				n/a	n/a			
Tours-Val de Loire	LFOT	0.04	0.00				100.0%	71.4%				n/a	n/a			
Toussus-le-Noble	LFPN	1.68	1.59				65.0%	67.1%				n/a	n/a			

FRANCE: En-route charging zone

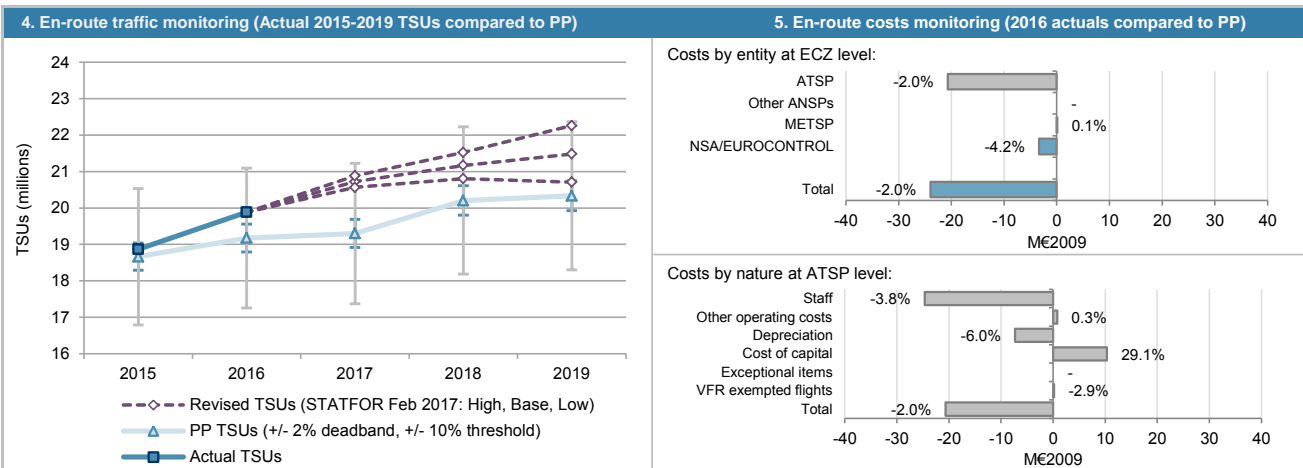
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> France ECZ represents 19.2% of the SES en-route ANS determined costs in 2016 ATSP: DSNA FAB: FABEC National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
France: Data from RP2 Performance Plan (EC Decision 2017/553 of 22 March 2017)	2015D	2016D	2017D	2018D	2019D	
En-route costs (nominal EUR)	1 290 640 175	1 296 576 851	1 328 676 964	1 334 112 339	1 337 956 806	
Inflation %	0.1%	0.8%	1.1%	1.1%	1.3%	
Inflation index (100 in 2009)	108.2	109.1	110.3	111.5	113.0	
Real en-route costs (EUR2009)	1 192 625 922	1 188 249 284	1 204 538 004	1 196 187 863	1 184 005 999	
Total en-route Service Units	18 662 000	19 177 000	19 300 000	20 204 000	20 333 000	
Real en-route unit cost per Service Unit (EUR2009)	63.91	61.96	62.41	59.21	58.23	
France: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
En-route costs (nominal EUR)	1 232 156 471	1 263 653 429				
Inflation %	0.1%	0.3%				
Inflation index (100 in 2009)	108.2	108.5				
Real en-route costs (EUR2009)	1 138 811 120	1 164 312 572				
Total en-route Service Units	18 867 771	19 882 659				
Real en-route unit cost per Service Unit (EUR2009)	60.36	58.56				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
En-route costs (nominal EUR)	in value -58 483 704	in value -32 923 422				
	in % -4.5%	in % -2.5%				
Inflation %	in p.p. -0.0 p.p.	in p.p. -0.5 p.p.				
Inflation index (100 in 2009)	in p.p. -0.0 p.p.	in p.p. -0.6 p.p.				
Real en-route costs (EUR2009)	in value -53 814 802	in value -23 936 712				
	in % -4.5%	in % -2.0%				
Total en-route Service Units	in value 205 771	in value 705 659				
	in % 1.1%	in % 3.7%				
Real en-route unit cost per Service Unit (EUR2009)	in value -3.55	in value -3.40				
	in % -5.6%	in % -5.5%				
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>The 2016 actual en-route unit cost in real terms (58.56 €2009) is -5.5% lower than planned in the PP (61.96 €2009). This difference results from the combination of higher actual TSUs than planned (by +3.7%) and lower actual en-route costs than planned (by -2.0%, or -23.9 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs for 2016 (+3.7%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional en-route revenue is therefore shared between the ATSP and the airspace users, with the gain retained by the DSNA amounting to + 26.4 M€2009. The planned TSUs for the remaining years of the RP are lower than the STATFOR February 2017 low case scenario.</p>						
En-route costs						
<p>The actual en-route costs are -2.5% lower than planned in nominal terms (-2.0% in real terms, as the actual inflation index for 2016 is lower by -0.6 p.p. than the economic assumption in the plan).</p>						
<p>The lower than planned en-route costs are essentially driven by lower actual costs for DSNA (-2.0% or -20.7 M€2009). NSA/EUROCONTROL actual costs also show a decrease compared to the amounts planned in the PP (-4.2%, or -3.4 M€2009), while the costs of Météo France are close to the plan (+0.1% or +0.1 M€2009).</p>						
<p>Costs exempted from cost-sharing are reported for a total amount of -12.8 M€2009 to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission.</p>						



FRANCE: En-route charging zone

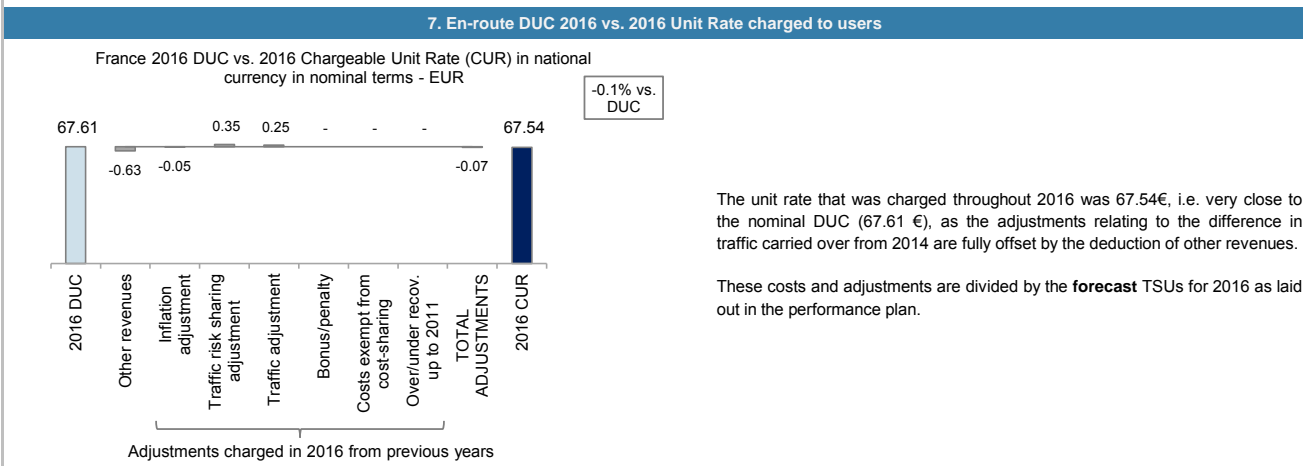
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

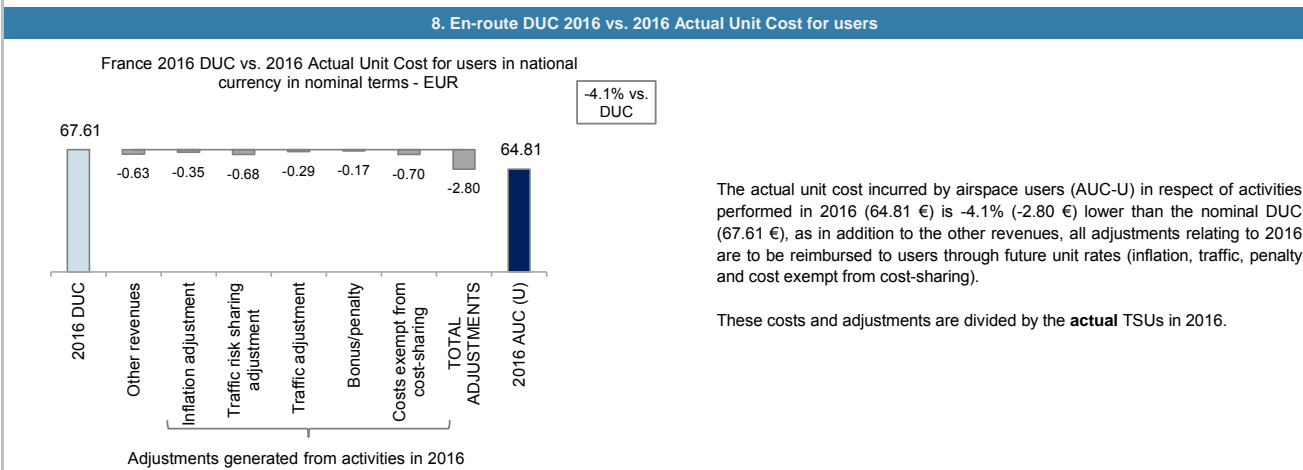
Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	-6 865			
	Interest rates on loans	-2 173	-3 693			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-1 706	-2 241			
by entity	ATSP	-2 173	-10 558			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-1 706	-2 241			
Total costs exempt from cost sharing		-3 878	-12 799			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



The unit rate that was charged throughout 2016 was 67.54€, i.e. very close to the nominal DUC (67.61 €), as the adjustments relating to the difference in traffic carried over from 2014 are fully offset by the deduction of other revenues.

These costs and adjustments are divided by the **forecast** TSUs for 2016 as laid out in the performance plan.



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (64.81 €) is -4.1% (-2.80 €) lower than the nominal DUC (67.61 €), as in addition to the other revenues, all adjustments relating to 2016 are to be reimbursed to users through future unit rates (inflation, traffic, penalty and cost exempt from cost-sharing).

These costs and adjustments are divided by the **actual** TSUs in 2016.

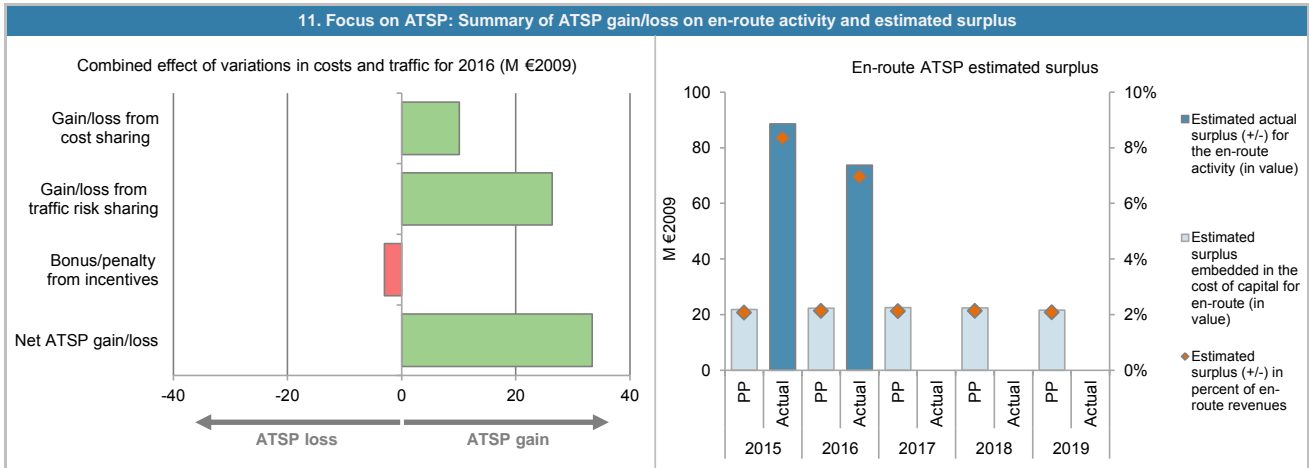
FRANCE: En-route ATSP (DSNA)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	1 052 355	1 046 866			
Actual costs for the ATSP	1 000 045	1 026 212			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	52 310	20 654			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-2 173	-10 558			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	50 138	10 096			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.1%	3.7%			
Determined costs for the ATSP (PP) - based on actual inflation	1 052 566	1 052 503			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	11 606	26 354			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	-2 247	-3 039			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	59 497	33 411			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	726 555	743 507	752 317	748 055	720 648
Estimated proportion of financing through equity (in %)	35.0%	35.0%	35.0%	35.0%	35.0%
Estimated proportion of financing through equity (in value)	254 294	260 228	263 311	261 819	252 227
Estimated proportion of financing through debt (in %)	65.0%	65.0%	65.0%	65.0%	65.0%
Estimated proportion of financing through debt (in value)	472 261	483 280	489 006	486 236	468 421
Cost of capital pre-tax (in value)	34 569	35 376	35 795	30 244	29 136
Average interest on debt (in %)	2.7%	2.7%	2.7%	1.6%	1.6%
Interest on debt (in value)	12 751	13 049	13 203	7 780	7 495
Determined RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
Estimated surplus embedded in the cost of capital for en-route (in value)	21 818	22 328	22 592	22 464	21 641
Overall estimated surplus (+/-) for the en-route activity	21 818	22 328	22 592	22 464	21 641
Revenue/costs for the en-route activity	1 052 355	1 046 866	1 062 305	1 052 762	1 039 648
Estimated surplus (+/-) in percent of en-route revenues	2.1%	2.1%	2.1%	2.1%	2.1%
Estimated ex-ante RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	742 759	744 089			
Estimated proportion of financing through equity (in %)	45.6%	63.2%			
Estimated proportion of financing through equity (in value)	338 549	470 636			
Estimated proportion of financing through debt (in %)	54.4%	36.8%			
Estimated proportion of financing through debt (in value)	404 209	273 453			
Cost of capital pre-tax (in value)	38 102	45 686			
Average interest on debt (in %)	2.2%	1.9%			
Interest on debt (in value)	9 054	5 305			
Determined RoE pre-tax rate (in %)	8.6%	8.6%			
Estimated surplus embedded in the cost of capital for en-route (in value)	29 048	40 381			
Net ATSP gain(+)/loss(-) on en-route activity	59 497	33 411			
Overall estimated surplus (+/-) for the en-route activity	88 544	73 792			
Revenue/costs for the en-route activity	1 059 541	1 059 623			
Estimated surplus (+/-) in percent of en-route revenues	8.4%	7.0%			
Estimated ex-post RoE pre-tax rate (in %)	26.2%	15.7%			

FRANCE: En-route ATSP (DSNA)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 DSNA en-route costs vs. PP

In 2016, DSNA actual en-route costs are -2.0% (-20.7 M€2009) lower, in real terms, than planned in the PP, mainly as a result of significantly lower en-route staff costs than planned (by -3.8% or -24.6 M€2009). According to the Additional Information provided along with the en-route Reporting Tables this is related to *“the first effects of the 2016-2019 social agreement which should apply more fully in 2017 and onwards”*. More precisely, DSNA is under an important structural transition phase aiming to significantly improve its operational and economic performance by 2020. In this context, a DGAC social agreement was signed on 19 July 2016 for the period 2016-2019.

Actual 2016 other operating costs are broadly in line with the planned values (+0.3% or +0.8 M€2009).

Actual 2016 depreciation costs are lower than planned (-6.0% or -7.3 M€2009), due to *“the fact that some fixed assets were put in operation with delay”*.

Actual 2016 cost of capital is higher than planned (+29.1% or +10.3 M€2009), corresponding to higher return on equity (due to a higher asset base and a higher percentage of financing through equity than planned) and lower interest on debt (due to both lower amounts of debt and lower interest rate on debt than planned). Note that the Additional Information to the Reporting Tables indicate that *“this figure is subject to potential modification in November due to further update of DSNA’s accounting data.”*

DSNA net gain/loss on en-route activity in 2016

As shown in box 9, DSNA generated a net gain of +33.4 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +10.1 M€2009 arising from the cost-sharing mechanism;
- a gain of +26.4 M€2009 arising from the traffic risk-sharing mechanism; and,
- a loss of -3.0 M€2009, corresponding to a penalty as part of the FABEC capacity target incentive mechanism. This amount corresponds to -0.3% of DSNA en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs).

The amounts reported in respect of financial incentives for 2016, to be charged or reimbursed to users, will be examined by the European Commission.

DSNA overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+33.4 M€2009) and the surplus embedded in the actual cost of capital (+40.4 M€2009) amounts to +73.8 M€2009 (7.0% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 15.7%, which is higher than the 8.6% planned in the PP.

FRANCE: Terminal charging zone

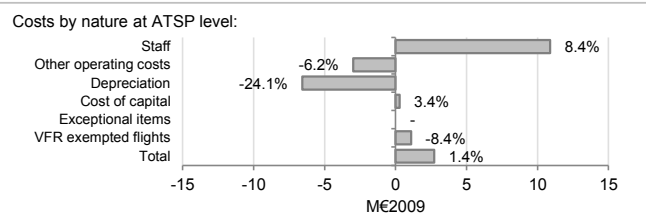
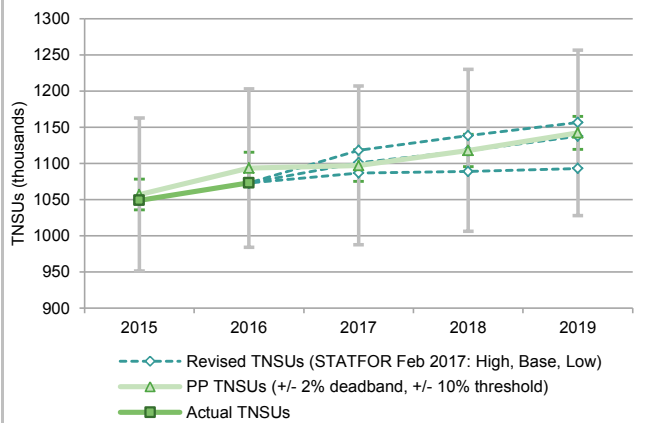
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· France TCZ represents 20.0% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	Yes
· ATSP: DSNA					· Airports with fewer than 70,000 IFRs ATMs:	53
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs:	5
· Number of airports in charging zone in 2016: 60,	of which:				· Airports with more than 225,000 IFRs ATMs:	2
2. Terminal DUC monitoring at Charging Zone level						
France: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal EUR)	241 036 841	243 449 920	248 024 300	246 796 618	248 351 842	
Inflation %	0.1%	0.8%	1.1%	1.1%	1.3%	
Inflation index (100 in 2009)	108.2	109.1	110.3	111.5	113.0	
Real terminal costs (EUR2009)	222 731 936	223 109 947	224 851 264	221 282 055	219 775 459	
Total terminal Service Units	1 057 100	1 093 550	1 097 200	1 118 000	1 142 200	
Real terminal unit cost per Service Unit (EUR2009)	210.70	204.02	204.93	197.93	192.41	
France: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal EUR)	237 413 858	242 591 164				
Inflation %	0.1%	0.3%				
Inflation index (100 in 2009)	108.2	108.5				
Real terminal costs (EUR2009)	219 427 928	223 520 101				
Total terminal Service Units	1 049 085	1 073 058				
Real terminal unit cost per Service Unit (EUR2009)	209.16	208.30				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
Terminal costs (nominal EUR)	in value -3 622 983	in value -858 755				
	in % -1.5%	in % -0.4%				
Inflation %	in p.p. -0.0 p.p.	in p.p. -0.5 p.p.				
Inflation index (100 in 2009)	in p.p. -0.0 p.p.	in p.p. -0.6 p.p.				
Real terminal costs (EUR2009)	in value -3 304 008	in value 410 154				
	in % -1.5%	in % 0.2%				
Total terminal Service Units	in value -8 015	in value -20 492				
	in % -0.8%	in % -1.9%				
Real terminal unit cost per Service Unit (EUR2009)	in value -1.54	in value 4.28				
	in % -0.7%	in % 2.1%				
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on France Terminal Charging Zone comprising 60 airports. Note that from 2017 onwards, two charging zones are established: Zone 1 for Paris-CDG and Paris-Orly (CZ1), Zone 2 for the other 58 aerodromes (CZ2). For the present 2016 monitoring report, the data for 2017-2019 is still presented in a consolidated manner.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (208.30 €2009) is +2.1% higher than planned in the PP (204.02 €2009), as costs are slightly higher than planned in real terms (+0.2%, or +0.4 M€2009) whereas the TNSUs are lower than planned by -1.9%.</p> <p>Terminal service units Traffic risk sharing applies in France Terminal Charging Zone(s). The difference between actual and planned TNSUs for 2016 (-1.9%) falls within the ±2% dead band foreseen in the traffic risk-sharing mechanism. The resulting loss of terminal revenues relating to costs subject to traffic risk sharing is therefore entirely borne by the DSNA (-3.8 M€2009).</p> <p>The planned TNSUs for the remaining years of the RP are in line with the STATFOR February 2017 base case scenario.</p> <p>Terminal costs The actual terminal costs are slightly lower than planned in nominal terms (by -0.4%) and slightly higher than planned in real terms (+0.2%), as the actual inflation index for 2016 is -0.6 percentage points lower than foreseen in the plan. The overall difference between actual and planned costs for 2016 (+0.4 M€2009) is due to higher costs than planned for the DSNA by +2.7 M€2009 (or +1.4%), partly compensated by lower costs for MétéoFrance by -2.0 M€2009 (or -9.6%) and lower NSA actual costs by -0.4 M€2009 (or -22.5%). Costs exempted from cost-sharing are reported for a total amount of -2.1 M€2009 to be reimbursed to airspace users to the following reference period(s), if deemed allowed by the European Commission. This corresponds to a reimbursement to users in respect of pension and interest on loans (lower actual interest rate than planned).</p>						

FRANCE: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)



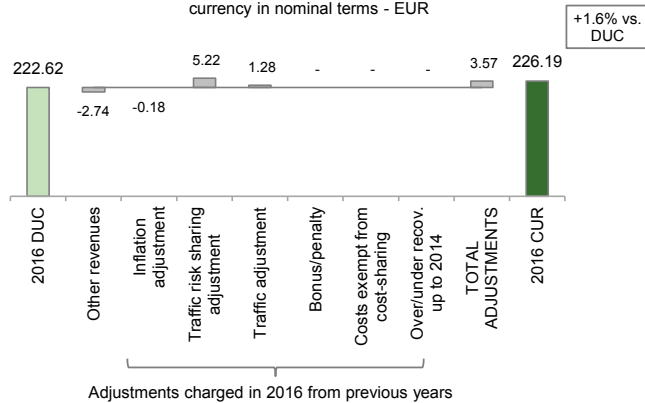
6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	-1 387			
	Interest rates on loans	-433	-730			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	-433	-2 117			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		-433	-2 117			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

France 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

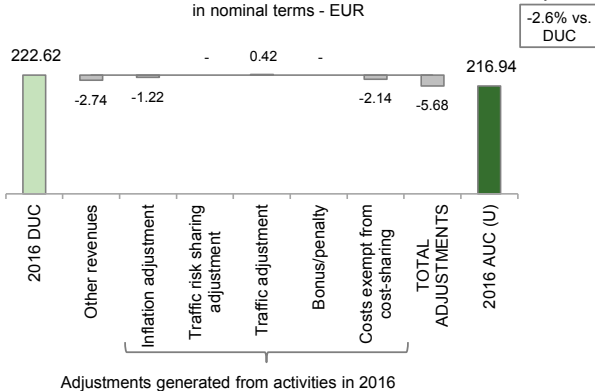


The CUR charged to airspace users in 2016 was 226.19 €. This is higher than the nominal DUC (222.62 €) by +1.6%, as the traffic adjustments carried over from 2014 are partly offset by the inflation adjustment from 2014 and the deduction of other revenues. France Terminal Charging Zone was the only TCZ that applied the Determined Costs method already in RP1.

These costs and adjustments are divided by the forecast TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

France 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (216.94 €) is -2.6% lower than the nominal DUC (222.62 €), due to the deduction of other revenues, to the inflation adjustment and cost exempt from cost-sharing to be reimbursed to users. These deductions are only partially offset by the 2016 traffic adjustment (adjusted to take account of the results for the single terminal charging zone in 2016 – see note 1).

These costs and adjustments are divided by the actual TNSUs in 2016.

FRANCE: Terminal ATSP (DSNA)

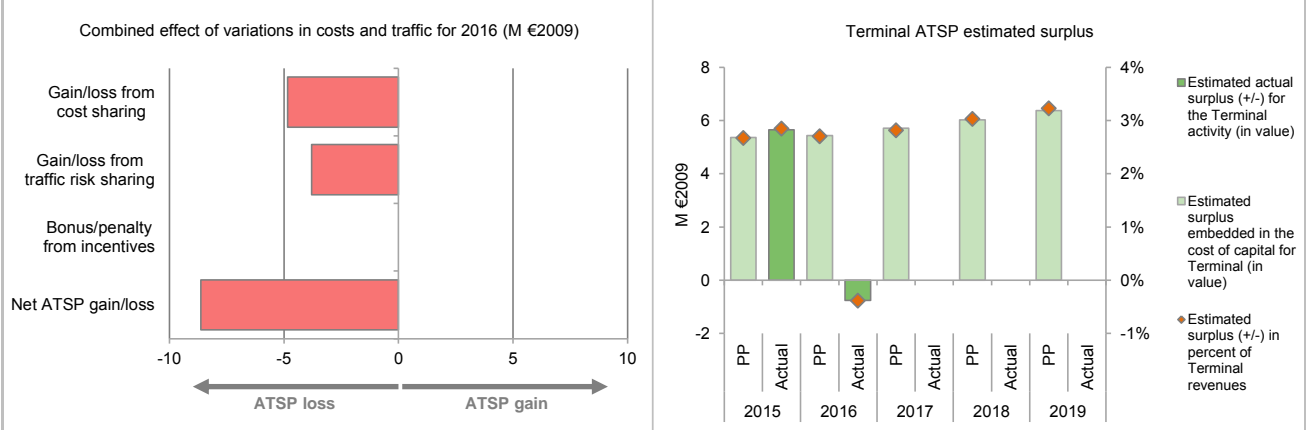
Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	200 752	201 091			
Actual costs for the ATSP	199 147	203 816			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 605	-2 725			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-433	-2 117			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 172	-4 842			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.8%	-1.9%			
Determined costs for the ATSP (PP) - based on actual inflation	200 793	202 174			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-1 522	-3 789			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-351	-8 630			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	178 452	181 011	190 049	200 711	212 325
Estimated proportion of financing through equity (in %)	35.0%	35.0%	35.0%	35.0%	35.0%
Estimated proportion of financing through equity (in value)	62 458	63 354	66 517	70 249	74 314
Estimated proportion of financing through debt (in %)	65.0%	65.0%	65.0%	65.0%	65.0%
Estimated proportion of financing through debt (in value)	115 994	117 657	123 532	130 462	138 011
Cost of capital pre-tax (in value)	8 491	8 612	9 043	8 115	8 584
Average interest on debt (in %)	2.7%	2.7%	2.7%	1.6%	1.6%
Interest on debt (in value)	3 132	3 177	3 335	2 087	2 208
Determined RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
Estimated surplus embedded in the cost of capital for terminal (in value)	5 359	5 436	5 707	6 027	6 376
Overall estimated surplus (+/-) for the terminal activity	5 359	5 436	5 707	6 027	6 376
Revenue/costs for the terminal activity	200 752	201 091	202 845	199 173	197 599
Estimated surplus (+/-) in percent of terminal revenues	2.7%	2.7%	2.8%	3.0%	3.2%
Estimated ex-ante RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	153 551	145 102			
Estimated proportion of financing through equity (in %)	45.6%	63.3%			
Estimated proportion of financing through equity (in value)	69 988	91 777			
Estimated proportion of financing through debt (in %)	54.4%	36.7%			
Estimated proportion of financing through debt (in value)	83 562	53 325			
Cost of capital pre-tax (in value)	7 877	8 909			
Average interest on debt (in %)	2.2%	1.9%			
Interest on debt (in value)	1 872	1 035			
Determined RoE pre-tax rate (in %)	8.6%	8.6%			
Estimated surplus embedded in the cost of capital for terminal (in value)	6 005	7 874			
Net ATSP gain(+)/loss(-) on terminal activity	-351	-8 630			
Overall estimated surplus (+/-) for the terminal activity	5 654	-756			
Revenue/costs for the terminal activity	198 797	195 186			
Estimated surplus (+/-) in percent of terminal revenues	2.8%	-0.4%			
Estimated ex-post RoE pre-tax rate (in %)	8.1%	-0.8%			

FRANCE: Terminal ATSP (DSNA)

Monitoring of terminal COST-EFFICIENCY for 2016

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 DSNA terminal costs vs. PP

DSNA actual terminal costs are +0.2% (+0.4 M€2009) higher, in real terms, than planned in the PP. This results from the combination of:

- higher actual staff costs than planned (by +10.9 M€2009 or +8.4%) mainly "because the allocation key between en-route and terminal services is lower than forecast, due to delays in the closing down of tower services on small aerodromes.";
- lower actual other operating costs than planned (by -3.0 M€2009 or -6.2%);
- lower depreciation costs than foreseen in the plan (by -6.6 M€2009 or -24.1%) "mainly because of the decision not to install 4-Flight in CDG and Orly airports as it was initially planned (their future ATM system will be Sysat as for other airports)";
- higher cost of capital (+0.3 M€2009 or +3.4%), reflecting a lower actual asset base than planned and a lower interest on debt; and,
- the deduction of lower actual costs for exempted VFR flights (resulting in +1.1 M€2009).

DSNA 2016 net gain/loss on terminal activity

As shown in box 9, the terminal activity in France TCZ generated a net loss of -8.6 M€2009 in 2016. This is a combination of two elements:

- a loss of -4.8 M€2009 as a result of the cost-sharing mechanism; and,
- a loss of -3.8 M€2009 as a result of traffic risk-sharing mechanism.

DSNA 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net loss from the terminal activity in France TCZ mentioned above (-8.6 M€2009) and the surplus embedded in the cost of capital (+7.9 M€2009) amounts to a loss of -0.8 M€2009 (-0.4% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is negative (-0.8%).

FRANCE: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
France: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	1 192 625 922	1 188 249 284	1 204 538 004	1 196 187 863	1 184 005 999																		
Real terminal costs (EUR2009)	222 731 936	223 109 947	224 851 264	221 282 055	219 775 459																		
Real gate-to-gate costs (EUR2009)	1 415 357 858	1 411 359 231	1 429 389 268	1 417 469 918	1 403 781 458																		
En-route share (%)	84.3%	84.2%	84.3%	84.4%	84.3%																		
France: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	1 138 811 120	1 164 312 572																					
Real terminal costs (EUR2009)	219 427 928	223 520 101																					
Real gate-to-gate costs (EUR2009)	1 358 239 049	1 387 832 673																					
En-route share (%)	83.8%	83.9%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	-57 118 810	-23 526 558																					
in %	-4.0%	-1.7%																					
En-route share																							
in p.p.	-0.4%	-0.3%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
In 2016, actual gate-to-gate ANS costs are -1.7% (-23.5 M€2009) lower than planned due to lower en-route costs (by -2.0% or -23.9 M€2009) and higher terminal costs (by +0.2% of M€2009).	<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>					Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																					
2015	83%	17%																					
2016	85%	15%																					
2017	82%	18%																					
2018																							
2019																							
The actual share of en-route in gate-to-gate ANS costs (83.9%) is slightly below the planned in the PP for 2016 (84.2%).																							
For DSNA, the estimated gate-to-gate economic surplus in 2016 amounts to 73.0 M€2009 (boxes 10 for the detailed analysis at charging zone level), corresponding to 5.8% of gate-to-gate ANS revenues.																							
3. Technical notes on en-route and terminal information reported by France																							
Note 1: Traffic Adjustment																							
The 2016 traffic adjustment has been recalculated to take account of the results for the single terminal charging zone in 2016.																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Germany

Version: 1.1

Date: 9 October 2017

GERMANY

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	70	C	C	C	C	C
DFS	92	D	E	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	BAF	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	4	5
Legal/Judiciary	4	3
Occurrence reporting and Investigation	1	1
TOTAL	9	9
DFS	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	22	2

Observations

The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.

GERMANY

Monitoring of Airports Contribution to ENVIRONMENT for 2016

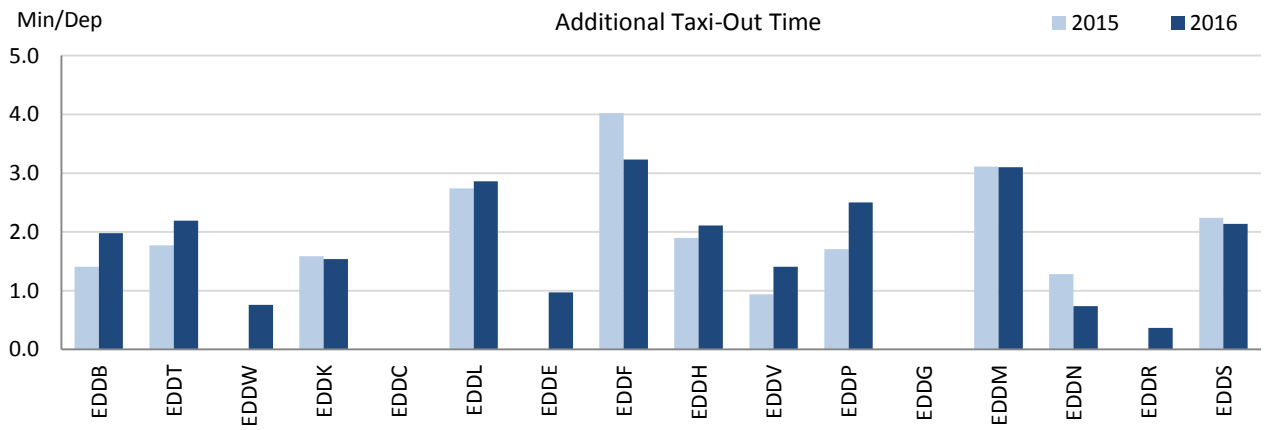
1. Overview

Germany identifies a total of 16 airports as subject to RP2 monitoring. Germany is in the process of completing the transition of all airports to the Airport Operator Data Flow.

The newly established data flow allows for the monitoring of ANS performance at 3 additional airports as of 2016 (i.e. Bremen [EDDW], Erfurt [EDDE], and Saarbrücken [EDDR]). With this, the Airport Operator Data Flow is now fully established for 14 airports, allowing for the monitoring of the environmental indicators. The implementation of the data flow with Dresden (EDDC) and Münster-Osnabrück (EDDG) is on-going (next to the data provision, a timeline of data reports is required).

In total, traffic at German airports subject to RP2 increased by 2% in 2016. 8 of the 16 airports experienced an increase in traffic between 1 and 4%, except EDDB (+27%) and EDDK (+7%). 6 of the 16 airports experienced a decrease in traffic between 1 and 4%, except EDDR (-6%)

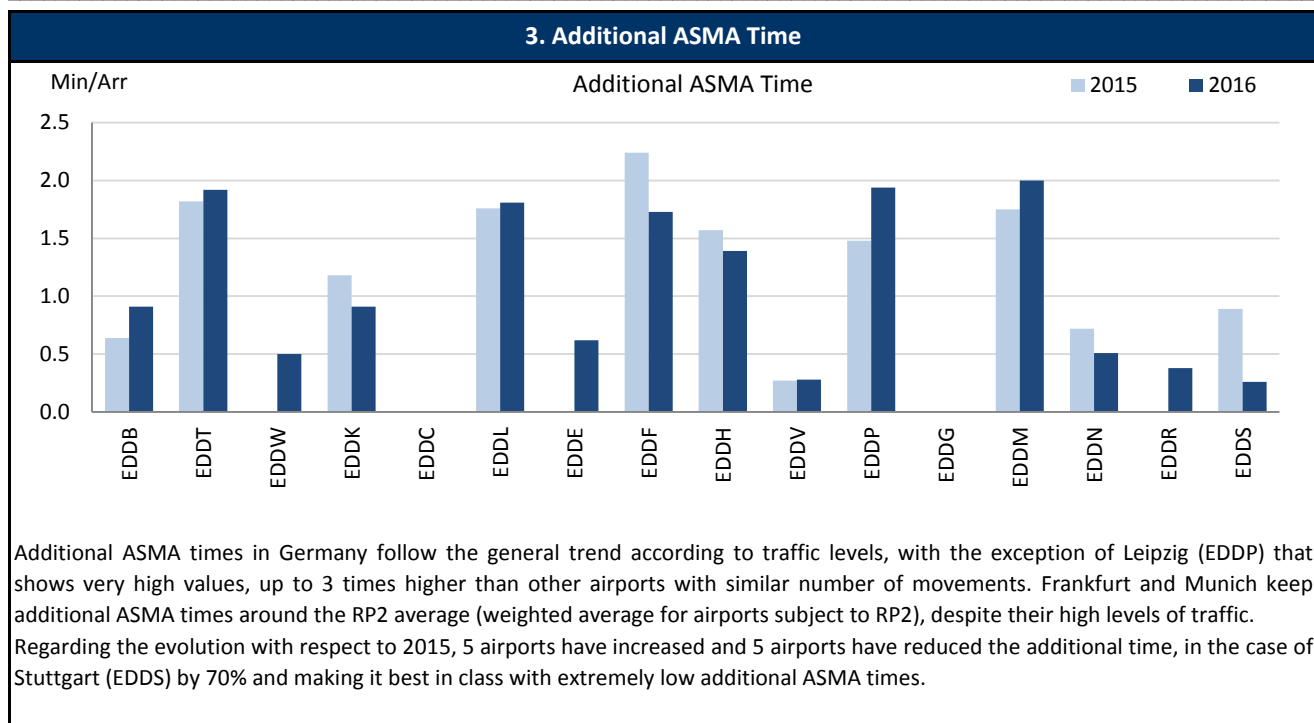
2. Additional Taxi-Out Time



In general, additional taxi-out times at German airports are commensurate with the level of traffic.

Erfurt (EDDE) and Leipzig (EDDP), although well below the average for RP2 airports, show higher additional TXOT times than other airports with those traffic levels. On the other hand, Munich (EDDM) and Frankfurt (EDDF) show best in class values for airports above 300000 movements per year. Nevertheless, the total number of movements is not the only factor influencing the ATXOT.

In EDDF and EDDN the additional times have decreased by 20% and 58% respectively in 2016. 3 airports: EDDM, EDDK and EDDS have slightly reduced their additional TXOT while in the rest of German airports (with available 2015 data) the indicator has increased.



4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Berlin/ Schoenefeld	EDDB	1.41	1.98				0.64	0.91			
Berlin/ Tegel	EDDT	1.77	2.19				1.82	1.92			
Bremen	EDDW	n/a	0.76				n/a	0.50			
Cologne-Bonn	EDDK	1.59	1.54				1.18	0.91			
Dresden	EDDC	n/a	n/a				n/a	n/a			
Dusseldorf	EDDL	2.74	2.86				1.76	1.81			
Erfurt	EDDE	n/a	0.97				n/a	0.62			
Frankfurt	EDDF	4.02	3.23				2.24	1.73			
Hamburg	EDDH	1.90	2.11				1.57	1.39			
Hannover	EDDV	0.94	1.41				0.27	0.28			
Leipzig-Halle	EDDP	1.71	2.50				1.48	1.94			
Muenster-Osnabruock	EDDG	n/a	n/a				n/a	n/a			
Munich	EDDM	3.11	3.10				1.75	2.00			
Nuremberg	EDDN	1.28	0.74				0.72	0.51			
Saarbruecken	EDDR	n/a	0.37				n/a	0.38			
Stuttgart	EDDS	2.24	2.14				0.89	0.26			

GERMANY

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	N/A	N/A	N/A	N/A	N/A	Because there are two ANSPs in Germany, DFS and EUROCONTROL (MUAC), Germany did not set a national target. Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.20	0.40				

National capacity incentive scheme

Incentive scheme targets:
 The capacity delay target at FAB level was set at an average of 0.38 min/flight for CRSTMP causes ATFM delays.
 DFS’s broken down target was set at 0.27 min/flight.
 EUROCONTROL (MUAC) broken down target was set at 0.14 min/flight

2016 achievement (As reported by FABEC)
 - FABEC: 0.67 min/flight for CRSTMP ATFM delays
 - DFS: 0.23 min/flight for CRSTMP delays
 - EUROCONTROL (MUAC): 0.29 min/flight for CRSTMP delays

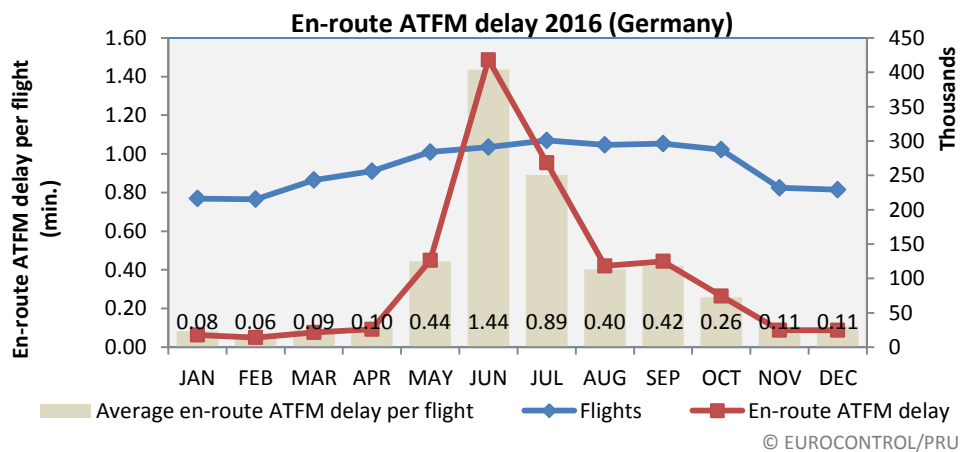
BONUS / MALUS
 DFS achieved their local target for CRSTMP delays and were therefore exempt from any penalty.
 The percentage of malus for EUROCONTROL (MUAC) was -0.5% of total ANSP’s revenue in 2015, which equates to a penalty of €794,361.44.

NOTE: The penalty for EUROCONTROL (MUAC) is applicable because of the performance over the four MUAC States (Belgium, Luxembourg, Germany and the Netherlands). The breakdown of the MUAC penalty per State is: Belgium €248,800.36; Luxembourg €7,694.98; Germany €377,536.96 and the Netherlands €160,329.15.

Compliance issues relating to national capacity incentive scheme

The PRB noted several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report

Observations regarding national capacity performance



En-route ATFM delay per flight (Germany)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.73	0.72	1.34	0.86	0.51	0.24	0.26	0.20	0.40

The deterioration of en route capacity performance in Germany in 2016 (0,40 minutes per flight) in comparison with 2015 (0,20 minutes per flight) is noted. Traffic increased from 2015 levels by approximately 2% whereas ATFM delays rose by 100% year on year.

It is noted that the Network Manager highlights the probability of capacity shortfalls in MUAC (2017-2019) Langen ACC and Karlsruhe UAC (2017 – 2018) based on the current capacity plans (NOP 2017-2021). The capacity situation in Karlsruhe UAC is, as reported by the DFS, due to ‘a significant staffing problem’ with about 25% fewer ATCOs than required.

It is noted that no information is provided regarding corrective measures to be implemented by the DFS at Karlsruhe UAC and that no information is provided about solving the ATCO shortage in the capacity planning section of the FABEC report. It is noted that the capacity situation at Karlsruhe UAC will also significantly impact capacity performance in the Tyrol region of Austria, and therefore FAB CE performance.

It is noted that FABEC report the cancellation of capacity enhancement projects despite repeated warnings that capacity plans, and deployment of available capacity, in the FABEC airspace were not consistent with the required level of performance.

Planning and Effective Use of CDRs

Such data is not available at national level (or FAB) level. CURA (civil use of released airspace) and PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Monitoring) tools are currently not designed to provide rate of planning of conditional routes (CDRs) and effective use of CDRs. Indeed, only the Special Use of Airspace (SUA) can be evaluated. Germany is therefore currently evaluating SUA aggregated indicators matching IR (EC) 390/2013 to replace CDR-based indicators.

Observations on Planning and effective Use of CDRs

It is noted that Germany, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 40%.
 The ratio of time that airspace, surplus to requirement, was released with more than 3 hours’ notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 19%
 Procedure 3 is applicable within the State and resulted in an effective usage of 42%

Observations on Effective booking procedures

Germany reports that airspace is very often released at tactical level (ASM level 3), however tactical releases are yet not always recorded in ASM systems and also not always notified to the Network Manager. No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

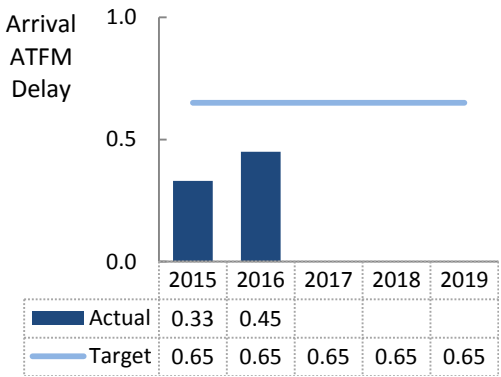
GERMANY

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Germany, ANS at 16 airports are subject to RP2. Germany has established a national target on arrival ATFM delay. Average arrival ATFM delay increased to 0.45 min/arr. in 2016 and ranges 0.12 min/arr. higher than in 2015. The national target (all causes) is met in both years. Adherence to ATFM slots remained widely stable in 2016. With the exception of Hamburg (EDDH) all airports show a compliance with ATFM slots of above 90%. Throughout 2016, the airport operator flow was not yet fully established for all airports in Germany. For the airports monitored, Frankfurt (EDDF) and Hamburg (EDDH) accrue discernible pre-departure delay in 2016 (i.e. EDDF: 0.52 min/dep. and EDDH: 0.32 min/dep.).

2. Arrival ATFM Delay

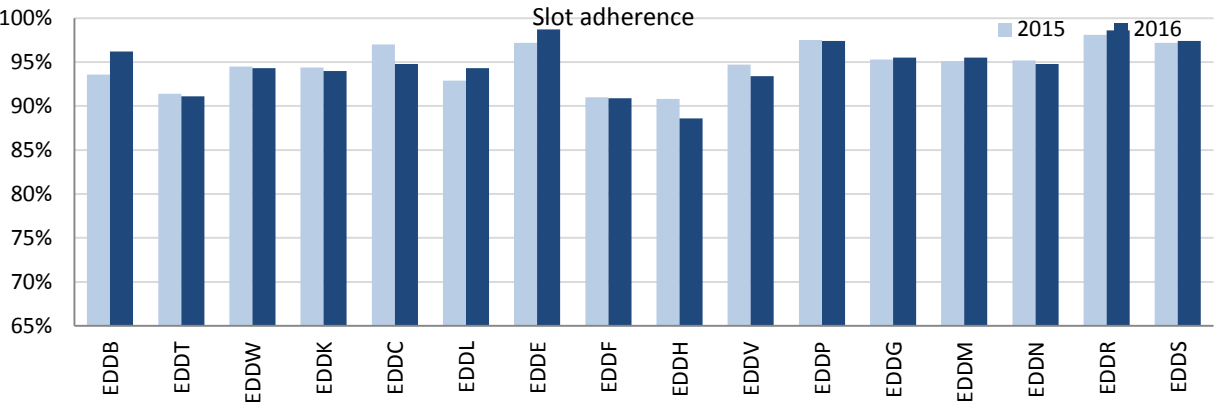


Arrival ATFM delay (all causes) increased in Germany by 35% (i.e. 2015: 0.33 min/arr. vs 2016: 0.45 min/arr.) in 2016. A discernible increase has been observed in Berlin/Tegel (EDDB; 2015: 0.20 min/arr. vs 2016: 0.53 min/arr.), Dusseldorf (EDDL; 2015: 0.34 min/arr. vs 2016: 0.54 min/arr.), Frankfurt (EDDF; 2015: 0.67 min/arr. vs 2016: 0.86 min/arr.), and Munich (EDDM; 2015: 0.33 min/arr. vs 2016: 0.49 min/arr.). Performance at Hamburg (EDDH) improved by 30% and ranges now at 0.39 min/arr. in 2016. The level of arrival ATFM delay remained fairly constant at a negligible level for the other airports in Germany.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Germany established a national target on arrival ATFM delay (all causes: 0.65 min/arr.; CRSTMP causes: 0.09 min/arr.) as presented in the FABEC performance plan. The plan also presents an incentive scheme for the national target on CRSTMP causes. The actual performance exceeds the target, i.e. all causes: 0.45 min/arr. and corresponding CRSTMP: 0.01 min/arr. in 2016. A bonus in accordance with 0.5% of the revenues has been awarded to DFS.

4. ATFM Slot Adherence



The adherence to ATFM slots in Germany remained at a high-level across all airport. Hamburg (EDDH) is the only airport that ranges below the 90% threshold at 88.6% following a deterioration of 2.2% in 2016 in comparison to 2015. Frankfurt (EDDF) and Berlin/Tegel (EDDT) range at 91%. Berlin/Schoenefeld (EDDB) showed an improvement of 2.6%, while it decreased at Hannover (EDDV) by about 1.3%. The other airports kept their ATFM slot compliance rate on a similar level than in 2015.

5. Pre-departure Delay

During the first half of 2017, the airport operator specification has been implemented for the remaining airports in Germany. However the level of reporting requires further validation as the number of delayed flights with no attributed delay causes, and/or the use of ambiguity codes for delayed departures with missing or non-standard delay codes varies widely. Accordingly, there is a limited level of valid reporting for 2016 (i.e. n/a label in the table in the appendix). Frankfurt (EDDF) accrues a discernible share of pre-departure delay of 0.52 min/dep. followed by Hamburg with 0.32 min/dep. Across the other airports reported there is a negligible share of pre-departure delay by airspace users which needs to be validated upon completion of the data flow implementation.

6. Appendix

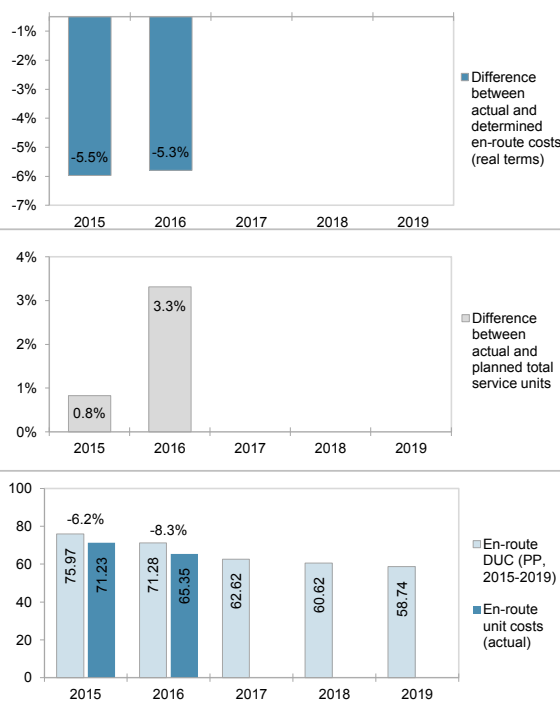
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Berlin/ Schoenefeld	EDDB	0.00	0.05				93.6%	96.2%				n/a	n/a			
Berlin/ Tegel	EDDT	0.20	0.53				91.4%	91.1%				n/a	n/a			
Bremen	EDDW	0.00	0.03				94.5%	94.3%				0.02	0.04			
Cologne-Bonn	EDDK	0.02	0.08				94.4%	94.0%				n/a	n/a			
Dresden	EDDC	0.00	0.01				97.0%	94.8%				n/a	n/a			
Dusseldorf	EDDL	0.34	0.54				92.9%	94.3%				n/a	n/a			
Erfurt	EDDE	0.00	0.00				97.2%	98.7%				n/a	n/a			
Frankfurt	EDDF	0.67	0.86				91.0%	90.9%				n/a	0.52			
Hamburg	EDDH	0.57	0.39				90.8%	88.6%				n/a	0.32			
Hannover	EDDV	0.00	0.00				94.7%	93.4%				0.09	0.14			
Leipzig-Halle	EDDP	0.00	0.18				97.5%	97.4%				0.20	0.14			
Muenster-Osnabruock	EDDG	0.00	0.00				95.3%	95.5%				n/a	n/a			
Munich	EDDM	0.33	0.49				95.1%	95.5%				n/a	0.04			
Nuremberg	EDDN	0.00	0.00				95.2%	94.8%				0.10	0.04			
Saarbruecken	EDDR	0.00	0.00				98.1%	98.6%				n/a	n/a			
Stuttgart	EDDS	0.09	0.08				97.2%	97.4%				n/a	n/a			

GERMANY: En-route charging zone

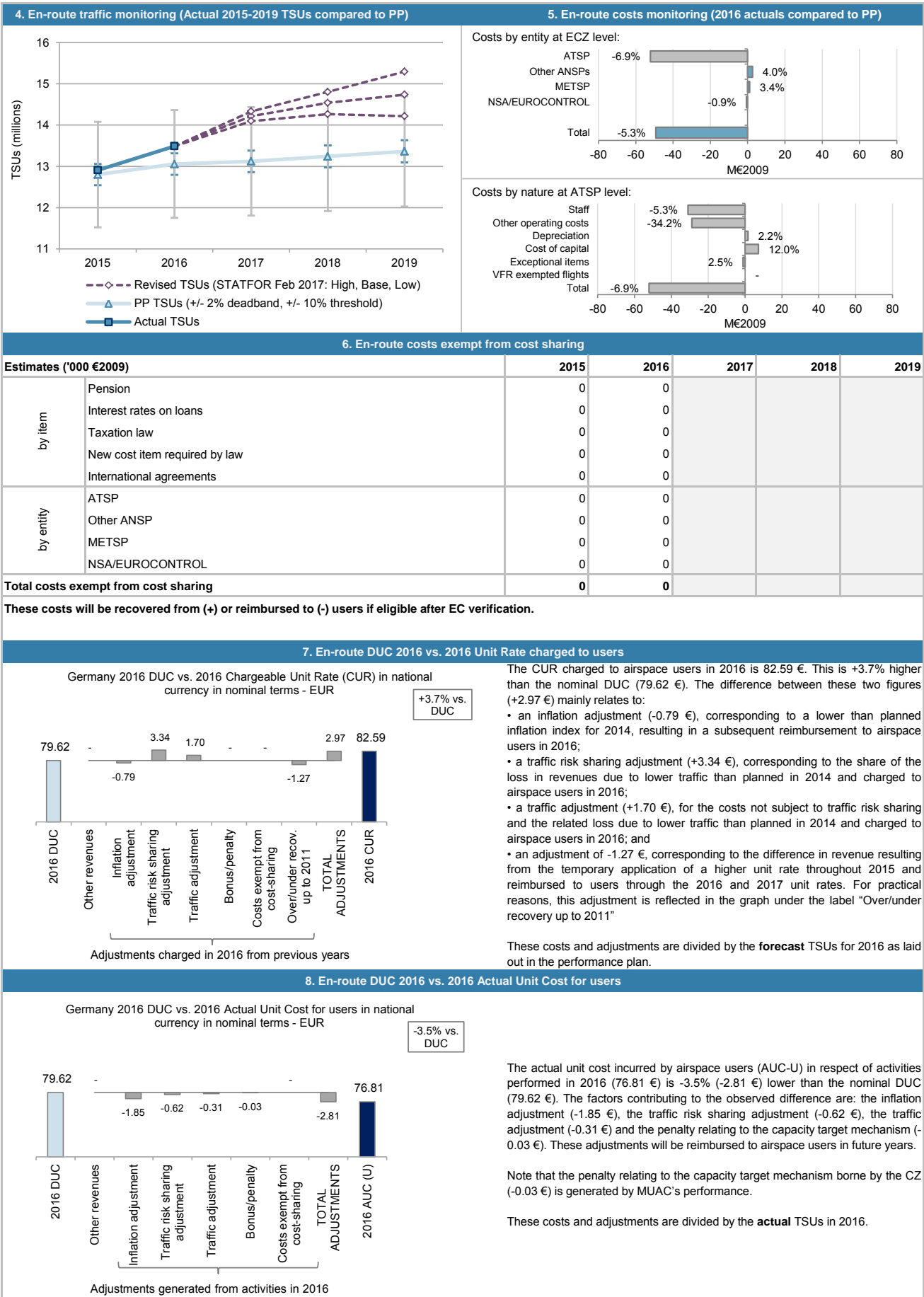
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Germany ECZ represents 15.0% of the SES en-route ANS determined costs in 2016 ATSP: DFS FAB: FABEC National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Germany: Data from RP2 Performance Plan (EC Decision 2017/553 of 22 March 2017)	2015D	2016D	2017D	2018D	2019D	
En-route costs (nominal EUR)	1 069 142 223	1 039 587 943	933 436 977	927 369 907	922 283 254	
Inflation %	1.4%	1.6%	1.7%	1.7%	1.7%	
Inflation index (100 in 2009)	109.9	111.7	113.6	115.5	117.5	
Real en-route costs (EUR2009)	972 517 385	930 742 228	821 735 846	802 748 084	784 999 985	
Total en-route Service Units	12 801 000	13 057 000	13 122 000	13 242 000	13 365 000	
Real en-route unit cost per Service Unit (EUR2009)	75.97	71.28	62.62	60.62	58.74	
Germany: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
En-route costs (nominal EUR)	998 129 209	960 889 127				
Inflation %	0.1%	0.4%				
Inflation index (100 in 2009)	108.6	109.0				
Real en-route costs (EUR2009)	919 323 427	881 497 589				
Total en-route Service Units	12 906 339	13 489 534				
Real en-route unit cost per Service Unit (EUR2009)	71.23	65.35				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
En-route costs (nominal EUR)	in value	-71 013 015	-78 698 815			
	in %	-6.6%	-7.6%			
Inflation %	in p.p.	-1.3 p.p.	-1.2 p.p.			
Inflation index (100 in 2009)	in p.p.	-1.4 p.p.	-2.7 p.p.			
Real en-route costs (EUR2009)	in value	-53 193 958	-49 244 638			
	in %	-5.5%	-5.3%			
Total en-route Service Units	in value	105 339	432 534			
	in %	0.8%	3.3%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-4.74	-5.94			
	in %	-6.2%	-8.3%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (65.35 €2009) is -8.3% lower than planned in the PP (71.28 €2009). This difference results from the combination of higher than planned TSUs (+3.3%) and lower than planned en-route costs (-5.3%, or -49.2 ME2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (+3.3%) falls outside the ±2% dead-band but inside the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting additional en-route revenues relating to the traffic risk sharing are therefore shared between the ATSP (DFS) and the airspace users with a gain to be retained by the ATSP amounting to +18.5 ME2009.</p> <p>Considering the latest STATFOR February 2017 TSUs forecasts, the traffic outlook for the rest of RP2 remains much higher than the presented in the PP for Germany. Indeed, if any of three STATFOR February 2017 scenarios materialises, the traffic will be substantially higher than planned for the rest of RP2. The traffic is expected to exceed the ±2% dead band foreseen in the traffic risk-sharing mechanism and in the <u>high</u> case would even exceed the 10% threshold in the years 2018 and 2019.</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -7.6% lower than planned. However, since the actual inflation index is also lower than planned (-2.7 p.p.), actual en-route costs are -5.3% below the planned level when expressed in €2009.</p> <p>The lower than planned en-route costs in real terms are mainly driven by DFS (-6.9% or some -52.2 ME2009). Also the NSA/EUROCONTROL recorded lower than planned costs (-0.9%, or -0.7 ME2009). On the other side the actual en-route costs of MUAC (+4.0% or some +2.6 ME2009) and of METSP (+3.4% or +1.1 ME2009) are higher than planned. A detailed analysis at ATSP level is provided in box 12.</p> <p>For MUAC, the higher actual en-route costs for 2016 (i.e. +4.0%) reflect higher staff costs (+6.6% or some +3.3 ME2009), slightly lower other operating costs (-1.5% or some -0.1 ME2009), lower depreciation costs (i.e. -12.2% or some -0.5 ME2009) and lower cost of capital (-41.7% or some -0.1 ME2009).</p> <p>There are no costs exempt from cost-sharing reported.</p>						



GERMANY: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



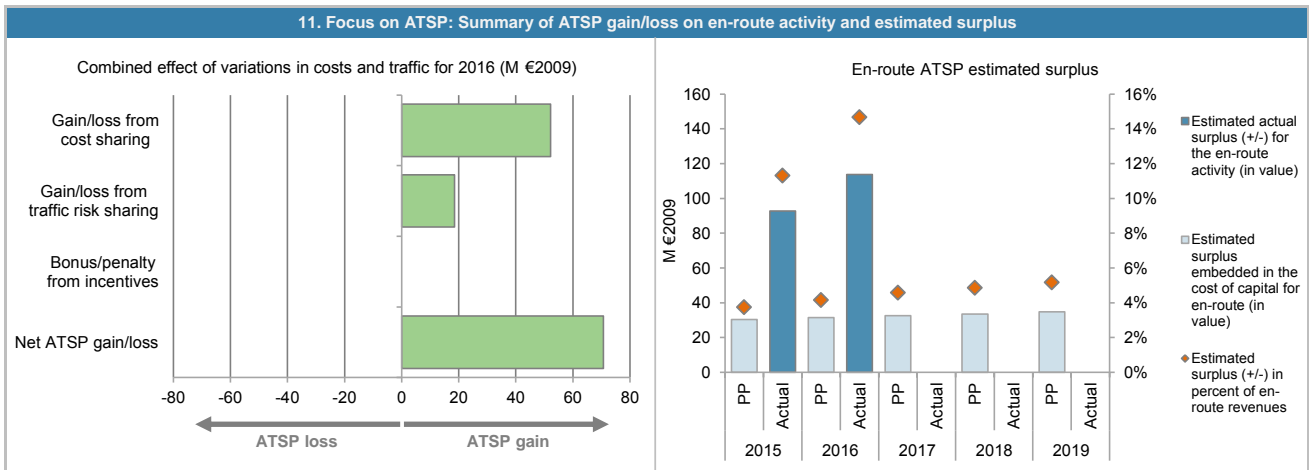
GERMANY: En-route ATSP (DFS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	812 550	755 932			
Actual costs for the ATSP	762 125	703 760			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	50 425	52 172			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	50 425	52 172			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	0.8%	3.3%			
Determined costs for the ATSP (PP) - based on actual inflation	822 753	774 573			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	6 770	18 542			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	57 195	70 714			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	1 356 648	1 289 129	1 227 898	1 165 907	1 104 511
Estimated proportion of financing through equity (in %)	30.1%	32.7%	35.6%	38.6%	42.3%
Estimated proportion of financing through equity (in value)	408 169	421 762	436 722	450 328	467 152
Estimated proportion of financing through debt (in %)	69.9%	67.3%	64.4%	61.4%	57.7%
Estimated proportion of financing through debt (in value)	948 479	867 368	791 176	715 579	637 359
Cost of capital pre-tax (in value)	62 410	60 499	58 854	57 103	55 549
Average interest on debt (in %)	3.4%	3.4%	3.3%	3.3%	3.3%
Interest on debt (in value)	32 001	29 078	26 318	23 553	20 746
Determined RoE pre-tax rate (in %)	7.5%	7.5%	7.5%	7.5%	7.5%
Estimated surplus embedded in the cost of capital for en-route (in value)	30 409	31 421	32 536	33 549	34 803
Overall estimated surplus (+/-) for the en-route activity	30 409	31 421	32 536	33 549	34 803
Revenue/costs for the en-route activity	812 550	755 932	709 432	690 931	672 960
Estimated surplus (+/-) in percent of en-route revenues	3.7%	4.2%	4.6%	4.9%	5.2%
Estimated ex-ante RoE pre-tax rate (in %)	7.5%	7.5%	7.5%	7.5%	7.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	1 397 725	1 457 775			
Estimated proportion of financing through equity (in %)	34.1%	39.6%			
Estimated proportion of financing through equity (in value)	476 728	577 082			
Estimated proportion of financing through debt (in %)	65.9%	60.4%			
Estimated proportion of financing through debt (in value)	920 997	880 693			
Cost of capital pre-tax (in value)	62 663	67 784			
Average interest on debt (in %)	2.9%	2.8%			
Interest on debt (in value)	27 147	24 791			
Determined RoE pre-tax rate (in %)	7.5%	7.5%			
Estimated surplus embedded in the cost of capital for en-route (in value)	35 516	42 993			
Net ATSP gain(+)/loss(-) on en-route activity	57 195	70 714			
Overall estimated surplus (+/-) for the en-route activity	92 712	113 706			
Revenue/costs for the en-route activity	819 320	774 473			
Estimated surplus (+/-) in percent of en-route revenues	11.3%	14.7%			
Estimated ex-post RoE pre-tax rate (in %)	19.4%	19.7%			

GERMANY: En-route ATSP (DFS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 DFS en-route costs vs. PP

In 2016, DFS actual en-route costs are -6.9% (-52.2 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- lower staff costs (-5.3% or -31.0 M€2009), as indicated in the Additional Information to the June 2017 en-route Reporting Tables, "the results were achieved by not replacing leaving personnel where not strictly operational necessary. In 2015 and 2016 salary increase was higher than planned. Staff reductions counterbalanced this increase. Furthermore, because of the positive economic situation in Germany the contribution to the Pension Protection Fund in 2016 was 0%";
- lower other operating costs (-34.2% or -28.9 M€2009), mainly due to an extraordinary lower actual inflation in 2016 than the foreseen in the PP and the related impact on lower operating costs in electricity, heating and maintenance costs of the buildings and technical systems;
- higher depreciation costs (2.2% or +1.6 M€2009); and,
- a significant higher cost of capital (+12.0% or +7.3 M€2009), as indicated in the Additional Information to the June 2017 en-route Reporting Tables, "the increase in cost of capital results from a larger rise in equity than anticipated, due to the good traffic development of the last two years and reduced costs".

DFS net gain/loss on en-route activity in 2016

As shown in box 9, DFS generated a net gain of +70.7 M€2009 on the en-route activity. This is a combination of two elements:

- a gain of +52.2 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +18.5 M€2009 arising from the traffic risk-sharing mechanism;

DFS net gain in 2016 (+70.7 M€2009), is significantly higher (+23.6%) than the net gain recorded in 2015 (+57.2M€2009). This is mainly due to the gain arising from the traffic risk-sharing mechanisms, which is 173.9% higher in 2016 compared to 2015.

DFS overall estimated surplus for the en-route activity

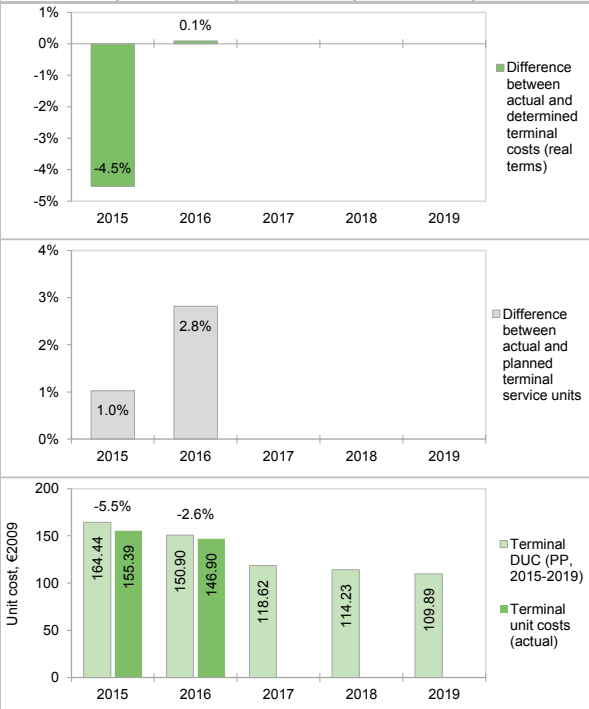
Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+70.7 M€2009) and the surplus embedded in the actual cost of capital (+43 M€2009) amounts to +113.7 M€2009 (14.7% of the 2016 en-route revenues), which is 22.6% higher than in 2015 (92.7M€2009).

The resulting ex-post rate of return on equity is 19.7%, which is significantly higher than the 7.5% planned in the PP.

GERMANY: Terminal charging zone

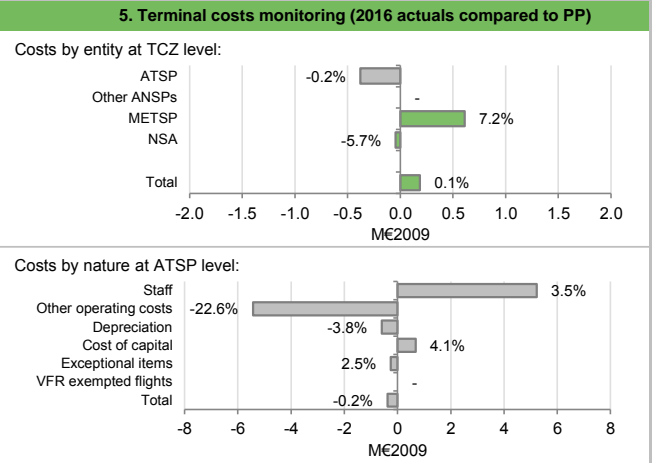
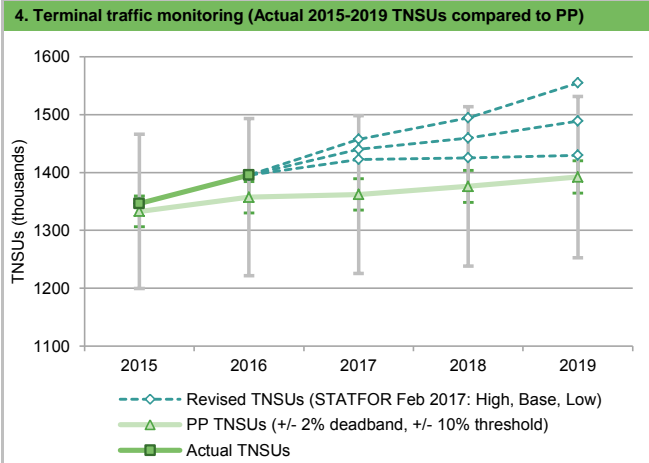
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Germany TCZ represents 18.4% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing? Yes
· ATSP: DFS					· Airports with fewer than 70,000 IFRs ATMs: 9
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs: 5
· Number of airports in charging zone in 2016: 16, of which:					· Airports with more than 225,000 IFRs ATMs: 2
2. Terminal DUC monitoring at Charging Zone level					
Germany: Data from RP2 Performance Plan	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	240 938 212	228 762 834	183 533 387	181 581 437	179 750 173
Inflation %	1.4%	1.6%	1.7%	1.7%	1.7%
Inflation index (100 in 2009)	109.9	111.7	113.6	115.5	117.5
Real terminal costs (EUR2009)	219 163 171	204 811 176	161 570 590	157 180 161	152 994 086
Total terminal Service Units	1 332 800	1 357 300	1 362 100	1 376 000	1 392 200
Real terminal unit cost per Service Unit (EUR2009)	164.44	150.90	118.62	114.23	109.89
Germany: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	227 170 560	223 461 459			
Inflation %	0.1%	0.4%			
Inflation index (100 in 2009)	108.6	109.0			
Real terminal costs (EUR2009)	209 234 652	204 998 404			
Total terminal Service Units	1 346 490	1 395 519			
Real terminal unit cost per Service Unit (EUR2009)	155.39	146.90			
Difference between Actuals and Planned	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -13 767 652	in value -5 301 375			
	in % -5.7%	in % -2.3%			
Inflation %	in p.p. -1.3 p.p.	in p.p. -1.2 p.p.			
Inflation index (100 in 2009)	in p.p. -1.4 p.p.	in p.p. -2.7 p.p.			
Real terminal costs (EUR2009)	in value -9 928 519	in value 187 227			
	in % -4.5%	in % 0.1%			
Total terminal Service Units	in value 13 690	in value 38 219			
	in % 1.0%	in % 2.8%			
Real terminal unit cost per Service Unit (EUR2009)	in value -9.05	in value -4.00			
	in % -5.5%	in % -2.6%			
3. Focus on terminal at State/Charging Zone level					
This analysis focuses on Germany Terminal Charging Zone (TCZ) comprising 16 airports.					
Terminal unit cost In 2016, the actual terminal unit cost in real terms (146.90 €2009) is -2.6% lower than planned in the PP (150.90 €2009). This difference results from the combination of higher than planned TNSUs (+2.8%) and slightly higher than planned terminal costs (+0.1%, or +0.2 M€2009).					
Terminal service units Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (+2.8%) falls outside the ±2% dead-band but inside the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting additional terminal revenues relating to the traffic risk sharing are therefore shared between the ATSP (DFS) and the airspace users with a gain to be retained by the ATSP amounting to +4.5M€2009.					
Considering the latest STATFOR February 2017 TNSUs forecasts, the traffic outlook for the rest of RP2 remains much more optimistic than the presented in the PP for Germany. Indeed, if any of three STATFOR February 2017 scenarios materialises, the traffic will be substantially higher than planned for the rest of RP2. The traffic is expected to exceed the ±2% dead band foreseen in the traffic risk-sharing mechanism and in the <u>high</u> case would even exceed the 10% threshold in the year 2019.					
Terminal costs In nominal terms, actual terminal costs are -2.3% lower than planned. However, since the actual inflation index is also lower than planned (-2.7 p.p.) the actual terminal costs are +0.1% above the planned level when expressed in €2009.					
This slightly higher actual terminal costs than planned in real terms is mainly driven by the METSP (+7.2% or +0.6M€2009). The other reporting entities compensate this effect showing lower actual cost than planned: DFS (-0.2% or -0.4 M€2009), and the NSA (-5.7%, or -0.05 M€2009). DFS being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.					
There are no costs exempt from cost-sharing reported.					



GERMANY: Terminal charging zone

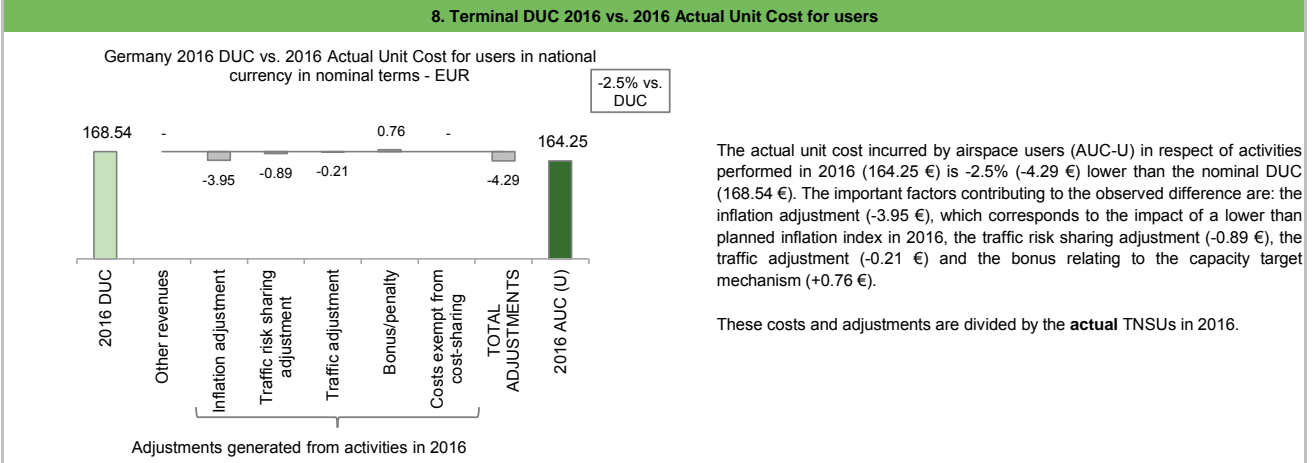
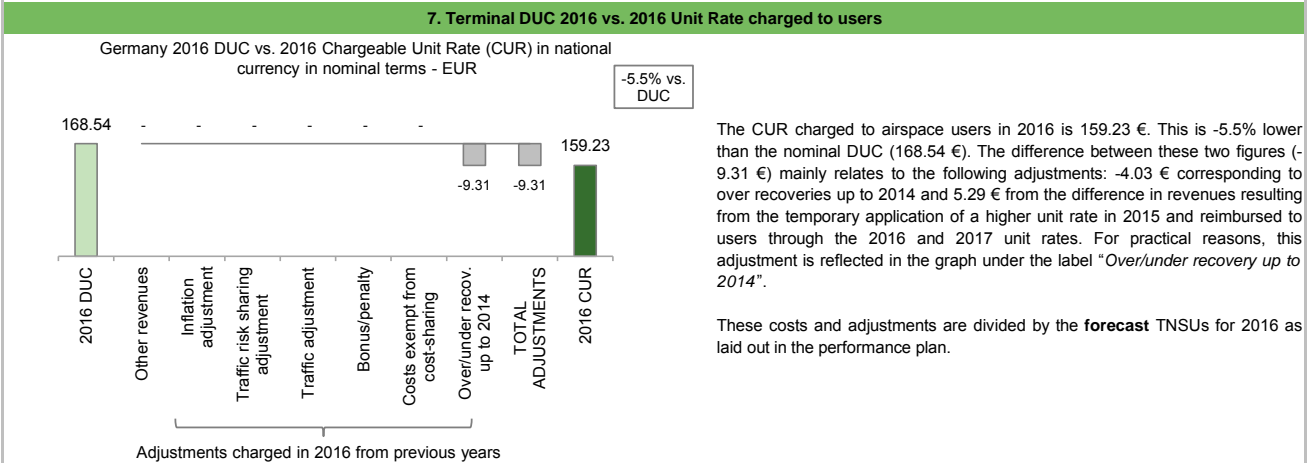
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



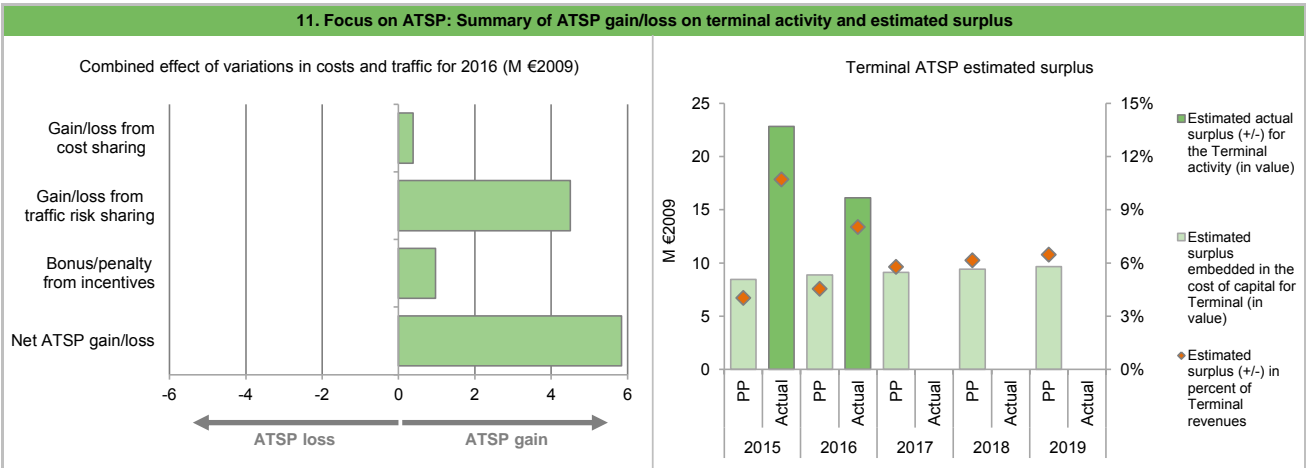
GERMANY: Terminal ATSP (DFS)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	210 177	195 531			
Actual costs for the ATSP	199 370	195 153			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	10 806	379			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	10 806	379			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.0%	2.8%			
Determined costs for the ATSP (PP) - based on actual inflation	212 816	200 353			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	2 186	4 497			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	883	969			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	13 875	5 845			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	362 420	346 978	325 651	309 335	293 544
Estimated proportion of financing through equity (in %)	31.4%	34.3%	37.6%	40.9%	44.2%
Estimated proportion of financing through equity (in value)	113 692	119 173	122 306	126 664	129 641
Estimated proportion of financing through debt (in %)	68.6%	65.7%	62.4%	59.1%	55.8%
Estimated proportion of financing through debt (in value)	248 728	227 805	203 345	182 671	163 903
Cost of capital pre-tax (in value)	16 865	16 516	15 868	15 456	14 985
Average interest on debt (in %)	3.4%	3.4%	3.3%	3.3%	3.2%
Interest on debt (in value)	8 395	7 637	6 757	6 020	5 327
Determined RoE pre-tax rate (in %)	7.5%	7.5%	7.5%	7.5%	7.5%
Estimated surplus embedded in the cost of capital for terminal (in value)	8 470	8 878	9 112	9 437	9 658
Overall estimated surplus (+/-) for the terminal activity	8 470	8 878	9 112	9 437	9 658
Revenue/costs for the terminal activity	210 177	195 531	157 857	153 499	149 272
Estimated surplus (+/-) in percent of terminal revenues	4.0%	4.5%	5.8%	6.1%	6.5%
Estimated ex-ante RoE pre-tax rate (in %)	7.5%	7.5%	7.5%	7.5%	7.5%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	365 861	383 014			
Estimated proportion of financing through equity (in %)	32.9%	36.0%			
Estimated proportion of financing through equity (in value)	120 316	138 064			
Estimated proportion of financing through debt (in %)	67.1%	64.0%			
Estimated proportion of financing through debt (in value)	245 546	244 949			
Cost of capital pre-tax (in value)	16 199	17 193			
Average interest on debt (in %)	2.9%	2.8%			
Interest on debt (in value)	7 235	6 907			
Determined RoE pre-tax rate (in %)	7.5%	7.5%			
Estimated surplus embedded in the cost of capital for terminal (in value)	8 964	10 286			
Net ATSP gain(+)/loss(-) on terminal activity	13 875	5 845			
Overall estimated surplus (+/-) for the terminal activity	22 839	16 130			
Revenue/costs for the terminal activity	213 245	200 997			
Estimated surplus (+/-) in percent of terminal revenues	10.7%	8.0%			
Estimated ex-post RoE pre-tax rate (in %)	19.0%	11.7%			

GERMANY: Terminal ATSP (DFS)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 DFS terminal costs in the TCZ vs. PP

DFS actual terminal costs in the TCZ are -0.2% (-0.4 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- higher staff costs (+3.5%, +5.2 M€2009), in the Additional Information to the June 2017 terminal Reporting Tables it is indicated that DFS implemented a cost reduction programme "by not replacing leaving personnel where not strictly operational necessary" at the same time it indicates that "In 2015 and 2016 salary increase was higher than planned". Since the actual staff cost is higher than the planned, it is then assumed that the second driver mentioned above was larger than the first;
- lower other operating costs (-22.6%, -5.4 M€2009), mainly due to an extraordinary lower actual inflation in 2016 than the foreseen and the related impact on lower operating costs in electricity, heating and the maintenance costs for buildings and technical systems.
- lower depreciation costs (-3.8%, -0.6 M€2009), mainly due to a reduction of the investments planned; and,
- a higher cost of capital (+4.1%, +0.7 M€2009), as indicated in the Additional Information to the June 2017 en-route Reporting Tables, "the increase in cost of capital results from a larger rise in equity than anticipated, due to the good traffic development of the last two years and reduced costs".

DFS 2016 net gain/loss on terminal activity in the TCZ

As shown in box 9, the terminal activity in the TCZ generated a net gain of +5.8 M€2009 in 2016. This is a combination of 3 elements:

- a gain of +0.4 M€2009 as a result of the cost-sharing mechanism;
- a gain of +4.5 M€2009 as a result of traffic risk-sharing mechanism; and
- a gain of +1.0 M€2009, corresponding to a bonus eligible for payment to DFS as part of the capacity target incentive mechanism. This amount corresponds to 0.5% of DFS terminal revenues (based on the ATSP chargeable unit rate in 2016 times the actual TNSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission.

DFS 2016 overall estimated surplus for the terminal activity in the TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in the TCZ mentioned above (+5.8 M€2009) and the surplus embedded in the cost of capital (+10.3 M€2009) amounts to +16.1 M€2009 (8.0% of the 2016 terminal revenues).

The resulting ex-post rate of return on equity is 11.7%, which is higher than the 7.5% planned in the PP.

GERMANY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Germany: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	972 517 385	930 742 228	821 735 846	802 748 084	784 999 985
Real terminal costs (EUR2009)	219 163 171	204 811 176	161 570 590	157 180 161	152 994 086
Real gate-to-gate costs (EUR2009)	1 191 680 556	1 135 553 404	983 306 436	959 928 244	937 994 071
En-route share (%)	81.6%	82.0%	83.6%	83.6%	83.7%
Germany: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	919 323 427	881 497 589			
Real terminal costs (EUR2009)	209 234 652	204 998 404			
Real gate-to-gate costs (EUR2009)	1 128 558 079	1 086 495 993			
En-route share (%)	81.5%	81.1%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009) in value	-63 122 477	-49 057 411			
in %	-5.3%	-4.3%			
En-route share in p.p.	-0.1%	-0.8%			
2. Share of en-route and terminal in gate-to-gate actual costs (2016)					
<p>In 2016, actual gate-to-gate ANS costs are -4.3% (-49.1 M€2009) lower than planned due to a combination of lower en-route costs (-5.3%, or -49.2 M€2009) and slightly higher terminal costs (+0.1% or +0.2 M€2009).</p>					
<p>The actual share of en-route in gate-to-gate ANS costs (81.1%) is just slightly lower than planned in the PP for 2016 (82.0%).</p> <p>For DFS, the estimated gate-to-gate economic surplus in 2016 amounts to 129.8 M€2009 (see boxes 10 for the detailed analysis at charging zone level), corresponding to 13.3% of gate-to-gate ANS revenues.</p>					
3. Technical notes on en-route and terminal information reported by Germany					

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Luxembourg

Version: 1.1

Date: 9 October 2017

LUXEMBOURG

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	58	B	B	B	C	B
ANA LUX	74	C	D	C	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	78%	78%
ATM Specific Occurrences (ATM-S)		87%
Source of RAT data:	DAC	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	4	5
Legal/Judiciary	1	6
Occurrence reporting and Investigation	2	0
TOTAL	7	11
ANA LUX	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	20	4

Observations

One out of the four reviewed EoSM Components/areas of the State meet the 2019 EoSM target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only four are below Level C.

LUXEMBOURG

Monitoring of Airports Contribution to ENVIRONMENT for 2016

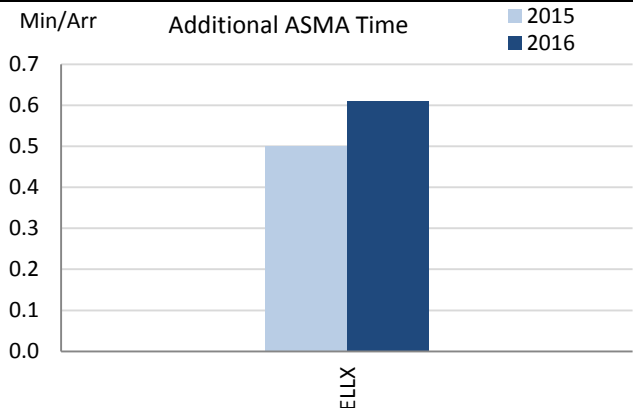
1. Overview

The scope of RP2 monitoring for Luxembourg comprises the main airport (ELLX).
 In 2016 the provision of data did not allow for the calculation of additional taxi-out times. However currently the Airport Operator Data Flow is fully implemented and both environment indicators will be properly monitored as of 2017.
 In terms of traffic, almost 8% increase in traffic. Luxembourg adequately contributes to the FABEC and European performance.

2. Additional Taxi-Out Time

Due to the lack of data, the additional taxi-out time indicator at Luxembourg cannot be monitored for 2016.

3. Additional ASMA Time



Luxembourg has experienced a 22% increase in the additional time in terminal airspace, in line with almost 8% increase in traffic. It remains well below the average value for RP2 airports and commensurate with its level of traffic.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Luxembourg	ELLX	n/a	n/a				0.50	0.61			

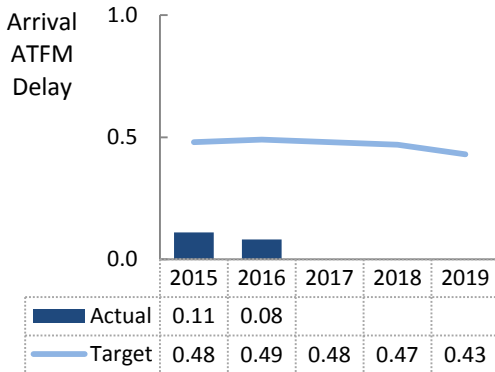
LUXEMBOURG

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Luxembourg, ANS at Luxembourg airport (ELLX) are subject to RP2. Luxembourg accrues a negligible value of arrival ATFM delay in 2015 and 2016 demonstrating a widely unconstrained capacity. The established national target is fully met.

2. Arrival ATFM Delay

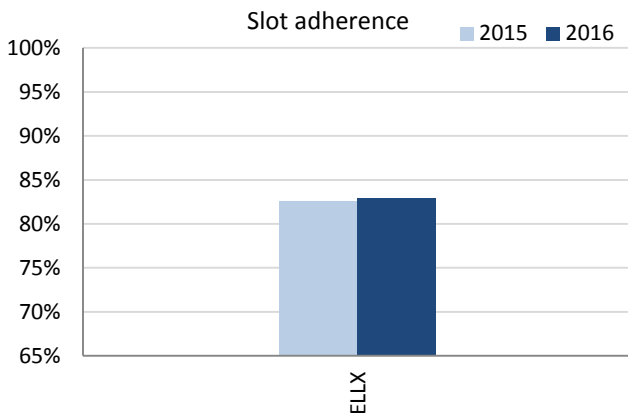


The national target on arrival ATFM delay has been met in 2015 and 2016. The achieved performance at Luxembourg (ELLX) exceeds the set target by a factor of 4-5. The observed performance shows a widely unconstrained capacity at ELLX given the current level and pattern of air traffic.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FABEC performance plan establishes a national target on arrival ATFM delay for Luxembourg. The established target (all causes) ranges consistently about 1/3 minute above the historic performance observed at Luxembourg (ELLX). For ANS attributable delay causes (i.e. CRSTMP) this buffer increases to about 0.45 min/arr. Luxembourg has not established an incentive scheme for the national target on arrival ATFM delay. Luxembourg reports that an incentive scheme has been developed, but still needs to be approved and communicated to stakeholders. It might be applied in future, possibly in 2018.

4. ATFM Slot Adherence



The adherence to ATFM slots remained stable just under 83% (i.e. 2015: 82.6% vs 2016: 82.9%) for 2015 and 2016. Considering the level of traffic, this however, is a reasonable poor compliance with ATFM slots with an impact on network predictability.

5. Pre-departure Delay

Luxembourg (ELLX) accrues a negligible share of pre-departure delay, although during some months there is a high share of unreported delay which requires further validation.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Luxembourg	ELLX	0.11	0.08				82.6%	82.9%				0.02	0.01			

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Netherlands

Version: 1.1

Date: 9 October 2017

NETHERLANDS

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	64	C	B	B	C	C
LVNL	85	C	E	D	D	C
MUAC	76	C	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	96%	100%
Runway Incursions (RIs)	56%	100%
ATM Specific Occurrences (ATM-S)		0%
Source of RAT data:	ILT	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	7	0
Occurrence reporting and Investigation	1	1
TOTAL	15	3
LVNL	Number of questions answered	
	YES	NO
Policy and its implementation	10	3
Legal/Judiciary	3	0
Occurrence reporting and Investigation	7	1
TOTAL	20	4
MUAC	Number of questions answered	
	YES	NO
Policy and its implementation	8	5
Legal/Judiciary	1	2
Occurrence reporting and Investigation	5	3
TOTAL	14	10

Observations
<p>Two out of the four reviewed EoSM Components/areas of the State meet the 2019 EoSM target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only three are below Level C.</p>

NETHERLANDS

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

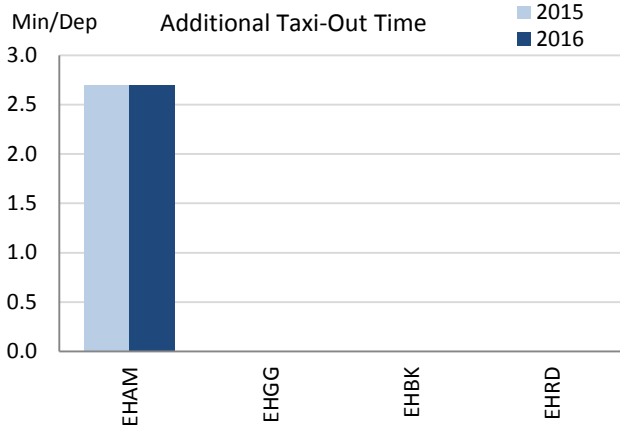
For the Netherlands, the scope of the performance monitoring of terminal services under RP2 comprises a total of 4 airports. At the time being the airport operator flow is only established for EHAM.

In terms of traffic, Amsterdam has become the busiest airport in Europe with a traffic increase of around 6% in 2016.

Despite this traffic increase, and in relation to the additional taxi-out time, ANS at EHAM keeps being the best-in-class for airports with a yearly movement above 275000 flights. Regarding the additional time in the terminal airspace, EHAM outperforms the average RP2 airports, even being the busiest airport in Europe.

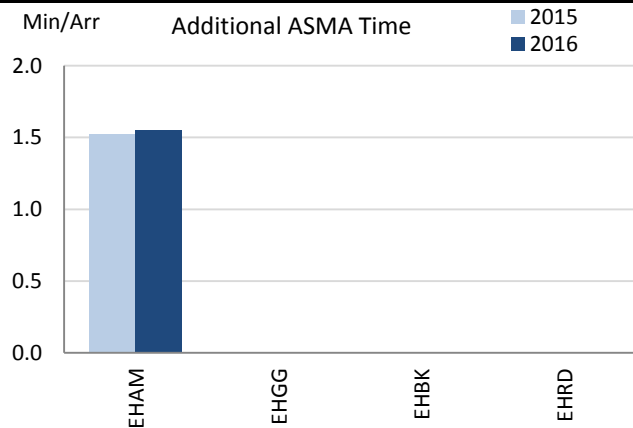
The Netherlands shall encourage the respective airport reporting entities to initiate the implementation of the Airport Operator Data Flow.

2. Additional Taxi-Out Time



Without variation with respect to last year despite the increase in traffic, EHAM keeps showing the best additional taxi-out times for the busiest airports in Europe.

3. Additional ASMA Time



The locally achieved performance at EHAM regarding additional ASMA times is 1.55 min/arr. and remains below the European average of 1.83 min/arr. in 2015.

Amsterdam is only outperformed by one airport in its category (LFPG).

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Amsterdam/ Schiphol	EHAM	2.70	2.70				1.52	1.55			
Groningen	EHGG	n/a	n/a				n/a	n/a			
Maastricht-Aachen	EHBK	n/a	n/a				n/a	n/a			
Rotterdam	EHRD	n/a	n/a				n/a	n/a			

NETHERLANDS

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	N/A	N/A	N/A	N/A	N/A	Because there are two ANSPs in the Netherlands, LVNL and EUROCONTROL (MUAC), the Netherlands did not set a national target. Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.09	0.29				

National capacity incentive scheme

Incentive scheme targets:
 The capacity delay target at FAB level was set at an average of 0.38 min/flight for CRSTMP causes ATFM delays.
 LVNL’s broken down target was set at 0.14 min/flight.
 EUROCONTROL (MUAC) broken down target was set at 0.14 min/flight

2016 achievement (As reported by FABEC)
 - FABEC: 0.67 min/flight for CRSTMP ATFM delays
 - LVNL: 0.06 min/flight for CRSTMP delays
 - EUROCONTROL (MUAC): 0.29 min/flight for CRSTMP delays

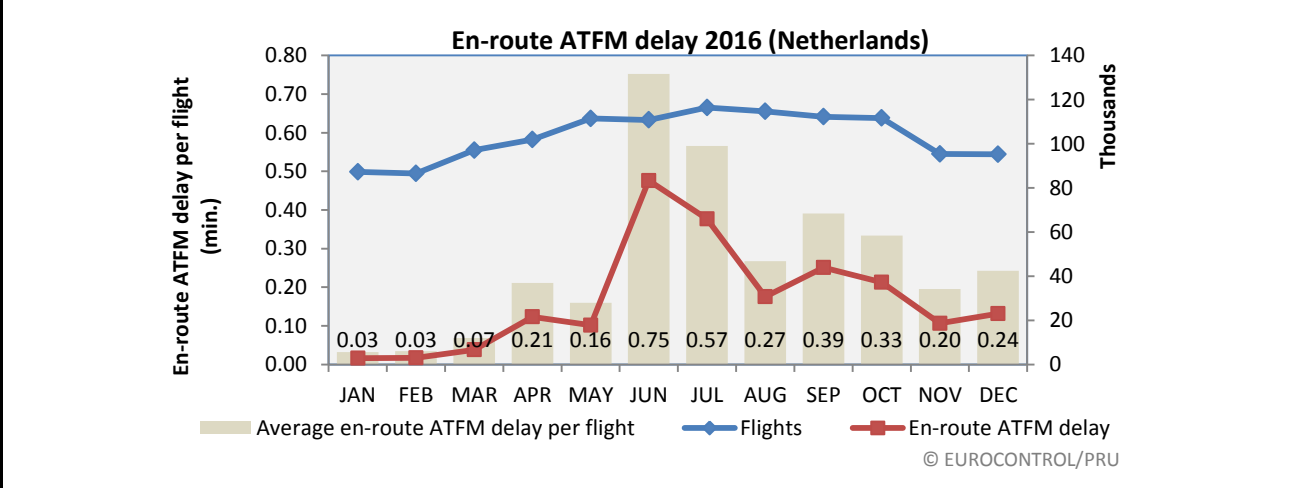
BONUS / MALUS
 LVNL achieved their local target for CRSTMP delays and were therefore exempt from any penalty.
 The percentage of malus for EUROCONTROL (MUAC) was -0.5% of total ANSP’s revenue in 2015, which equates to a penalty of €794,361.44.

NOTE: The penalty for EUROCONTROL (MUAC) is applicable because of the performance over the four MUAC States (Belgium, Luxembourg, Germany and the Netherlands). The breakdown of the MUAC penalty per State is: Belgium €248,800.36; Luxembourg €7,694.98; Germany €377,536.96 and the Netherlands €160,329.15.

Compliance issues relating to national capacity incentive scheme

The PRB noted several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report

Observations regarding national capacity performance



En-route ATFM delay per flight (Netherlands)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.04	0.04	0.18	0.12	0.17	0.11	0.12	0.09	0.29

The deterioration of en route capacity performance in the Netherlands in 2016 (0,29 minutes per flight) in comparison with 2015 (0,09 minutes per flight) is noted. Traffic increased from 2015 levels by approximately 6% whereas ATFM delays rose by more than 200% year on year. It is noted that the Network Manager highlights the probability of capacity shortfalls in MUAC 2017 - 2019 based on the current capacity plans (NOP 2017-2021). It is noted that the FABEC report referred to a potential resectorisation between DECO and HANNOVER sector groups that may improve capacity performance in Dutch airspace. It is noted that FABEC reports the cancellation of capacity enhancement projects despite repeated warnings that capacity plans, and deployment of available capacity, in the FABEC airspace were not consistent with the required level of performance.

Planning and Effective Use of CDRs

Such data is not available at national level (or FAB) level. CURA (civil use of released airspace) and PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Monitoring) tools are currently not designed to provide rate of planning of conditional routes (CDRs) and effective use of CDRs. Indeed, only the Special Use of Airspace (SUA) can be evaluated. The Netherlands is therefore currently evaluating SUA aggregated indicators matching IR (EC) 390/2013 to replace CDR-based indicators.

Observations on Planning and effective Use of CDRs

It is noted that the Netherlands, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 60%.
 The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 13%
 Procedure 3 is applicable within the State and resulted in an effective usage of 83%

Observations on Effective booking procedures

The Netherlands reports that airspace is very often released at tactical level (ASM level 3), however tactical releases are yet not always recorded in ASM systems and also not always notified to the Network Manager. No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

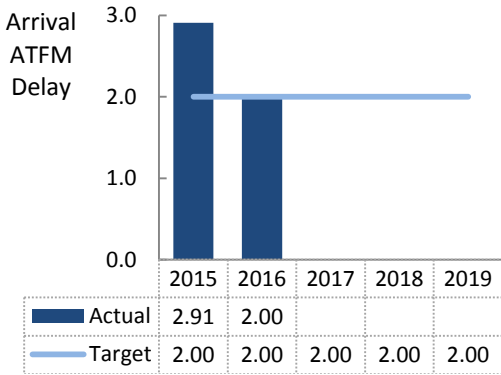
NETHERLANDS

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In The Netherlands, ANS at a total of 4 airports are subject to RP2. The aggregated national performance is driven by Amsterdam/Schiphol (EHAM). With a significant improvement at EHAM, the target is met in 2016. Slot adherence improved significantly for Groningen (EHGG) and varied mildly at the other airports. A consistent monitoring of pre-departure delay is not yet possible. The implementation of the Airport Operator Data Flow is on-going at EHAM, while for the other airports the launch of the implementation is still pending.

2. Arrival ATFM Delay

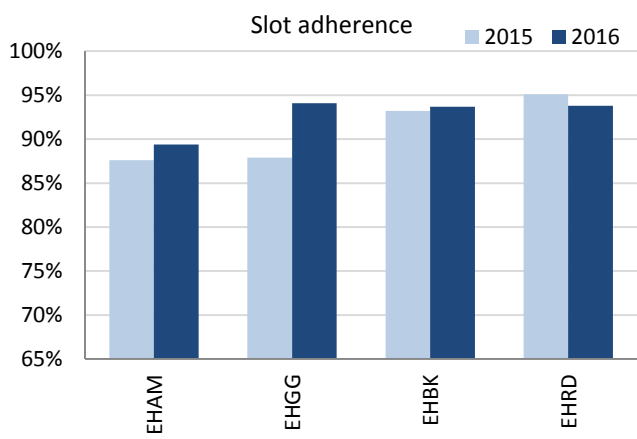


Amsterdam/Schiphol (EHAM), as the major European hub in terms of IFR movements in 2016, is a significant driver of the aggregated national performance. The level of accrued arrival ATFM delay decreased from 3.18 min/arr. in 2015 to 2.17 min/arr. in 2016. With no additional delay accumulated at the other airports, the national value ranges at 2.00 min/arr. and meets the established target.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FABEC performance plan establishes a national target on arrival ATFM delay for The Netherlands. The plan set out a national target (all causes) of 2.0 min/arr. with a breakdown for Amsterdam/Schiphol (EHAM) of 0.5 min/arr. (CRSTMP causes). A respective incentive scheme is implemented by The Netherlands, based on CRSTMP performance at EHAM. With the achieved performance attributed to CRSTMP causes, a bonus is awarded to LVNL.

4. ATFM Slot Adherence



ATFM slot adherence varies across the Dutch airports. For 2016, Groningen (EHGG), Maastricht-Aachen (EHBK), and Rotterdam (EHRD) achieve a compliance of 94%. EHGG improved by 6% in comparison to 2015. Amsterdam/Schiphol (EHAM) ranges slightly under 90% with a small improvement of 1.8%.

5. Pre-departure Delay

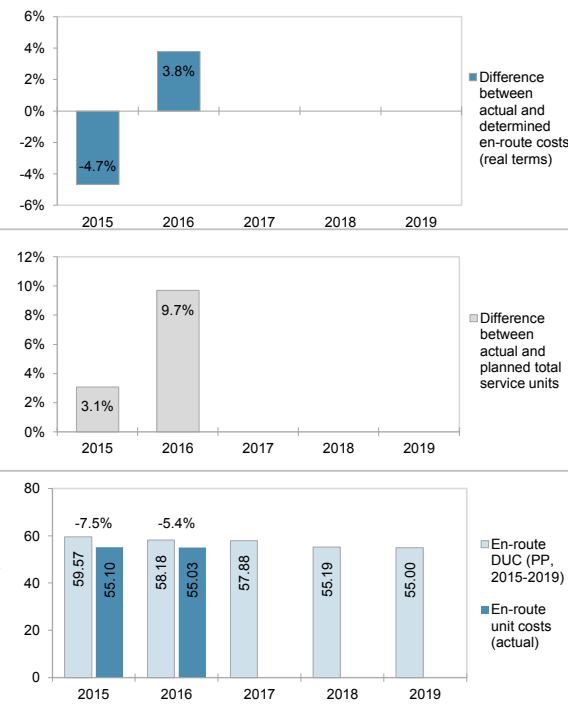
The monitoring of pre-departure delay is dependent on the establishment of the Airport Operator Data Flow. At the time being none of the Dutch airports has successfully transitioned to the APDF reporting. Work is on-going for Amsterdam/Schiphol (EHAM). The launch of the implementation is pending for the other airports.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Amsterdam/ Schiphol	EHAM	3.18	2.17				87.6%	89.4%				n/a	n/a			
Groningen	EHGG	0.00	0.00				87.9%	94.1%				n/a	n/a			
Maastricht-Aachen	EHBK	0.03	0.00				93.2%	93.7%				n/a	n/a			
Rotterdam	EHRD	0.01	0.00				95.1%	93.8%				n/a	n/a			

NETHERLANDS: En-route charging zone

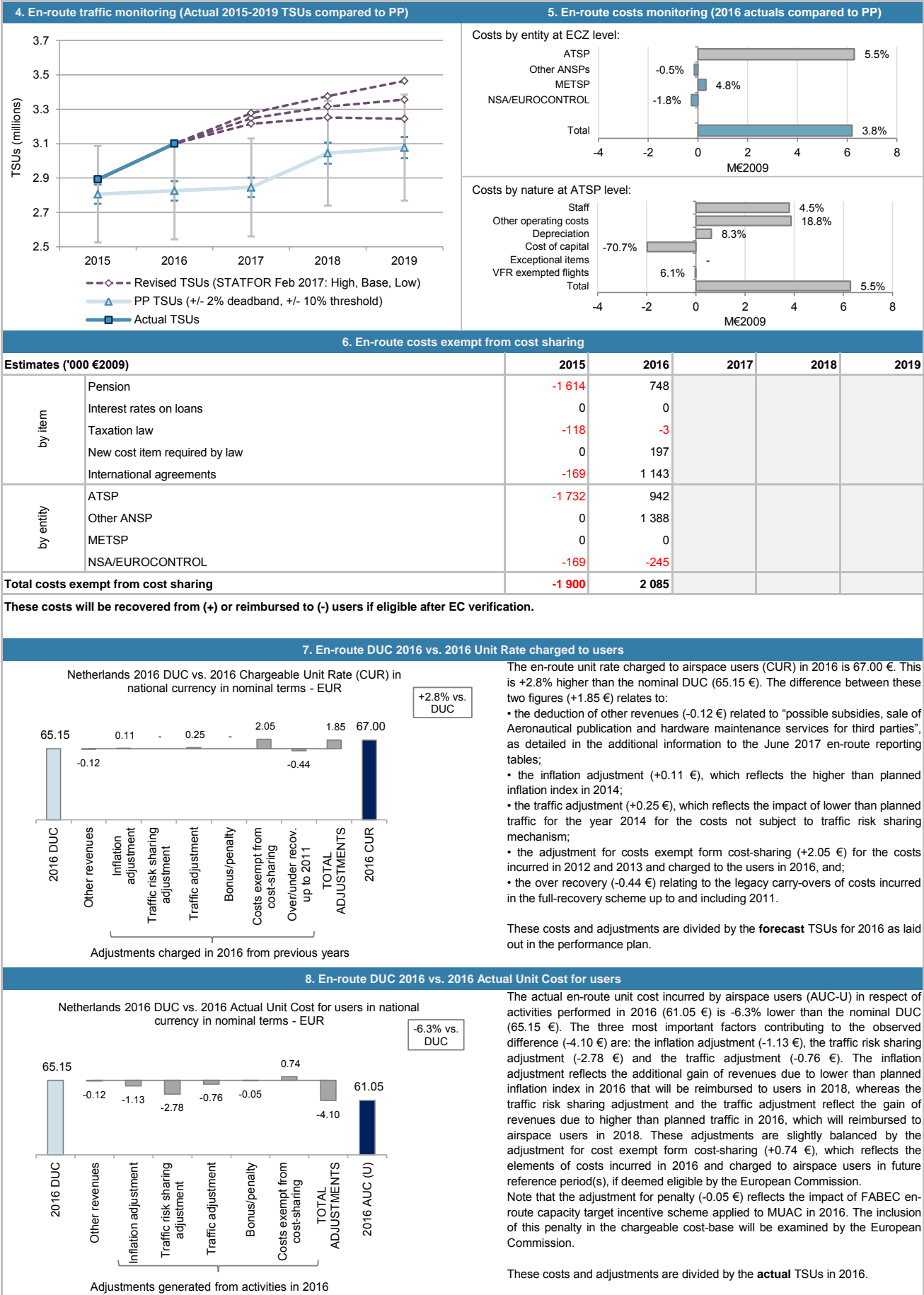
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Netherlands ECZ represents 2.7% of the SES en-route ANS determined costs in 2016						
· ATSP: LVNL						
· FAB: FABEC						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Netherlands: Data from RP2 Performance Plan (EC Decision 2017/553 of 22 March 2017)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		184 921 748	184 103 594	187 092 113	193 763 267	198 069 117
Inflation %		1.0%	1.2%	1.4%	1.5%	1.5%
Inflation index (100 in 2009)		110.6	112.0	113.6	115.3	117.0
Real en-route costs (EUR2009)		167 178 324	164 400 112	164 697 149	168 065 588	169 244 781
Total en-route Service Units		2 806 192	2 825 835	2 845 616	3 045 000	3 077 000
Real en-route unit cost per Service Unit (EUR2009)		59.57	58.18	57.88	55.19	55.00
Netherlands: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		174 897 819	187 392 520			
Inflation %		0.2%	0.1%			
Inflation index (100 in 2009)		109.7	109.847062			
Real en-route costs (EUR2009)		159 378 607	170 594 020			
Total en-route Service Units		2 892 654	3 099 952			
Real en-route unit cost per Service Unit (EUR2009)		55.10	55.03			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-10 023 928	3 288 925			
	in %	-5.4%	1.8%			
Inflation %	in p.p.	-0.8 p.p.	-1.1 p.p.			
	in p.p.	-0.9 p.p.	-2.1 p.p.			
Real en-route costs (EUR2009)	in value	-7 799 718	6 193 908			
	in %	-4.7%	3.8%			
Total en-route Service Units	in value	86 462	274 117			
	in %	3.1%	9.7%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-4.48	-3.15			
	in %	-7.5%	-5.4%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (55.03 €2009) is -5.4% lower than planned in the PP (58.18 €2009). This difference results from the combination of significantly higher than planned TSUs (+9.7%) and higher than planned en-route costs in real terms (+3.8%, or +6.2 M€2009).						
En-route service units						
The difference between actual and planned TSUs (+9.7%) falls outside the ±2% dead band but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues is therefore shared between the main ATSP (LVNL) and the airspace users, the former retaining a gain of +5.1 M€2009.						
Based on the STATFOR February 2017 base TSU growth scenario, the Netherlands en-route TSUs deviation from the RP2 forecasts is expected to exceed the +10% threshold in 2017 and to remain just below it for the subsequent years of RP2 (2018-2019).						
En-route costs						
In nominal terms, actual en-route costs are +1.8% (+3.3 M€) higher than planned. However, since the actual inflation index is lower than planned (-2.1 p.p.), actual en-route costs are +3.8% (+6.2 M€2009) higher than the plan in real terms.						
The higher than planned en-route costs in real terms are driven by higher costs for LVNL (+5.5%, or +6.3 M€2009) and MET service provider (+4.8%, or +0.3 M€2009). Contrarily, actual MUAC costs (-0.5%, or -0.1 M€2009) and NSA/EUROCONTROL costs (-1.8%, or -0.3 M€2009) are lower than planned in real terms. A detailed analysis at the main ATSP level (LVNL) is provided in Box 12.						
For MUAC costs allocated to the Netherlands, the lower actual en-route costs in real terms (-0.5%) reflect a combination of slightly higher staff costs (+3.1%, or +0.7 M€2009), lower other operating costs (-5.4%, or -0.2 M€2009), lower depreciation costs (i.e. -23.6%, or -0.5 M€2009) and lower cost of capital (-63.3%, or -0.1 M€2009).						
Costs exempt from cost-sharing are reported for a total amount of +2.1 M€2009 relating to pension costs (+0.7 M€2009), national taxation law (-0.003 M€2009), new cost item required by law (+0.2 M€2009) and EUROCONTROL costs (+1.1 M€2009). These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed eligible by the European Commission.						



NETHERLANDS: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



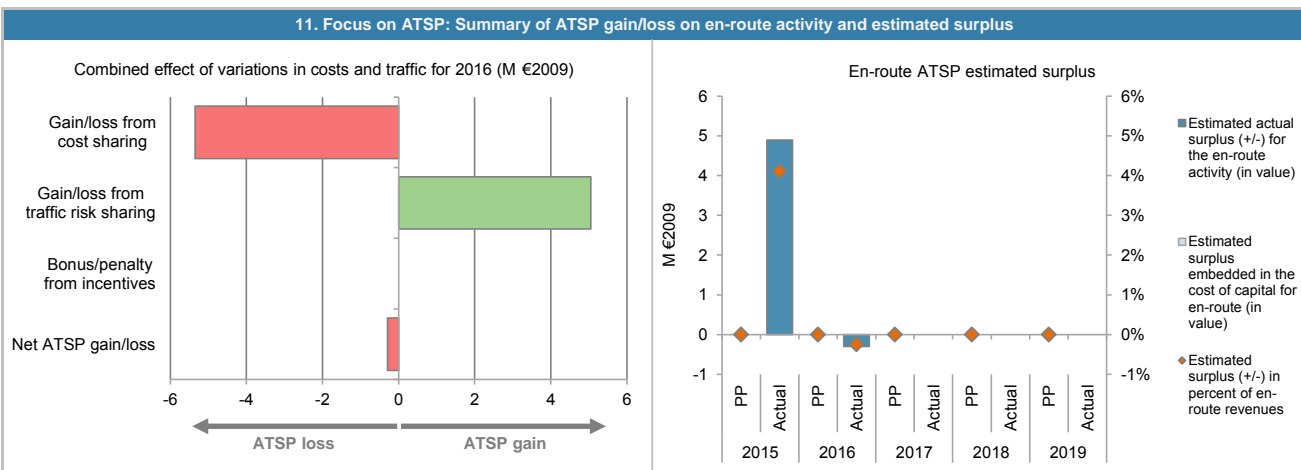
NETHERLANDS: En-route ATSP (LVNL)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	117 998	114 946			
Actual costs for the ATSP	114 137	121 236			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	3 862	-6 290			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-1 732	942			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	2 130	-5 347			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	3.1%	9.7%			
Determined costs for the ATSP (PP) - based on actual inflation	118 940	117 184			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	2 765	5 051			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	4 895	-297			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	83 092	83 822	86 100	94 793	87 082
Estimated proportion of financing through equity (in %)	-	-	-	-	-
Estimated proportion of financing through equity (in value)	0	0	0	0	0
Estimated proportion of financing through debt (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through debt (in value)	83 092	83 822	86 100	94 793	87 082
Cost of capital pre-tax (in value)	3 033	2 799	2 657	2 750	2 757
Average interest on debt (in %)	3.6%	3.3%	3.1%	2.9%	3.2%
Interest on debt (in value)	3 033	2 799	2 657	2 750	2 757
Determined RoE pre-tax rate (in %)	-	-	-	-	-
Estimated surplus embedded in the cost of capital for en-route (in value)	0	0	0	0	0
Overall estimated surplus (+/-) for the en-route activity	0	0	0	0	0
Revenue/costs for the en-route activity	117 998	114 946	115 043	117 843	118 556
Estimated surplus (+/-) in percent of en-route revenues	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated ex-ante RoE pre-tax rate (in %)	N/Appl	N/Appl	N/Appl	N/Appl	N/Appl
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	70 805	86 289			
Estimated proportion of financing through equity (in %)	-	-			
Estimated proportion of financing through equity (in value)	0	0			
Estimated proportion of financing through debt (in %)	100.0%	100.0%			
Estimated proportion of financing through debt (in value)	70 805	86 289			
Cost of capital pre-tax (in value)	1 228	819			
Average interest on debt (in %)	1.7%	0.9%			
Interest on debt (in value)	1 228	819			
Determined RoE pre-tax rate (in %)	-	-			
Estimated surplus embedded in the cost of capital for en-route (in value)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity	4 895	-297			
Overall estimated surplus (+/-) for the en-route activity	4 895	-297			
Revenue/costs for the en-route activity	119 031	120 939			
Estimated surplus (+/-) in percent of en-route revenues	4.1%	-0.2%			
Estimated ex-post RoE pre-tax rate (in %)	N/Appl	N/Appl			

NETHERLANDS: En-route ATSP (LVNL)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 LVNL en-route costs vs. PP

In 2016, LVNL actual en-route costs are +5.5% (+6.3 M€2009) higher, in real terms, than planned in the PP. According to the additional information to June 2017 en-route reporting tables, this results from the combination of:

- higher staff costs (+4.5%, or +3.8 M€2009), mainly due to a change in premium rates for "pensions and national sickness assurance and other employee's assurance laws", higher than planned contributions to the early retirement scheme provision and higher cost for temporary contracts and ATCO training;
- higher other operating costs (+18.8%, or +3.9 M€2009), mainly due to "hiring of external staff for projects";
- higher depreciation costs (+8.3%, or +0.6 M€2009) due to "higher costs of the new VCS system which was operational from March 2015"; and,
- a lower cost of capital (-70.7%, or -2.0 M€2009), due to the "postponement of the implementation of some investments and lower interest rate". Based on the information provided in the FABEC Monitoring Report 2016, the actual capex for 2016 is -38.0% lower, in nominal terms, than planned in PP.

LVNL net gain/loss on en-route activity in 2016

As shown in Box 9, LVNL generated a net loss of -0.3 M€2009 on the en-route activity. This is a combination of two elements:

- a loss of -5.3 M€2009 arising from the cost-sharing mechanism; and
- a gain of +5.1 M€2009 arising from the traffic risk-sharing mechanism.

The loss from cost-sharing mentioned above (-5.3 M€2009) includes amounts reported by LVNL for costs exempt from cost-sharing (+0.9 M€2009). Should these costs not be deemed eligible by the European Commission, LVNL would incur a net loss of -1.2 M€2009 for the en-route activity in 2016.

LVNL overall estimated surplus for the en-route activity

Based on the additional information to June 2017 en-route reporting tables, "LVNL is an autonomous government body. Its assets are financed by debts (100%). LVNL has an equity capital, the only objective of LVNL's equity capital is to enable LVNL to recover losses resulting from the traffic volume risk, the cost risk and the capacity incentive schemes, both in the en-route and the terminal charging zone. For that reason, the WACC is only based on the interests on debts." Because LVNL has no return on equity, no ex-ante estimated surplus was embedded in the cost of capital provided the PP for RP2.

Ex-post, the overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-0.3 M€2009) is negative (the loss corresponds to 0.2% of the 2016 en-route revenues).

NETHERLANDS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Netherlands TCZ represents 05% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	LVNL	· Airports with fewer than 70,000 IFRs ATMs:		3	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	4,	of which:	· Airports with more than 225,000 IFRs ATMs:	1	
2. Terminal DUC monitoring at Charging Zone level					
Netherlands: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	59 241 306	58 399 022	59 894 041	61 576 384	62 857 351
Inflation %	1.0%	1.2%	1.4%	1.5%	1.5%
Inflation index (100 in 2009)	110.6	112.0	113.6	115.3	117.0
Real terminal costs (EUR2009)	53 557 045	52 148 932	52 724 712	53 409 871	53 709 931
Total terminal Service Units	354 510	360 000	361 000	362 000	363 000
Real terminal unit cost per Service Unit (EUR2009)	151.07	144.86	146.05	147.54	147.96
Netherlands: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	57 733 000	61 793 371			
Inflation %	0.2%	0.1%			
Inflation index (100 in 2009)	109.7	109.8			
Real terminal costs (EUR2009)	52 610 176	56 254 004			
Total terminal Service Units	369 519	390 467			
Real terminal unit cost per Service Unit (EUR2009)	142.37	144.07			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -1 508 306	3 394 349			
	in % -2.5%	5.8%			
Inflation %	in p.p. -0.8 p.p.	-1.1 p.p.			
Inflation index (100 in 2009)	in p.p. -0.9 p.p.	-2.1 p.p.			
Real terminal costs (EUR2009)	in value -946 868	4 105 072			
	in % -1.8%	7.9%			
Total terminal Service Units	in value 15 009	30 467			
	in % 4.2%	8.5%			
Real terminal unit cost per Service Unit (EUR2009)	in value -8.70	-0.79			
	in % -5.8%	-0.5%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on the Netherlands Terminal Charging Zone (TCZ) comprising 4 airports: Amsterdam Airport Schiphol (EHAM), Rotterdam The Hague Airport (EHRD), Groningen Airport Eelde (EHGG) and Maastricht Aachen Airport (EHBK).</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (144.07 €2009) is -0.5% lower than planned in the PP (144.86 €2009). This difference results from the combination of significantly higher than planned TNSUs (+8.5%) and higher than planned terminal costs in real terms (+7.9%, or +4.1 M€2009).</p> <p>Terminal service units Traffic risk sharing applies in the Netherlands TCZ. The difference between actual and planned TNSUs (+8.5%) falls outside the ±2% dead band but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. As a result, the gain of additional terminal revenues due to higher than planned traffic is shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +2.0 M€2009. It is noted that, based on the STATFOR February 2017 base TNSU growth scenario, TNSUs in the Netherlands are expected to exceed the +10% threshold for the rest of RP2 (2017-2019).</p> <p>Terminal costs In nominal terms, actual terminal costs are +5.8% (+3.4 M€) higher than planned. However, since the actual inflation index is lower than planned (-2.1 p.p.), actual terminal costs are +7.9% (+4.1 M€2009) above the plan when expressed in real terms. The higher than planned terminal costs in real terms are driven by an increase across all the reporting entities: LVNL (+8.0%, or +4.0 M€2009) and the MET service provider (+4.8%, or +0.1 M€2009). A detailed analysis at ATSP level is provided in Box 12.</p> <p>Costs exempted from cost-sharing for Netherlands TCZ are reported for a total amount of +0.5 M€2009 relating to pension costs (+0.4 M€2009), national taxation law (-0.001 M€2009) and new cost item required by law (+0.1 M€2009). These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>					

NETHERLANDS: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	8.0%
Other ANSPs	-
METSP	4.8%
NSA	-
Total	7.9%

Costs by nature at ATSP level:

Staff	7.8%
Other operating costs	18.9%
Depreciation	9.2%
Cost of capital	-73.6%
Exceptional items	-
VFR exempted flights	-
Total	8.0%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	-989	423			
	Interest rates on loans	0	0			
	Taxation law	0	-1			
	New cost item required by law	-51	86			
	International agreements	0	0			
by entity	ATSP	-1 041	509			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		-1 041	509			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Netherlands 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

00% vs. DUC

The terminal unit rate charged to airspace users (CUR) in 2016 is 161.51 €. This is -0.4% lower than the nominal DUC (162.22 €). The difference between these two figures (-0.71 €) reflects the adjustment for other revenues which, according to the additional information to June 2017 terminal reporting tables, reflect the "sale of Aeronautical publications and hardware maintenance services for third parties".

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Netherlands 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

-05% vs. DUC

The actual terminal unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (153.91 €) is -5.1% lower than the nominal DUC (162.22 €). The most important factors contributing to the observed difference (-8.31 €) are: the inflation adjustment (-2.86 €), which reflects the additional gain due to lower than planned inflation index in 2016, and the traffic risk sharing adjustment (-6.58 €), which reflects the gain in revenues due to higher than planned traffic in 2016. Both the adjustments will be carried-over and reimbursed to airspace users in 2018. These are slightly balanced by the adjustment for cost exempt from cost-sharing (+1.43 €), which will be charged to the users in future reference period(s), if deemed eligible by the European Commission.

Note that adjustment for bonus (+0.75 €) reflects the impact of a terminal capacity incentive scheme for LVNL. The inclusion of this bonus in the chargeable cost-base will be examined by the European Commission.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

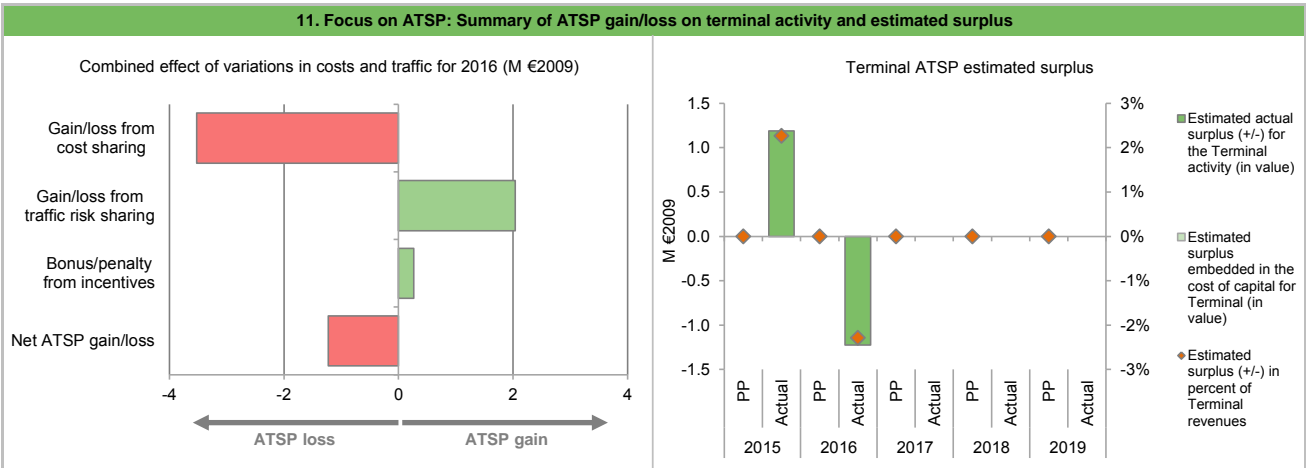
NETHERLANDS: Terminal ATSP (LVNL)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	52 080	50 708			
Actual costs for the ATSP	51 251	54 745			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	828	-4 036			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-1 041	509			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-212	-3 528			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	4.2%	8.5%			
Determined costs for the ATSP (PP) - based on actual inflation	52 496	51 695			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 402	2 036			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	267			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	1 189	-1 225			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	36 299	36 619	37 614	41 412	38 043
Estimated proportion of financing through equity (in %)	-	-	-	-	-
Estimated proportion of financing through equity (in value)	0	0	0	0	0
Estimated proportion of financing through debt (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through debt (in value)	36 299	36 619	37 614	41 412	38 043
Cost of capital pre-tax (in value)	1 320	1 220	1 264	1 339	1 338
Average interest on debt (in %)	3.6%	3.3%	3.4%	3.2%	3.5%
Interest on debt (in value)	1 320	1 220	1 264	1 339	1 338
Determined RoE pre-tax rate (in %)	-	-	-	-	-
Estimated surplus embedded in the cost of capital for terminal (in value)	0	0	0	0	0
Overall estimated surplus (+/-) for the terminal activity	0	0	0	0	0
Revenue/costs for the terminal activity	52 080	50 708	51 324	52 047	52 385
Estimated surplus (+/-) in percent of terminal revenues	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated ex-ante RoE pre-tax rate (in %)	N/Appl	N/Appl	N/Appl	N/Appl	N/Appl
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	31 705	33 894			
Estimated proportion of financing through equity (in %)	-	-			
Estimated proportion of financing through equity (in value)	0	0			
Estimated proportion of financing through debt (in %)	100.0%	100.0%			
Estimated proportion of financing through debt (in value)	31 705	33 894			
Cost of capital pre-tax (in value)	549	322			
Average interest on debt (in %)	1.7%	0.9%			
Interest on debt (in value)	549	322			
Determined RoE pre-tax rate (in %)	-	-			
Estimated surplus embedded in the cost of capital for terminal (in value)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity	1 189	-1 225			
Overall estimated surplus (+/-) for the terminal activity	1 189	-1 225			
Revenue/costs for the terminal activity	52 441	53 520			
Estimated surplus (+/-) in percent of terminal revenues	2.3%	-2.3%			
Estimated ex-post RoE pre-tax rate (in %)	N/Appl	N/Appl			

NETHERLANDS: Terminal ATSP (LVNL)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 LVNL terminal costs in the TCZ vs. PP

LVNL actual terminal costs in the TCZ are +8.0% (+4.0 M€2009) higher, in real terms, than planned in the PP. According to the additional information to June 2017 terminal reporting tables, this results from the combination of:

- higher staff costs (+7.8%, or +2.9 M€2009), mainly due to a change in premium rates for "pensions and national sickness assurance and other employee's assurance laws", higher than expected contribution to the early retirement scheme provision and recruitment of additional staff through temporary contracts;
- higher other operating costs (+18.9%, or +1.8 M€2009), mainly due to "hiring of external staff for projects";
- higher depreciation costs (+9.2%, or +0.3 M€2009); and,
- a significantly lower cost of capital (-73.6% or -0.9 M€2009), due to the "postponement of the implementation of some investments".

LVNL 2016 net gain/loss on terminal activity in the TCZ

As shown in Box 9, the terminal activity in the TCZ generated a net loss of -1.2 M€2009 in 2016. This is a combination of three elements:

- a loss of -3.5 M€2009 as a result of the cost-sharing mechanism;
- a gain of +2.0 M€2009 as a result of traffic risk-sharing mechanism; and
- a gain of +0.3 M€2009, corresponding to a bonus for LVNL as part of the terminal capacity target incentive mechanism. This amount corresponds to 0.5% of LVNL terminal revenues. The inclusion of this bonus in the chargeable cost base will be examined by the European Commission.

The loss from cost-sharing mentioned above (-3.5 M€2009) includes amounts reported by LVNL for costs exempt from cost-sharing (+0.5 M€2009). Should these costs not be deemed eligible by the European Commission, LVNL would generate a net loss of -1.7 M€2009 for the terminal activity in 2016.

LVNL 2016 overall estimated surplus for the terminal activity in the TCZ

Based on the additional information to June 2017 terminal reporting tables, "LVNL is an autonomous government body. Its assets are financed by debts (100%). LVNL has an equity capital. The only objective of LVNL's equity capital is to enable LVNL to recover losses resulting from the traffic volume risk, the cost risk and the capacity incentive schemes, both in the en route and the terminal charging zone. For that reason, the WACC is only based on the interests on debts." Because LVNL has no return on equity, no ex-ante estimated surplus was embedded in the cost of capital provided the NPP for RP2.

Ex-post, the overall estimated surplus taking into account the net loss from the terminal activity mentioned above (-1.2 M€2009) is negative (the loss corresponds to 2.3% of the 2016 terminal revenues).

NETHERLANDS: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

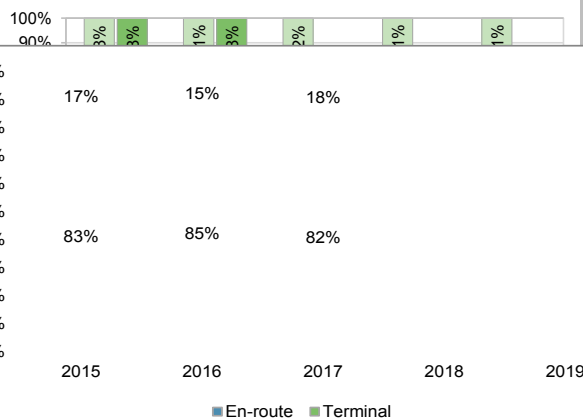
1. Monitoring of gate-to-gate ANS costs					
Netherlands: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	167 178 324	164 400 112	164 697 149	168 065 588	169 244 781
Real terminal costs (EUR2009)	53 557 045	52 148 932	52 724 712	53 409 871	53 709 931
Real gate-to-gate costs (EUR2009)	220 735 369	216 549 044	217 421 862	221 475 459	222 954 712
En-route share (%)	75.7%	75.9%	75.8%	75.9%	75.9%
Netherlands: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	159 378 607	170 594 020			
Real terminal costs (EUR2009)	52 610 176	56 254 004			
Real gate-to-gate costs (EUR2009)	211 988 783	226 848 025			
En-route share (%)	75.2%	75.2%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-8 746 586	10 298 981			
in %	-4.0%	4.8%			
En-route share					
in p.p.	-0.6%	-0.7%			

2. Share of en-route and terminal in gate-to-gate actual costs (2016)

In 2016, actual gate-to-gate ANS costs are +4.8% (+10.3 M€2009) higher than planned due to higher costs for both en-route (+3.8%, or +6.2 M€2009) and terminal ANS (+7.9% or +4.1 M€2009).

The actual share of en-route in gate-to-gate ANS costs remains stable compared to (75.2%) and is slightly lower than planned in the PP for 2016 (75.9%).

For LVNL, the estimated gate-to-gate economic surplus in 2016 is negative (-1.5 M€) corresponding to 0.87% of gate-to-gate ANS revenues). It is noted that LVNL is entirely financed and has no equity.



3. Technical notes on en-route and terminal information reported by Netherlands

--

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Switzerland

Version: 1.1

Date: 9 October 2017

SWITZERLAND

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	71	C	C	C	C	C
SKYGUIDE	87	D	D	C	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	FOCA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	17	1
SKYGUIDE	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	8	1
TOTAL	23	2

Observations
<p>The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.</p>

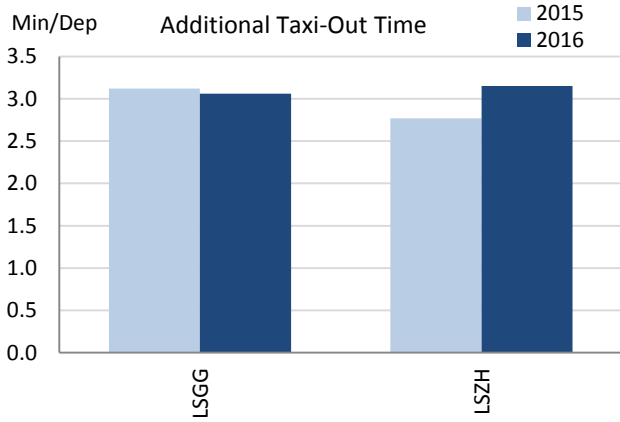
SWITZERLAND

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

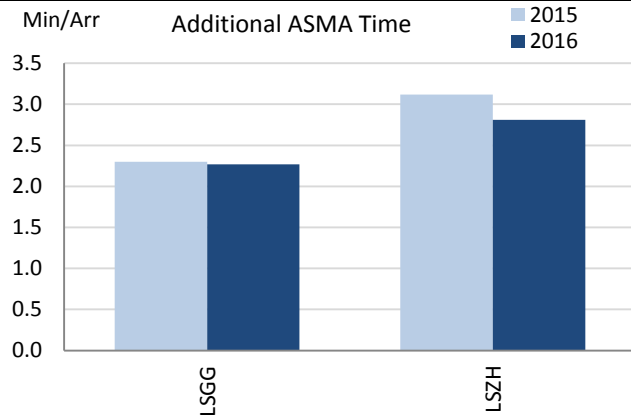
Switzerland identifies its two main airports Zurich (LSZH) and Geneva (LSGG) as subject to RP2 monitoring. Both airports have a fully implemented data flow that allows the proper monitoring of environmental indicators. In general the environmental performance of Swiss airports is commensurate with their levels of traffic.

2. Additional Taxi-Out Time



With little increase in number of flights per year (less than 1% for LSGG and less than 2% for LSZH), the additional taxi-out times in 2016 are similar to 2015, although Zurich registers a nearly 14% increase. Both values stay close to 3 min/arr., below the average for all RP2 airports. Swiss NSA reports that A-CDM introduction in Geneva helped reduced taxi-out times and the on-going Surface Manager (SMAN) project should help reduce the inefficiencies.

3. Additional ASMA Time



The additional times in terminal airspace for LSGG stay in the same level while for LSZH have actually decreased 10%. The additional ASMA times for Swiss airports are higher than the European average, especially for LSZH that reaches the third highest value within RP2 airports, despite the reduction of additional times in 2016. This reduction for Zurich can be linked to procedural improvements on Target Time of Arrival according to Swiss NSA. Expected deployment of AMAN and Extended AMAN at both airports should help reduce in the future inefficiencies in the last 40NM.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Genève	LSGG	3.12	3.06				2.30	2.27			
Zürich	LSZH	2.77	3.15				3.12	2.81			

SWITZERLAND

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.22	0.22	0.22	0.23	0.23	Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-	N/A	N/A	N/A	N/A	N/A	
Actual performance	0.10	0.10				

National capacity incentive scheme

Incentive scheme targets:
 The capacity delay target at FAB level was set at an average of 0.38 min/flight for CRSTMP causes ATFM delays.
 Skyguide's broken down target was set at 0.17 min/flight.

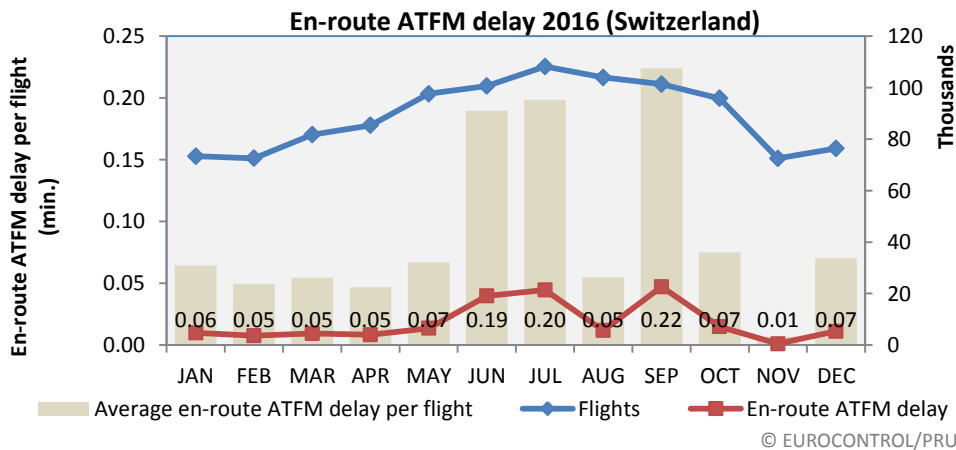
2015 achievement (As reported by FABEC)
 - FABEC: 0.67 min/flight for CRSTMP ATFM delays
 - Skyguide: 0.08 min/flight for CRSTMP delays

BONUS / MALUS
 Skyguide achieved their local target for CRSTMP delays and were therefore exempt from any penalty.

Compliance issues relating to national capacity incentive scheme

The PRB noted several compliance issues regarding the proposed FABEC en route incentive scheme submitted in the FABEC performance plan dated July 2015. The compliance issues are: the individual ANSP contributions are not consistent with the required capacity performance and that the proposed target, using CRSTMP codes only, is not consistent with the required capacity performance. Neither of these outstanding compliance issues have been addressed in the FABEC monitoring report

Observations regarding national capacity performance



En-route ATFM delay per flight (Switzerland)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.76	0.51	0.48	0.21	0.15	0.14	0.10	0.10	0.10

The level of en route capacity performance remains at the same level as in 2015, with 0,1 minutes average ATFM delay per flight, despite a 2% increase in traffic. It is noted that the Network Manager, based on the latest capacity plans and traffic forecasts (NOP 2017-2021), does not expect shortfalls in en route capacity performance in Switzerland for the remainder of RP2. However, It is noted that there is a risk of a reduction in capacity due to cost reduction measures affecting staff.

Planning and Effective Use of CDRs

Such data is not available at national level (or FAB) level.
 CURA (civil use of released airspace) and PRISMIL (Pan-European Repository of Information Supporting Civil-Military Performance Monitoring) tools are currently not designed to provide rate of planning of conditional routes (CDRs) and effective use of CDRs. Indeed, only the Special Use of Airspace (SUA) can be evaluated. Switzerland is therefore currently evaluating SUA aggregated indicators matching IR (EC) 390/2013 to replace CDR-based indicators.

Observations on Planning and effective Use of CDRs
<p>It is noted that Switzerland, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network</p>
Effective booking procedures
<p>The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 73%.</p> <p>The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 5%</p> <p>AUPs are made up of airspace allocations for civil and military missions and also for ASM/ATC purposes. Civil missions represented 9% of all the missions contained in the AUPs.</p> <p>Procedure 3 is applicable within the State and resulted in an effective usage of 100%</p>
Observations on Effective booking procedures
<p>Switzerland reports that airspace is very often released at tactical level (ASM level 3), however tactical releases are yet not always recorded in ASM systems and also not always notified to the Network Manager.</p>

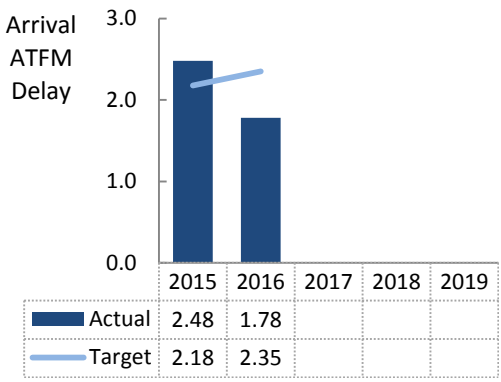
SWITZERLAND

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

In Switzerland, ANS at Zurich (LSZH) and Geneva (LSGG) are subject to RP2. Arrival ATFM delay at both airports decreased in 2016 by approximately 0.7 minute per arrival on average. The established national target for 2016 was fully met. The adherence with ATFM slots remained stable in 2016 in comparison with 2015 at approximately 92% at both airports. As concerns pre-departure delay, LSZH accrues a high share of delay, though there was a significant improvement in 2016. Pre-departure delay increased at LSGG by 0.10 min/dep. on average.

2. Arrival ATFM Delay

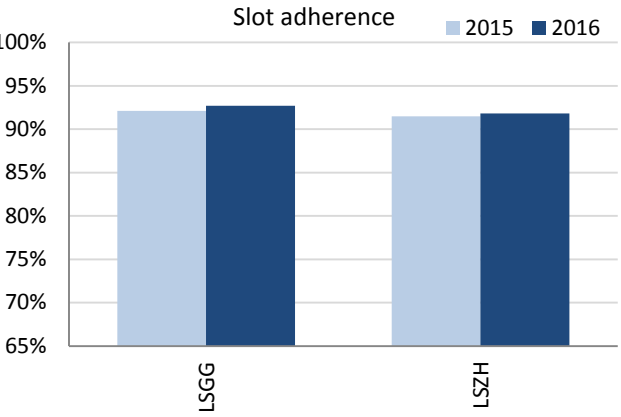


Switzerland established a traffic-dependent national target on arrival ATFM delay. After failing to meet the national target (all causes) in 2015, in 2016 the achieved performance of 1.78 min/arr. exceeds the set target of 2.35 min/dep. In their monitoring report Switzerland applies the REA adjustment for the entire 2016 which differs from the SES agreed application of REA for April onwards. The associated value is consistent with the SES data. Both Swiss airports improved their share of arrival ATFM delay by approximately 0.7 min/arr. on average.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The FABEC performance plan establishes a traffic-dependent national target on arrival ATFM delay (CRSTMP delay causes). Switzerland has established a respective incentive scheme. The actual performance exceeds the target and a 0.5% of total Terminal ANSP revenues are applied.

4. ATFM Slot Adherence



Adherence to ATFM slots remained unchanged in 2016. Both airports achieve a compliance rate of 92%.

5. Pre-departure Delay

Pre-departure delay at Geneva (LSGG) increased by 0.1 min/dep. on average in 2016 in comparison with 2015 resulting in a discernible level of this delay category. At Zurich (LSZH) the extremely high share of pre-departure delay in 2015 (i.e. 1.93 min/dep.) has been reduced to 1.12 min/dep. in 2016.

6. Appendix

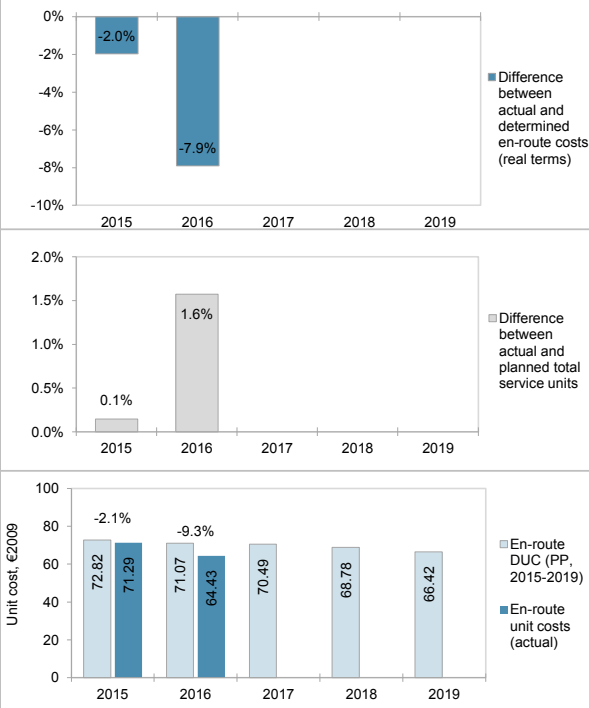
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Genève	LSGG	1.85	1.11				92.1%	92.7%				0.25	0.35			
Zürich	LSZH	2.92	2.25				91.5%	91.8%				1.93	1.12			

SWITZERLAND: En-route charging zone

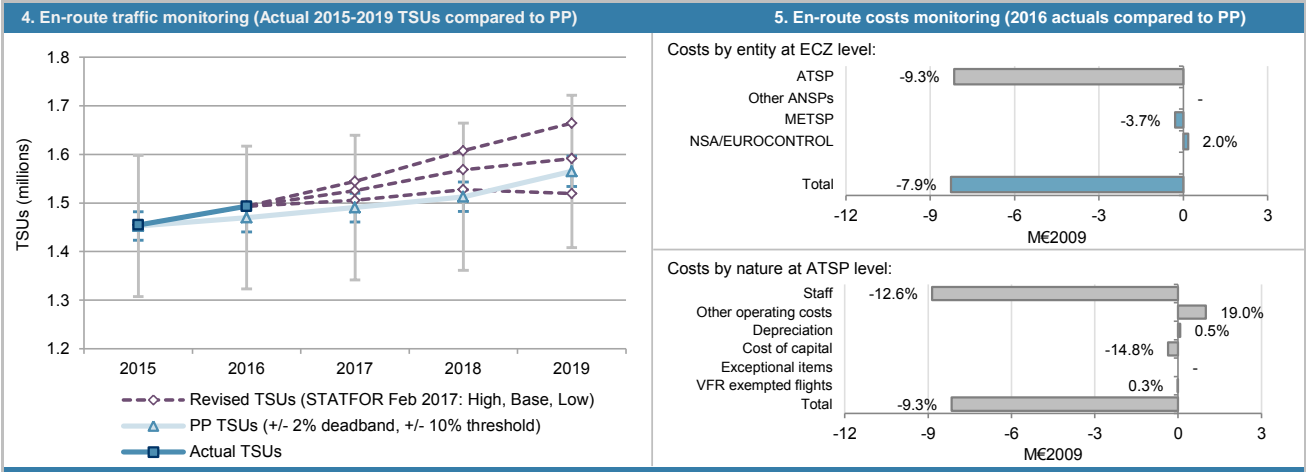
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Switzerland ECZ represents 1.7% of the SES en-route ANS determined costs in 2016						
· ATSP: Skyguide						
· FAB: FABEC						
· National currency: CHF Exchange rate 2009: 1 EUR = 1.50898 CHF						
2. En-route DUC monitoring at Charging Zone level						
Switzerland: Data from RP2 Performance Plan (EC Decision 2017/553 of 22 March 2017)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal CHF)		158 188 309	156 222 383	157 901 505	157 939 446	159 353 943
Inflation %		-1.0%	0.0%	0.5%	1.0%	1.0%
Inflation index (100 in 2009)		99.1	99.1	99.6	100.6	101.6
Real en-route costs (CHF2009)		159 633 416	157 649 529	158 551 235	157 019 140	156 856 827
Total en-route Service Units		1 452 683	1 470 066	1 490 591	1 512 889	1 565 000
Real en-route unit cost per Service Unit (CHF2009)		109.89	107.24	106.37	103.79	100.23
Real en-route unit cost per Service Unit (EUR2009)		72.82	71.07	70.49	68.78	66.42
Switzerland: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal CHF)		155 396 234	143 427 824			
Inflation %		-0.8%	-0.5%			
Inflation index (100 in 2009)		99.3	98.8			
Real en-route costs (CHF2009)		156 499 672	145 172 138			
Total en-route Service Units		1 454 786	1 493 182			
Real en-route unit cost per Service Unit (CHF2009)		107.58	97.22			
Real en-route unit cost per Service Unit (EUR2009)		71.29	64.43			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal CHF)	in value	-2 792 076	-12 794 559			
	in %	-1.8%	-8.2%			
Inflation %	in p.p.	0.2 p.p.	-0.5 p.p.			
	in p.p.	0.2 p.p.	-0.3 p.p.			
Real en-route costs (CHF2009)	in value	-3 133 743	-12 477 391			
	in %	-2.0%	-7.9%			
Total en-route Service Units	in value	2 103	23 116			
	in %	0.1%	1.6%			
Real en-route unit cost per Service Unit (CHF2009)	in value	-2.31	-10.02			
	in %	-2.1%	-9.3%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-1.53	-6.64			
	in %	-2.1%	-9.3%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (64.43 €2009) is -9.3% lower than planned in the PP (71.07 €2009). This difference results from the combination of higher than planned TSUs (+1.6%) and lower than planned en-route costs (-7.9%, or -8.3 M€2009).						
En-route service units						
The difference between actual and planned TSUs (+1.6%) does not fall outside the ±2% dead band. The resulting gain of en-route revenues (+1.4 M€2009) is therefore retained solely by the ATSP.						
The number of en-route service units (SUs) planned in the PP for the 2017-2019 period is lower than the STATFOR February 2017 base case for Switzerland. If this scenario materialises, the traffic is expected to exceed the ±2% dead band foreseen in the traffic risk-sharing mechanism.						
En-route costs						
In nominal terms, actual en-route costs are -8.2% lower than planned. Since the actual inflation index is lower than planned (-0.3 p.p.), actual en-route costs are -7.9% below the planned level when expressed in CHF2009.						
The lower than planned en-route costs in real terms are driven by reductions in the Skyguide (-9.3% or -8.2 M€2009) and METSP (-3.7% or -0.3 M€2009) entities; and an increase in the NSA/EUROCONTROL entity (+2.0%, or +0.2 M€2009). Skyguide being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.						
Costs exempt from cost-sharing are reported for a total amount of -0.5 M€2009 relating to EUROCONTROL costs (+0.3 M€2009) and an international services agreement with France (-0.8 M€2009). These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed eligible by the European Commission.						



SWITZERLAND: En-route charging zone

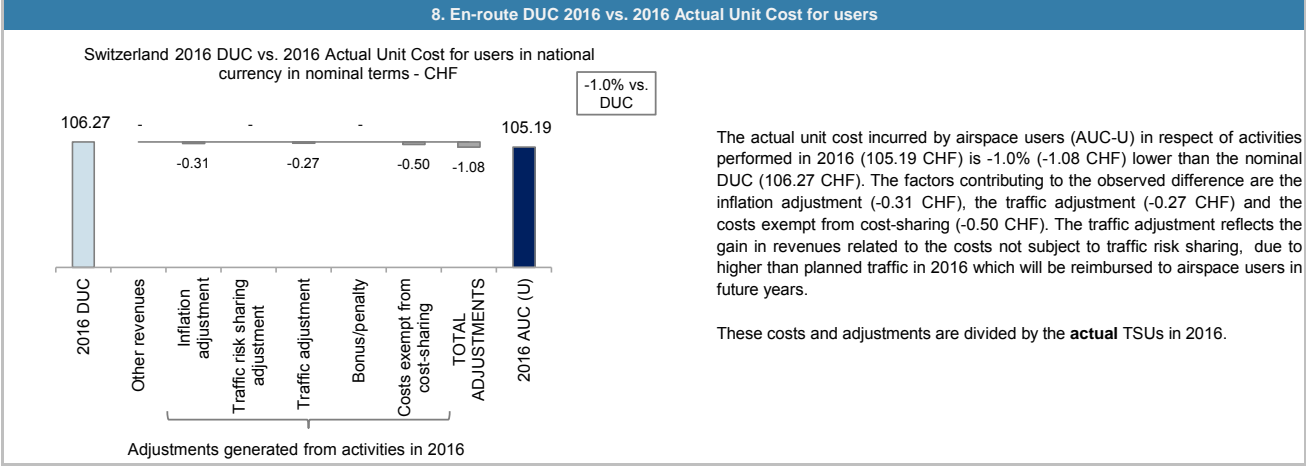
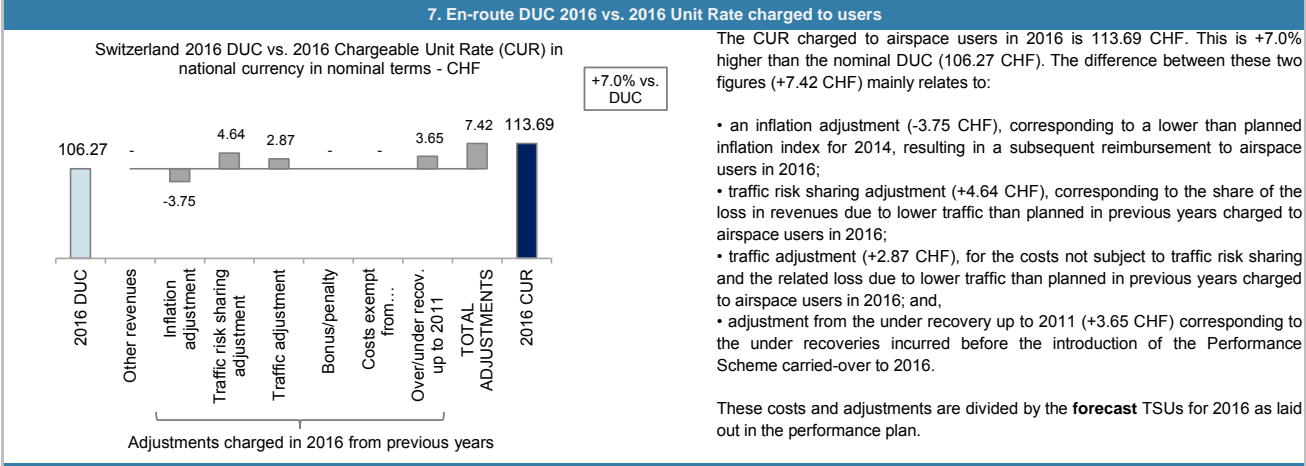
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-59	-504			
by entity	ATSP	-151	-807			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	92	303			
Total costs exempt from cost sharing		-59	-504			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



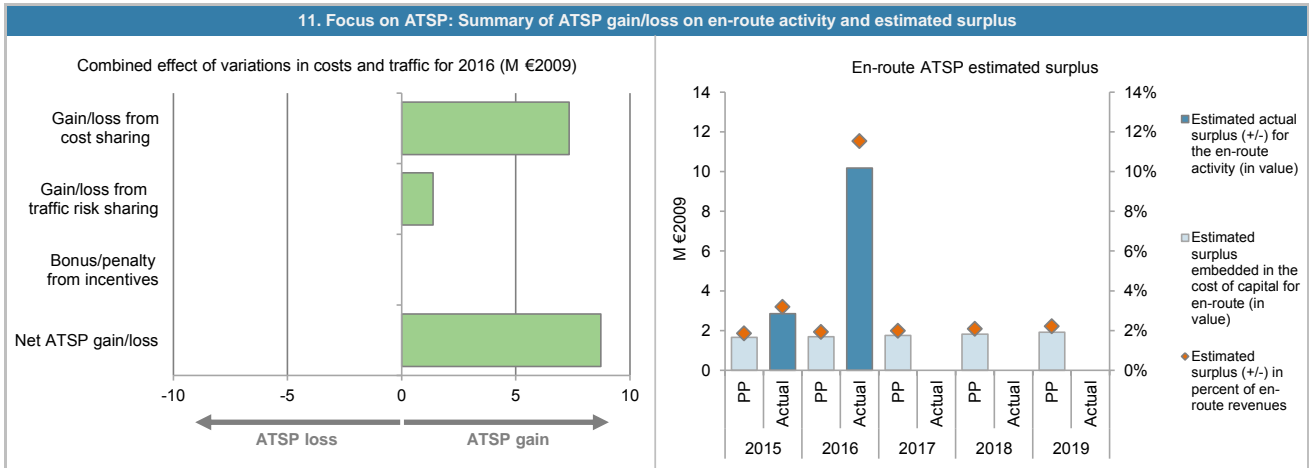
SWITZERLAND: En-route ATSP (Skyguide)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	89 375	87 620			
Actual costs for the ATSP	88 001	79 469			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 374	8 151			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-151	-807			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 223	7 344			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	0.1%	1.6%			
Determined costs for the ATSP (PP) - based on actual inflation	89 195	87 883			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	129	1 382			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	1 352	8 726			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	96 080	96 991	99 196	102 582	107 482
Estimated proportion of financing through equity (in %)	65.5%	66.4%	66.9%	67.3%	67.7%
Estimated proportion of financing through equity (in value)	62 949	64 444	66 404	69 003	72 810
Estimated proportion of financing through debt (in %)	34.5%	33.6%	33.1%	32.7%	32.3%
Estimated proportion of financing through debt (in value)	33 131	32 547	32 792	33 578	34 672
Cost of capital pre-tax (in value)	2 402	2 425	2 480	2 565	2 687
Average interest on debt (in %)	2.2%	2.2%	2.2%	2.2%	2.2%
Interest on debt (in value)	739	726	732	749	774
Determined RoE pre-tax rate (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 663	1 699	1 748	1 815	1 913
Overall estimated surplus (+/-) for the en-route activity	1 663	1 699	1 748	1 815	1 913
Revenue/costs for the en-route activity	89 375	87 620	87 911	86 693	86 375
Estimated surplus (+/-) in percent of en-route revenues	1.9%	1.9%	2.0%	2.1%	2.2%
Estimated ex-ante RoE pre-tax rate (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	86 563	82 616			
Estimated proportion of financing through equity (in %)	65.5%	66.4%			
Estimated proportion of financing through equity (in value)	56 714	54 892			
Estimated proportion of financing through debt (in %)	34.5%	33.6%			
Estimated proportion of financing through debt (in value)	29 849	27 723			
Cost of capital pre-tax (in value)	2 164	2 065			
Average interest on debt (in %)	2.2%	2.2%			
Interest on debt (in value)	666	619			
Determined RoE pre-tax rate (in %)	2.6%	2.6%			
Estimated surplus embedded in the cost of capital for en-route (in value)	1 498	1 447			
Net ATSP gain(+)/loss(-) on en-route activity	1 352	8 726			
Overall estimated surplus (+/-) for the en-route activity	2 850	10 173			
Revenue/costs for the en-route activity	89 353	88 195			
Estimated surplus (+/-) in percent of en-route revenues	3.2%	11.5%			
Estimated ex-post RoE pre-tax rate (in %)	5.0%	18.5%			

SWITZERLAND: En-route ATSP (Skyguide)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 Skyguide en-route costs vs. PP

In 2016, Skyguide actual en-route costs are -9.3% (-8.2 M€2009) lower, in real terms, than planned in the PP. This results from the combination of:

- lower staff costs (-12.6% or -8.9 M€2009), as indicated in the Additional Information to the June 2017 en-route Reporting Tables, mainly explained by the postponement of recruitments, other costs containment measures and less FTEs "due to facility management restructuring";
- higher other operating costs (+19.0% or +1.0 M€2009) due to use of external expertise and services instead of internal production (shift from staff cost and CAPEX to Opex);
- higher depreciation costs (+0.5% or +0.08 M€2009) due to write-off of assets in 2016, partly compensated by less investments in previous years compared to the PP;
- a lower cost of capital (-14.8% or -0.4 M€2009), due to a lower asset base in 2016 than planned.

Skyguide net gain/loss on en-route activity in 2016

As shown in box 9, Skyguide generated a net gain of +8.7 M€2009 on the en-route activity. This is a combination of 2 elements:

- a gain of +7.3 M€2009 arising from the cost-sharing mechanism; and
- a gain of +1.4 M€2009 arising from the traffic risk-sharing mechanism.

Note that if the costs exempt from cost-sharing included in this analysis for the year 2016 (-0.8 M€2009) are not deemed eligible by the European Commission, the net gain generated by Skyguide on its en-route activity would amount to +9.5 M€2009.

Skyguide overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+8.7 M€2009) and the surplus embedded in the actual cost of capital (+1.4 M€2009) amounts to +10.2 M€2009 (11.5% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 18.5%, which is higher than the 2.6% planned in the PP.

SWITZERLAND: Terminal charging zone

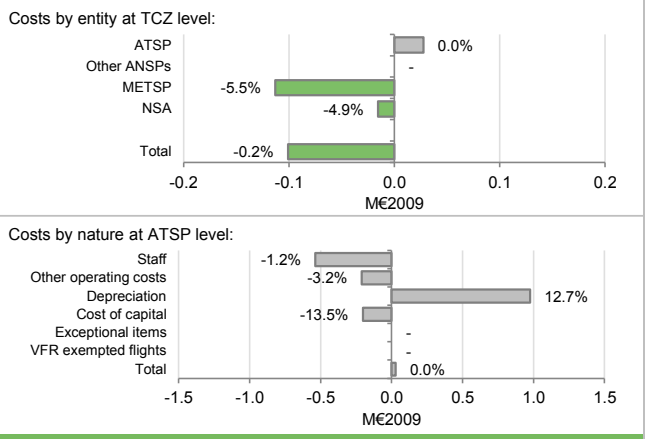
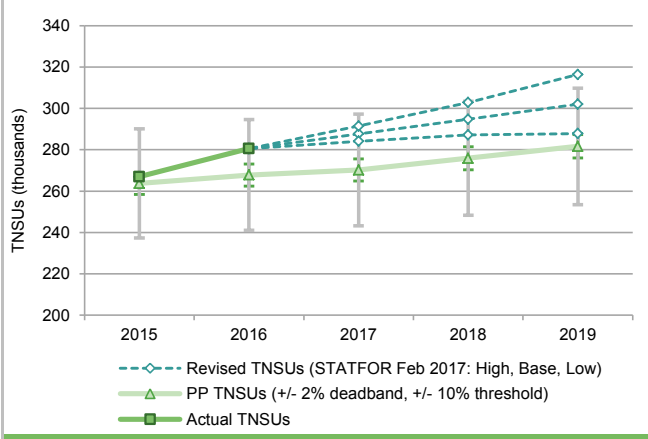
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
Switzerland TCZ represents 5.5% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		Yes		
ATSP:	Skyguide	Airports with fewer than 70,000 IFRs ATMs:		0		
National currency:	CHF	Airports with between 70,000 and 225,000 IFRs ATMs:		1		
Number of airports in charging zone in 2016:	2,	of which:		Airports with more than 225,000 IFRs ATMs: 1		
2. Terminal DUC monitoring at Charging Zone level						
Switzerland: Data from RP2 Performance Plan (See note 1)		2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal CHF)		98 654 883	91 827 842	93 196 484	93 781 285	95 413 139
Inflation %		-1.0%	0.0%	0.5%	1.0%	1.0%
Inflation index (100 in 2009)		99.1	99.1	99.6	100.6	101.6
Real terminal costs (CHF2009)		99 556 131	92 666 721	93 579 967	93 234 826	93 917 991
Total terminal Service Units		263 690	267 811	270 219	275 889	281 677
Real terminal unit cost per Service Unit (CHF2009)		377.55	346.01	346.31	337.94	333.42
Real terminal unit cost per Service Unit (EUR2009)		250.20	229.30	229.50	223.96	220.96
Switzerland: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal CHF)		97 128 233	91 402 849			
Inflation %		-0.8%	-0.5%			
Inflation index (100 in 2009)		99.3	98.8			
Real terminal costs (CHF2009)		97 817 921	92 514 455			
Total terminal Service Units		266 955	280 536			
Real terminal unit cost per Service Unit (CHF2009)		366.42	329.78			
Real terminal unit cost per Service Unit (EUR2009)		242.83	218.54			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
Terminal costs (nominal CHF)	in value	-1 526 651	-424 993			
	in %	-1.5%	-0.5%			
Inflation %	in p.p.	0.2 p.p.	-0.5 p.p.			
Inflation index (100 in 2009)	in p.p.	0.2 p.p.	-0.3 p.p.			
Real terminal costs (CHF2009)	in value	-1 738 209	-152 266			
	in %	-1.7%	-0.2%			
Total terminal Service Units	in value	3 265	12 724			
	in %	1.2%	4.8%			
Real terminal unit cost per Service Unit (CHF2009)	in value	-11.13	-16.24			
	in %	-2.9%	-4.7%			
Real terminal unit cost per Service Unit (EUR2009)	in value	-7.37	-10.76			
	in %	-2.9%	-4.7%			
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Switzerland Terminal Charging Zone (TCZ) that comprises 2 airports: Geneva and Zurich.</p> <p>Terminal unit cost</p> <p>In 2016, the actual terminal unit cost in real terms (218.54 €2009) is -4.7% lower than planned in the PP (229.30 €2009). This difference results from the combination of higher than planned TNSUs (+4.8%) and lower than planned terminal costs (-0.2%, or -0.1 M€2009).</p> <p>Terminal service units</p> <p>The difference between actual and planned TSUs (-4.8%) falls outside the ±2% dead band, but does not exceed the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional terminal revenues is therefore shared between the airspace users and the ATSP, the latter retaining a gain of 1.7 M€2009. Based on the STATFOR February 2017 base TNSU scenario, Switzerland TNSUs are expected to exceed the TNSUs planned in the PP for the remainder of RP2. If this scenario materialises, the traffic is expected to exceed the ±2% dead band foreseen in the traffic risk-sharing mechanism, but does not surpass the +10% threshold</p> <p>Terminal costs</p> <p>In nominal terms, actual terminal costs are -0.5% lower than planned. Since the actual inflation index is lower than planned (-0.3 p.p.) the actual terminal costs are -0.2% below the planned level when expressed in CHF2009. The lower than planned terminal costs in real terms are driven by an increase in Skyguide costs (+0.05% or some +0.03 M€2009) and reductions across all other reporting entities: METSP (-5.5% or -0.1 M€2009) and the NSA (-4.9%, or -0.02 M€2009). Skyguide being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.</p> <p>There are no costs exempt from cost-sharing reported for the TCZ.</p>						

SWITZERLAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP) 5. Terminal costs monitoring (2016 actuals compared to PP)

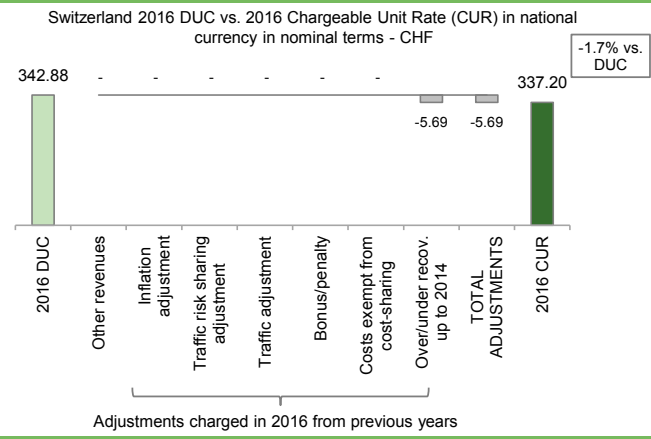


6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

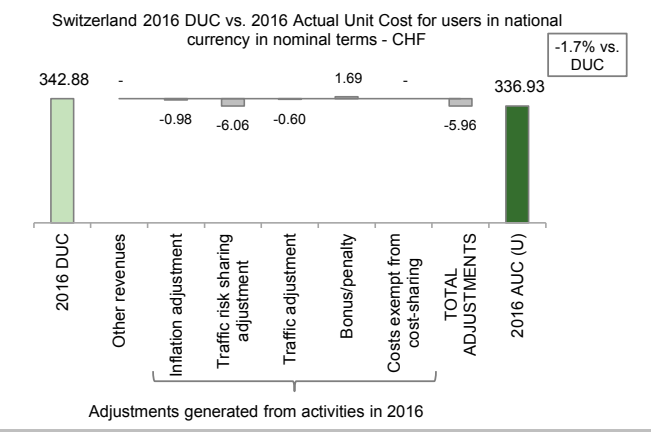
7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users



The CUR charged to airspace users in 2016 is 337.2 CHF. This is -1.7% lower than the nominal DUC (342.88 CHF). The difference between these two figures (-5.69 CHF) relates to an over recovery from 2014 reimbursed to airspace users in 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (336.93 CHF) is -1.7% lower than the nominal DUC (342.88 CHF). The factors contributing to the observed difference (-5.96 CHF) are the inflation adjustment (-0.98 CHF), the traffic-risk sharing adjustment (-6.06 CHF), the traffic adjustment (-0.60 CHF) and the bonus relating to the capacity target mechanism (+1.69 CHF).

These costs and adjustments are divided by the **actual** TNSUs in 2016.

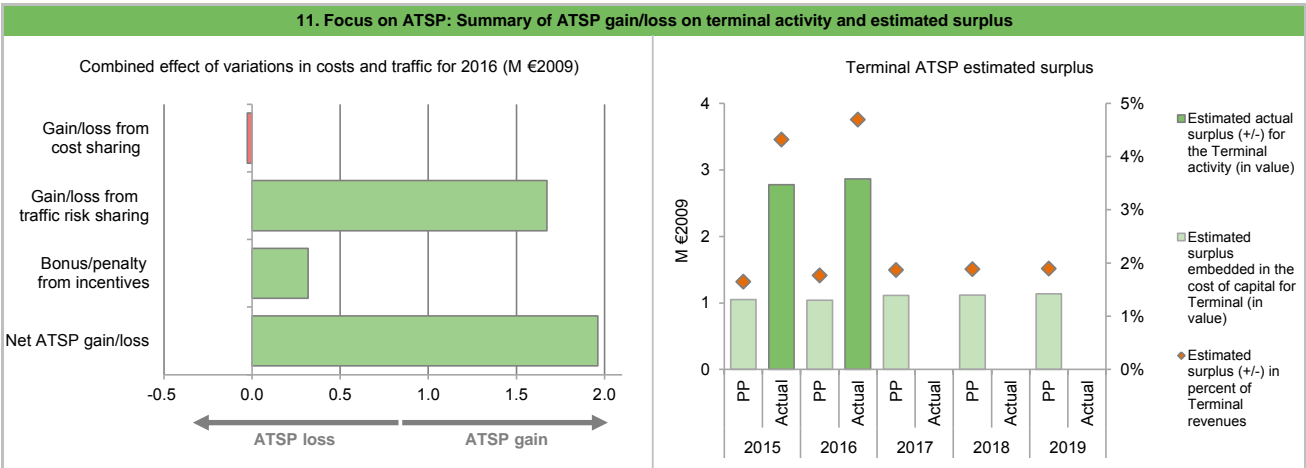
SWITZERLAND: Terminal ATSP (Skyguide)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	63 597	59 031			
Actual costs for the ATSP	62 542	59 059			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 055	-28			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 055	-28			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.2%	4.8%			
Determined costs for the ATSP (PP) - based on actual inflation	63 469	59 208			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	786	1 673			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	317			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	1 841	1 962			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	60 828	59 901	63 720	63 501	64 009
Estimated proportion of financing through equity (in %)	65.2%	65.8%	66.4%	66.9%	67.5%
Estimated proportion of financing through equity (in value)	39 670	39 422	42 302	42 509	43 193
Estimated proportion of financing through debt (in %)	34.8%	34.2%	33.6%	33.1%	32.5%
Estimated proportion of financing through debt (in value)	21 157	20 479	21 419	20 992	20 816
Cost of capital pre-tax (in value)	1 521	1 498	1 593	1 588	1 600
Average interest on debt (in %)	2.2%	2.2%	2.2%	2.2%	2.2%
Interest on debt (in value)	472	457	478	468	464
Determined RoE pre-tax rate (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
Estimated surplus embedded in the cost of capital for terminal (in value)	1 049	1 041	1 115	1 119	1 136
Overall estimated surplus (+/-) for the terminal activity	1 049	1 041	1 115	1 119	1 136
Revenue/costs for the terminal activity	63 597	59 031	59 648	59 443	59 919
Estimated surplus (+/-) in percent of terminal revenues	1.6%	1.8%	1.9%	1.9%	1.9%
Estimated ex-ante RoE pre-tax rate (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	54 399	51 828			
Estimated proportion of financing through equity (in %)	65.2%	65.8%			
Estimated proportion of financing through equity (in value)	35 477	34 109			
Estimated proportion of financing through debt (in %)	34.8%	34.2%			
Estimated proportion of financing through debt (in value)	18 921	17 719			
Cost of capital pre-tax (in value)	1 360	1 296			
Average interest on debt (in %)	2.2%	2.2%			
Interest on debt (in value)	422	395			
Determined RoE pre-tax rate (in %)	2.6%	2.6%			
Estimated surplus embedded in the cost of capital for terminal (in value)	938	900			
Net ATSP gain(+)/loss(-) on terminal activity	1 841	1 962			
Overall estimated surplus (+/-) for the terminal activity	2 779	2 863			
Revenue/costs for the terminal activity	64 383	61 021			
Estimated surplus (+/-) in percent of terminal revenues	4.3%	4.7%			
Estimated ex-post RoE pre-tax rate (in %)	7.8%	8.4%			

SWITZERLAND: Terminal ATSP (Skyguide)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 Skyguide terminal costs in the TCZ vs. PP

Skyguide actual terminal costs in the TCZ are +0.05% (+0.03 M€2009) higher, in real terms, than planned in the PP (see technical note 1 in gate-to-gate box 3). This results from the combination of:

- lower staff costs (-1.2% or -0.5 M€2009);
- lower non-staff operating costs (-3.2% or -0.2 M€2009);
- higher depreciation costs (+12.7% or +1.0 M€2009) due to write-off of assets in 2016;
- a lower cost of capital (-13.5% or -0.2 M€2009), due to a lower asset base in 2016 than planned.

From the Additional Information to the June 2017 terminal reporting tables, we note that other revenues are deducted from the costs and that in 2017: "actual revenues deducted from the costs are higher than assumed in the Plan. These additional revenues may not be sustainable."

Skyguide 2016 net gain/loss on terminal activity in the TCZ

As shown in box 9, the terminal activity in the TCZ generated a net gain of +2.0 M€2009 in 2016. This is a combination of three elements:

- a loss of -0.03 M€2009 as a result of the cost-sharing mechanism; and
- a gain of +1.7 M€2009 as a result of traffic risk-sharing mechanism.
- a gain of +0.3 M€2009, corresponding to a bonus eligible for payment to Skyguide as part of the capacity target incentive mechanism. This amount corresponds to 0.5% of Skyguide terminal revenues (based on the ATSP chargeable unit rate in 2016 times the actual TNSUs). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission.

Skyguide 2016 overall estimated surplus for the terminal activity in the TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity in the TCZ mentioned above (+2.0 M€2009) and the surplus embedded in the cost of capital (+0.9 M€2009) amounts to +2.9 M€2009 (4.7% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 8.4%, which is higher than the 2.6% planned in the PP.

SWITZERLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																	
Switzerland: Data from RP2 Performance Plan																	
	2015D	2016D	2017D	2018D	2019D												
Real en-route costs (EUR2009)	105 788 954	104 474 234	105 071 794	104 056 476	103 948 911												
Real terminal costs (EUR2009)	65 975 779	61 410 172	62 015 379	61 786 655	62 239 388												
Real gate-to-gate costs (EUR2009)	171 764 733	165 884 406	167 087 173	165 843 130	166 188 298												
En-route share (%)	61.6%	63.0%	62.9%	62.7%	62.5%												
Switzerland: Actual data from Reporting Tables																	
	2015A	2016A	2017A	2018A	2019A												
Real en-route costs (EUR2009)	103 712 224	96 205 475															
Real terminal costs (EUR2009)	64 823 869	61 309 265															
Real gate-to-gate costs (EUR2009)	168 536 093	157 514 741															
En-route share (%)	61.5%	61.1%															
Difference between Actuals and Planned (Actuals vs. PP)																	
	2015	2016	2017	2018	2019												
Real gate-to-gate costs (EUR2009)																	
in value	-3 228 639	-8 369 665															
in %	-1.9%	-5.0%															
En-route share																	
in p.p.	-0.1%	-1.9%															
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																	
<p>In 2016, actual gate-to-gate ANS costs are -5.0% (-8.4 M€2009) lower than planned due to reductions in both en-route costs (-7.9%, or -8.3 M€2009) and terminal costs (-0.2% or -0.1 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (61.1%) is slightly lower than planned in the PP for 2016 (63.0%).</p> <p>For Skyguide, the estimated gate-to-gate economic surplus in 2016 amounts to 13.0 M€ (see boxes 10 for the detailed analysis at charging zone level), corresponding to 8.7% of gate ANS revenues.</p>																	
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>61.1%</td> <td>38.9%</td> </tr> <tr> <td>2017</td> <td>62.9%</td> <td>37.1%</td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	61.1%	38.9%	2017	62.9%	37.1%
Year	En-route (%)	Terminal (%)															
2015	83%	17%															
2016	61.1%	38.9%															
2017	62.9%	37.1%															
3. Technical notes on en-route and terminal information reported by Switzerland																	
<p>Note 1: It is noted that the planned costs breakdown by nature for Skyguide reported in the June 2017 Terminal Reporting Tables is different from the breakdown disclosed in the Annex C to the RP2 Performance Plan for all years 2015-2019. However, this change does not affect the total terminal determined costs and the determined unit cost for 2015-2019. For the purposes of the analysis of the 2016 terminal cost-efficiency, the updated costs breakdown by nature reflected in the June 2017 Terminal Reporting Tables has been considered.</p>																	

PRB Annual monitoring report 2016

Volume 2 – Local Overview

NE FAB

Version: 1.1

Date: 9 October 2017

NEFAB

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	B			
	ANSPs	For Safety Culture MO	C	C			
	ANSPs	For all other MOs	A	C			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	98%			
	Runway Incursions (RIs)		97%	94%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	99%			
	Runway Incursions (RIs)		97%	95%			
	ATM Specific Occurences (ATM-S)		100%	97%			

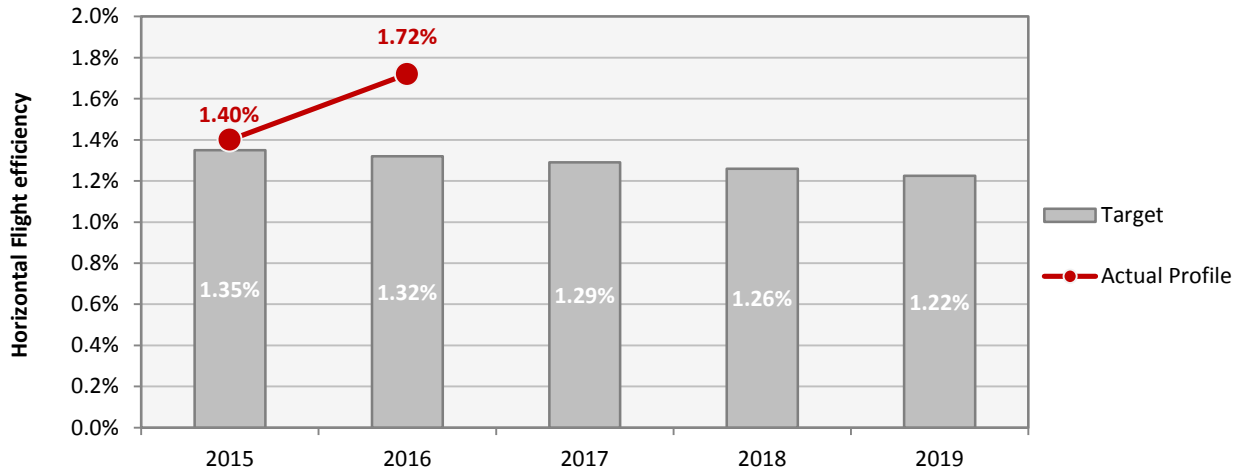
Observations

The lowest answer in the EoS M Components/areas of the States is Level "B" which is below the 2019 EoS M target level. All components are at this level.

NEFAB

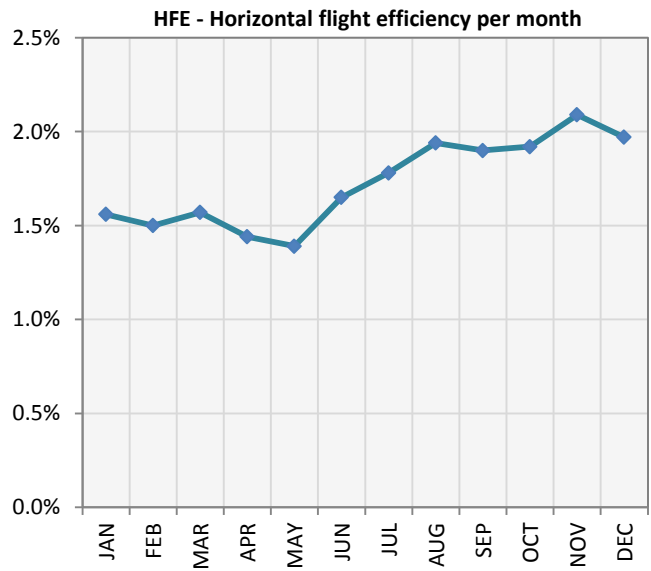
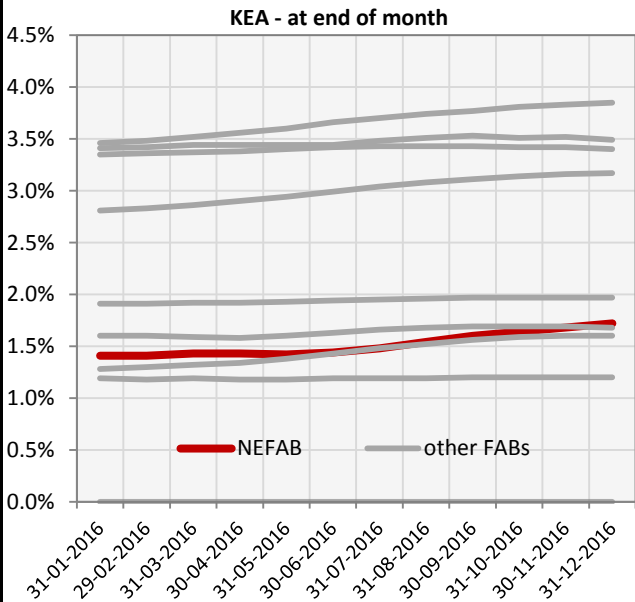
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	1.35%	1.32%	1.29%	1.26%	1.22%
Actual performance	1.40%	1.72%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	1.41%	1.41%	1.43%	1.43%	1.42%	1.44%	1.48%	1.54%	1.60%	1.64%	1.68%	1.72%
HFE	1.56%	1.50%	1.57%	1.44%	1.39%	1.65%	1.78%	1.94%	1.90%	1.92%	2.09%	1.97%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

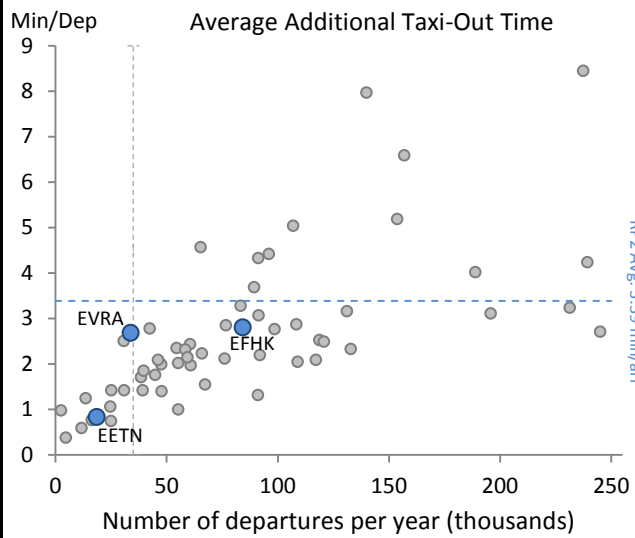
Observations

NM proposed measures: To implement all projects as planned including Borealis Project with Denmark Sweden FAB and UK Ireland FAB.

1. Overview

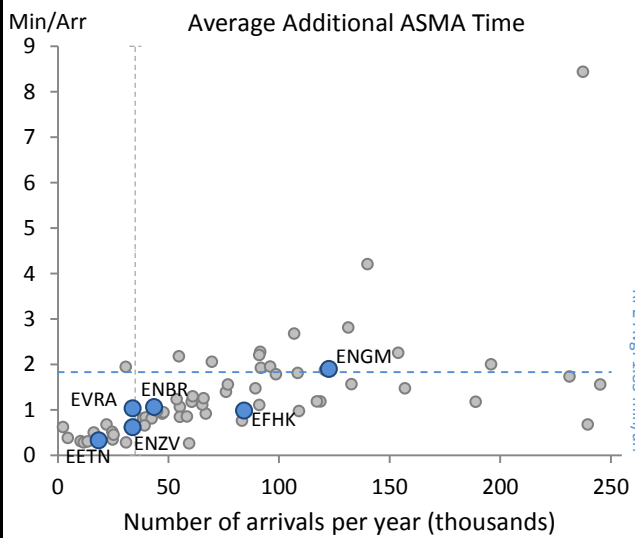
NEFAB includes 10 airports in the RP2 monitoring, from which only 3 have established a complete and correct airport data flow, allowing the calculation of both environment indicators. Member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues. The performance shown by those airports that can be analysed within NEFAB is commensurate with the traffic levels.

2. Additional Taxi-Out Time



Additional taxi-out times for those airports in NEFAB (where the calculation of the indicator is possible) are below the European average. Nevertheless, Riga (EVRA) ranges more than a minute higher than other airports with similar number of movements.

3. Additional ASMA Time



Regarding additional times in the terminal area, the observed values for most airports in NEFAB are well below the RP2 average, except for Oslo (ENGM) that sits very close to it.

NEFAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.12	0.12	0.13	0.13	0.13	
FAB Target	0.12	0.12	0.13	0.13	0.13	
Actual performance	0.04	0.07				
NEFAB assessment of capacity performance						
<p>The cost optimum capacity for the en route delay per flight for NEFAB is 0,12, but for the airspace users a delay of 0,12 would be unacceptable. This is based on the fact that a large portion of the overall traffic is transition flights with little leeway in terms of delays. In addition three of four NEFAB member states have set significant lower target values than the FAB reference value in RP2. In addition implementation of free route airspace (FRA) in cooperation with the Danish-Swedish FAB also contributes to better performance in 2016 without creating more costs.</p>						
Monitoring process for capacity performance						
<p>Monthly at a national level.</p>						
Application of Corrective Measures for Capacity						
<p>No corrective measures applied in 2016</p>						
Capacity Planning						
<p>According to SLA with the airspace users.</p>						
Assessment of capacity performance						
<p>It is noted that, by exceeding the FAB target for en route capacity, NEFAB has provided a positive contribution to the Union-wide target in 2016. It is noted that the Network Manager expects NEFAB to provide a positive contribution to the Union-wide target each year during RP2.</p>						
En route Capacity Incentive Scheme						
<p>Although NEFAB did not apply a FAB-wide en route capacity incentive scheme, the PRB has been advised by the NEFAB NSA committee that the overall FAB performance is a condition of determining whether or not a national bonus or penalty is due. Each member State proposed separate national incentive schemes in the NEFAB performance plan submitted in June 2014. The review of the individual incentive schemes will be made in the national reports following this FAB analysis.</p>						
Result of FAB Capacity Incentive Scheme						
<p>Although NEFAB surpassed its en route capacity target for 2015, only three of the four member states received bonuses for en route capacity performance: Estonia, Finland and Latvia. The fourth state, Norway, neither received a bonus nor a penalty. See following national analyses for the results of the individual national en route capacity incentive schemes.</p>						
Update on Military dimension of the plan						
<p>No new information was provided by NEFAB on how civil military coordination and cooperation is providing additional capacity.</p>						
Observations on Military dimension of the plan						
<p>Whilst the plans for improved civil military cooperation within NEFAB are acknowledged, information on how these plans are actually improving capacity for airspace users would be appreciated.</p>						
Application of FUA						
<p>NEFAB provided the following new information regarding the application of FUA in NEFAB:</p> <p>Application of FUA in Latvia concept is elaborated and explained in the annual SES and BR Implementation questionnaire submitted to EASA. Based on the 2016 military SUA booking and actual use data, the overall efficiency of using the booked military SUA areas has slightly increased from approximately 40% in 2015 to 42% in 2016. Following areas were used in the assessment: EVTSA2, EVTSA3, EVR5, EVTSA7A, EVTSA8, EVTSA10, EVTSA11, EVTSA12 and TRA7.</p>						

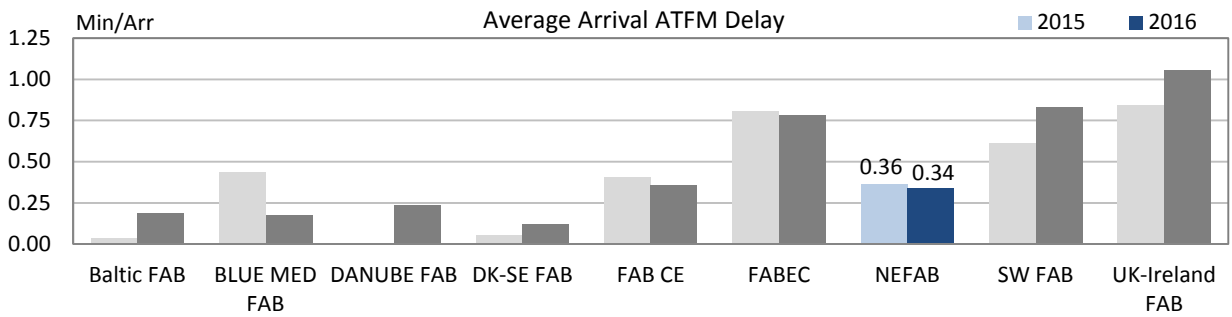
PRB Observations of the Application of FUA

It is noted that Latvia provides information on the application of FUA to EASA, but unfortunately EASA does not make this information available to the public, therefore stakeholders, are unable to ascertain the application of FUA in Member States. It is noted that NEFAB has not actually provided information on how NEFAB authorities determine if the optimum benefits for both civil and military airspace users are being provided.

1. Overview

NEFAB contributes adequately to the airport-related ANS capacity performance in Europe. The aggregated average of arrival ATFM delay ranges well below the European average and improved in 2016 by an additional 0.02 min/arr. In terms of adherence to ATFM slots, the ANS performance at NEFAB airports ranges amongst the best-in-class in Europe.

2. Arrival ATFM Delay

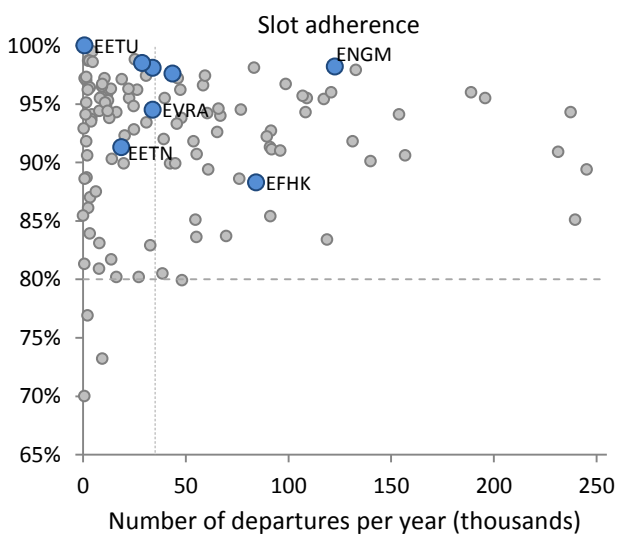


The ANS performance at NEFAB CE airports is commensurate with the level of traffic and shows no specific capacity constraint. The performance has even slightly improved in comparison to 2015.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

NEFAB performance plan sets a national target on arrival ATFM delay for all 4 states with a breakdown for each of the airports in the FAB under RP2 monitoring, except the Norwegian airports. The plan also presents an incentive scheme for the national target on arrival ATFM delay for each of its Member States.

4. ATFM Slot Adherence



Airports in the FAB NE show best in class performance regarding the adherence to ATFM slots, with values above 90% and even close to 100% in several cases. Only Helsinki (EFHK) ranges below 90%.

5. Pre-departure Delay

The airport operator specification has been implemented at all main airports subject to RP2 within NEFAB. Nevertheless the quality of the delay reporting varies across the airports and in some cases validation is on-going to address the share of delayed flights with no delay code attribution and/or missing or non-standard delay codes.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Estonia

Version: 1.1

Date: 9 October 2017

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	53	C	B	B	B	B
EANS	85	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	N/A	N/A
ATM Specific Occurrences (ATM-S)		25%
Source of RAT data:	ANSP	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	2	7
Legal/Judiciary	4	3
Occurrence reporting and Investigation	2	0
TOTAL	8	10
EANS	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	3	0
Occurrence reporting and Investigation	7	1
TOTAL	23	1

Observations

One out of the four reviewed EoSM Components/areas of the State meet the 2019 EoSM target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only four are below Level C.

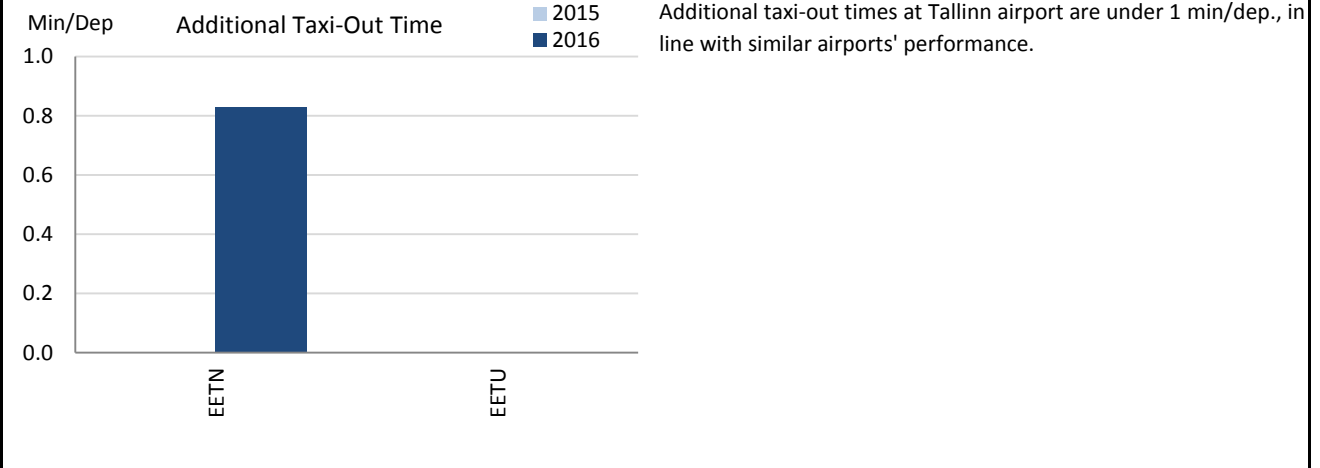
ESTONIA

Monitoring of Airports Contribution to ENVIRONMENT for 2016

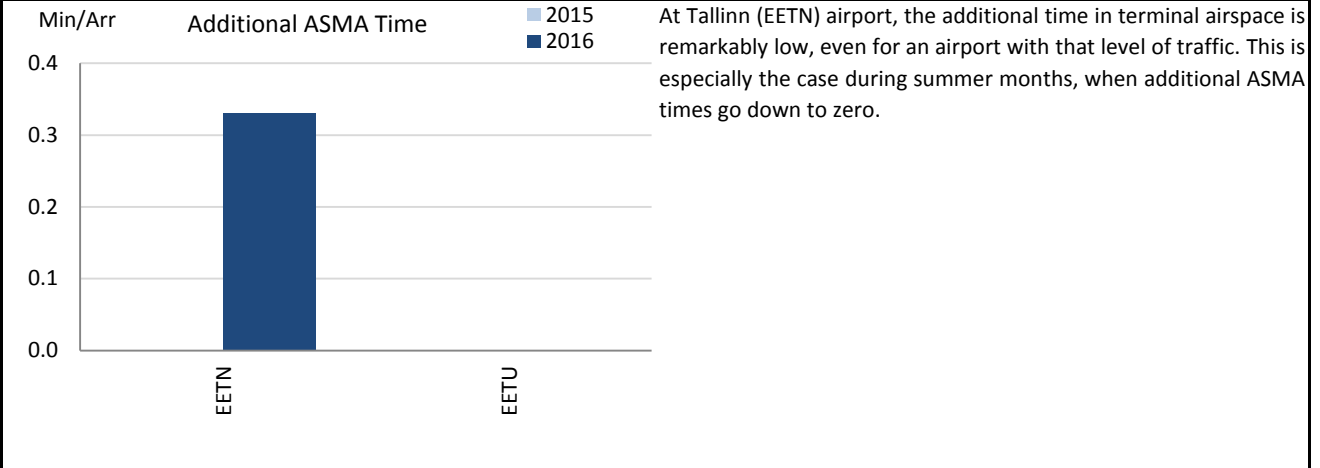
1. Overview

Estonia identified two airports, Tallinn and Tartu, as subject to RP2. In 2016 the Airport Operator Data Flow is finally established at Tallinn allowing for the calculation of both environment indicators. Estonia shall empower the airport reporting entity at Tartu (EETU) to establish the Airport Operator Data Flow and/or address the remaining data issues.

2. Additional Taxi-Out Time



3. Additional ASMA Time



4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Tallinn	EETN	n/a	0.83				n/a	0.33			
Tartu	EETU	n/a	n/a				n/a	n/a			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.12	0.12	0.12	0.12	0.12	
Deadband +/-	0.05 - 0.13		0.05 - 0.14			
Actual performance	0.01	0.02				

National capacity incentive scheme

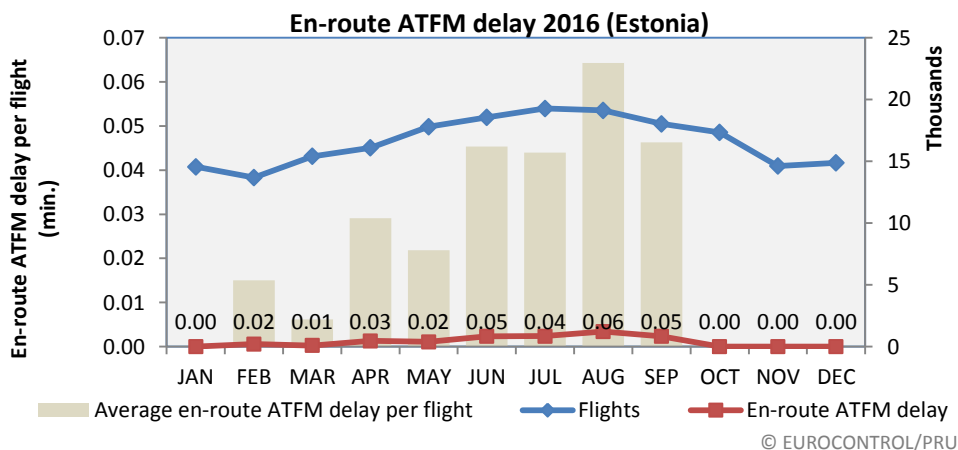
Estonia applied a national incentive scheme based on the following criteria for the period 2015 – 2016:
 En route ATFM delay 2015-2016:
 2015-2016 Dead band: 0,05min/flt - 0,13min/flt
 0,02min / flt or better: Bonus: 1 % of the revenues from air navigation services in year n
 0,03min / flt: Bonus: 0,5 % of the revenues from air navigation services in year n
 0,04min / flt: Bonus: 0,2% of the revenues from air navigation services in year n
 0,14min / flt: Penalty: 0,2 % of the revenues from air navigation services in year n
 0,15min / flt: Penalty: 0,5 % of the revenues from air navigation services in year n
 0,16min / flt or worse: Penalty: Penalty: 1% of the revenues from air navigation services in year n

With an actual en route capacity performance of 0.02 minutes per flight in 2016, the ANSP EANS will receive a bonus of 1% of the revenues from air navigation services in year n.
 Estonia reports that this is equivalent to €256,053 for 2016.

Compliance issues relating to national capacity incentive scheme

The PRB noted that the incentive schemes are not linked to FAB performance.

Observations regarding national capacity performance



En-route ATFM delay per flight (Estonia)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.02	0.00	0.03	0.02	0.11	0.02	0.03	0.01	0.02

The achievement of the local target for en route capacity performance in Estonia during 2016, and the positive contribution both to the NEFAB and the Union-wide target for en route capacity is noted. It is noted that the Network Manager does not expect any capacity problems in Estonia for the remainder of RP2.

Planning and Effective Use of CDRs

Estonia did not provide any data since there are no CDRs in NEFAB.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

Estonia did not provide any data on this indicator

Observations on Effective booking procedures

Estonia is reminded that Regulation 2150/2005 Article 4 (n) obliges Member States to “establish mechanisms to archive data on the requests, allocation and actual use of airspace structures for further analysis and planning activities.”

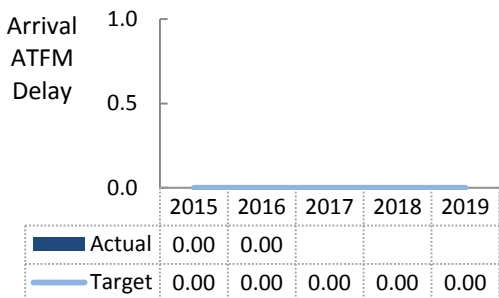
ESTONIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

ANS at 2 airports in Estonia are subject to RP2 monitoring. Continuing with past years performance, no arrival ATFM delay has been accrued in Estonia and the national target of zero delay is met in 2015 and 2016.

2. Arrival ATFM Delay



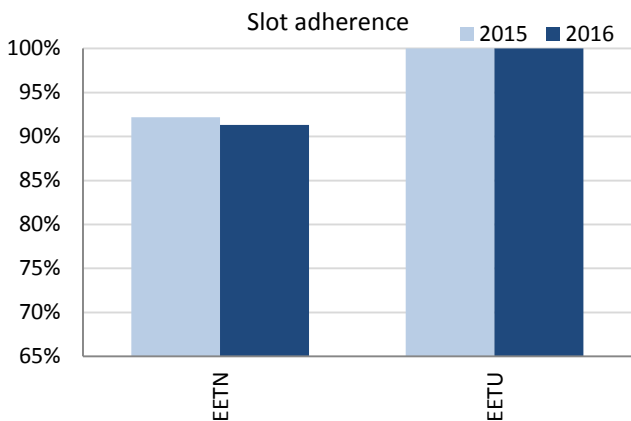
For both years, 2015 and 2016, no arrival ATFM delay was observed at the Estonian airports under RP2 (Tallinn and Tartu) . The achieved performance suggests no major capacity constraints in Estonia.

The achieved performance in 2015 and 2016 meets the established national target fully.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Estonia has established a national target on arrival ATFM delay and associated incentive scheme. The achieved performance ranges within the established deadband and results in no financial incentive.

4. ATFM Slot Adherence



Slot adherence at both airports EETN and EETU ranges above the 90% compliance although it shows a small degradation in 2016 by 0.9% in Tallinn.

5. Pre-departure Delay

The level of pre-departure delay at Tallinn has increased in the past year, but it remains negligible. Nevertheless the high share of unreported delay requires further analysis.

To improve the level of operational monitoring for Tartu (EETU), Estonia may consider the establishment of the airport operator flow at this airport.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Tallinn	EETN	0.00	0.00				92.2%	91.3%				0.01	0.04			
Tartu	EETU	0.00	0.00				100.0%	100.0%				n/a	n/a			

ESTONIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Estonia ECZ represents 0.3% of the SES en-route ANS determined costs in 2016						
· ATSP: EANS						
· FAB: NEFAB						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Estonia: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		23 098 175	24 757 151	25 985 553	27 073 003	28 182 980
Inflation %		3.0%	3.1%	3.0%	3.0%	3.0%
Inflation index (100 in 2009)		123.3	127.1	130.9	134.8	138.9
Real en-route costs (EUR2009)		18 739 585	19 481 586	19 852 645	20 081 013	20 295 459
Total en-route Service Units		774 641	801 575	827 117	855 350	885 643
Real en-route unit cost per Service Unit (EUR2009)		24.19	24.30	24.00	23.48	22.92
Estonia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		20 468 440	21 999 000			
Inflation %		0.1%	0.8%			
Inflation index (100 in 2009)		117.1	118.0			
Real en-route costs (EUR2009)		17 478 222	18 636 095			
Total en-route Service Units		815 544	834 320			
Real en-route unit cost per Service Unit (EUR2009)		21.43	22.34			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-2 629 734	-2 758 151			
	in %	-11.4%	-11.1%			
Inflation %	in p.p.	-2.9 p.p.	-2.3 p.p.			
	in p.p.	-6.2 p.p.	-9.0 p.p.			
Real en-route costs (EUR2009)	in value	-1 261 363	-845 491			
	in %	-6.7%	-4.3%			
Total en-route Service Units	in value	40 903	32 745			
	in %	5.3%	4.1%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-2.76	-1.97			
	in %	-11.4%	-8.1%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (22.34 €2009) is -8.1% lower than planned in the PP (24.30 €2009). This difference results from the combination of higher than planned TSUs (+4.1%) and lower than planned en-route costs (-4.3%, or -0.8 M€2009).						
En-route service units						
The difference between actual and planned TSUs (+4.1%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain in terms of en-route revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +0.4 M€2009. Considering the latest STATFOR base scenario (February 2017), actual traffic is likely to remain higher than planned through RP2.						
En-route costs						
In nominal terms, actual en-route costs are -11.1% lower than planned. However, since the actual inflation index is also lower than planned (-9.0 p.p.), actual en-route costs are -4.3% below plans when expressed in €2009.						
The lower than planned en-route costs in real terms are driven by lower costs for EANS (-6.9% or some -1.0 M€2009) while the costs reported for the NSA/EUROCONTROL (+4.6% or +0.2m€2009) are above plans. EANS being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.						
No costs exempt from cost-sharing are reported by Estonia (see note 1).						

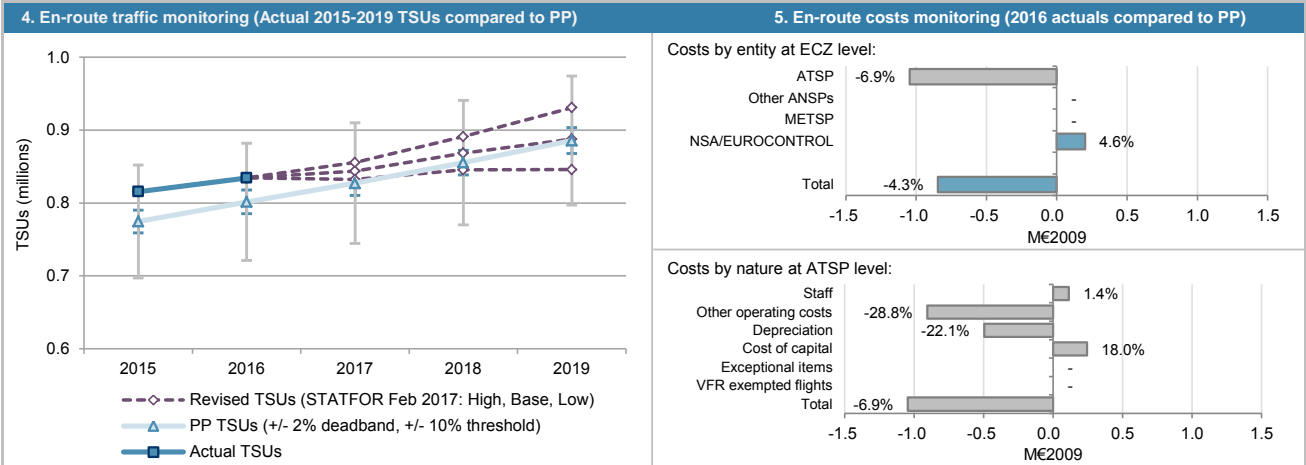
Year	Difference (%)
2015	-6.7%
2016	-4.3%
2017	0%
2018	0%
2019	0%

Year	Difference (%)
2015	5.3%
2016	4.1%
2017	0%
2018	0%
2019	0%

Year	En-route DUC (PP, €2009)	En-route unit costs (actual, €2009)	Difference (%)
2015	24.19	21.43	-11.4%
2016	24.30	22.34	-8.1%
2017	24.00	24.00	0%
2018	23.48	23.48	0%
2019	22.92	22.92	0%

ESTONIA: En-route charging zone

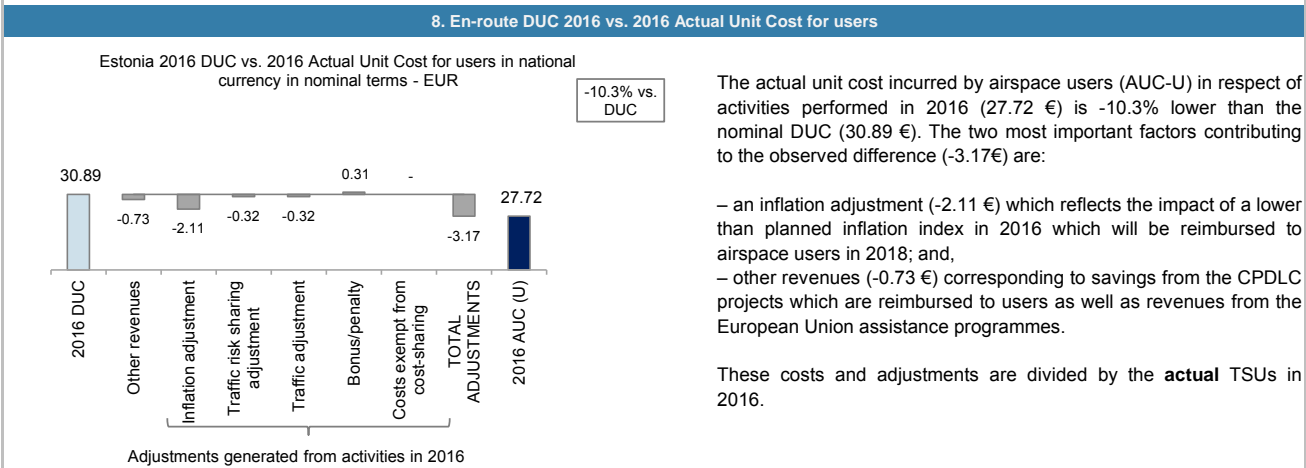
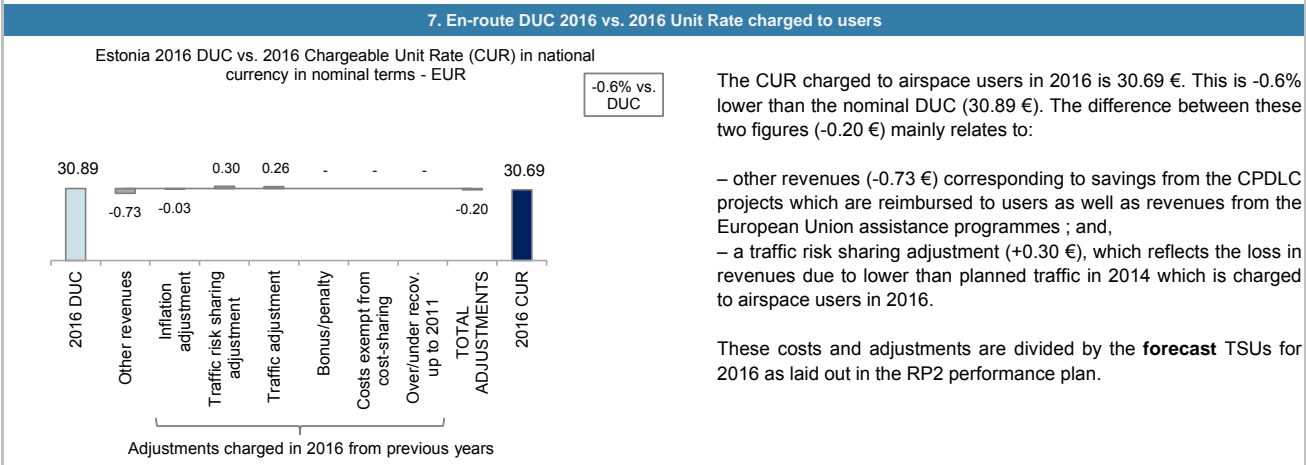
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



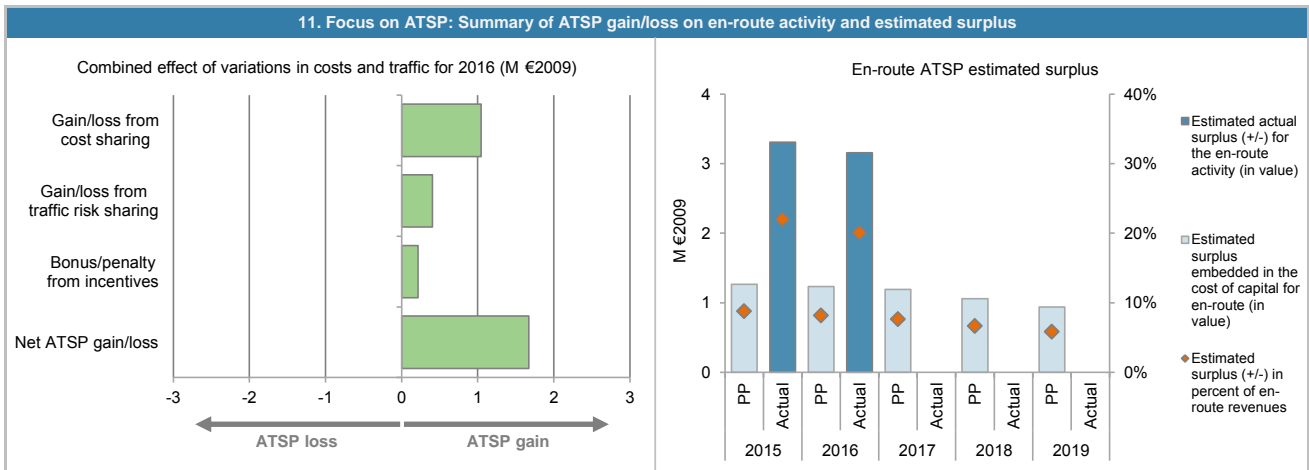
ESTONIA: En-route ATSP (EANS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	14 379	15 125			
Actual costs for the ATSP	13 019	14 079			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 360	1 046			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 360	1 046			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	5.3%	4.1%			
Determined costs for the ATSP (PP) - based on actual inflation	14 387	15 478			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	429	406			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	217	217			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	2 006	1 669			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	16 933	17 088	15 586	14 129	12 757
Estimated proportion of financing through equity (in %)	83.8%	81.2%	85.9%	84.1%	82.6%
Estimated proportion of financing through equity (in value)	14 195	13 875	13 388	11 887	10 536
Estimated proportion of financing through debt (in %)	16.2%	18.8%	14.1%	15.9%	17.4%
Estimated proportion of financing through debt (in value)	2 738	3 213	2 197	2 241	2 221
Cost of capital pre-tax (in value)	1 363	1 352	1 272	1 140	1 019
Average interest on debt (in %)	3.7%	3.7%	3.7%	3.7%	3.7%
Interest on debt (in value)	100	117	80	82	81
Determined RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 263	1 235	1 192	1 058	938
Overall estimated surplus (+/-) for the en-route activity	1 263	1 235	1 192	1 058	938
Revenue/costs for the en-route activity	14 379	15 125	15 563	15 829	16 037
Estimated surplus (+/-) in percent of en-route revenues	8.8%	8.2%	7.7%	6.7%	5.8%
Estimated ex-ante RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	19 134	19 969			
Estimated proportion of financing through equity (in %)	76.4%	83.8%			
Estimated proportion of financing through equity (in value)	14 623	16 732			
Estimated proportion of financing through debt (in %)	23.6%	16.2%			
Estimated proportion of financing through debt (in value)	4 511	3 237			
Cost of capital pre-tax (in value)	1 466	1 596			
Average interest on debt (in %)	3.7%	3.3%			
Interest on debt (in value)	165	107			
Determined RoE pre-tax rate (in %)	8.9%	8.9%			
Estimated surplus embedded in the cost of capital for en-route (in value)	1 301	1 489			
Net ATSP gain(+)/loss(-) on en-route activity	2 006	1 669			
Overall estimated surplus (+/-) for the en-route activity	3 307	3 159			
Revenue/costs for the en-route activity	15 025	15 748			
Estimated surplus (+/-) in percent of en-route revenues	22.0%	20.1%			
Estimated ex-post RoE pre-tax rate (in %)	22.6%	18.9%			

ESTONIA: En-route ATSP (EANS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 EANS en-route costs vs. PP

In 2016, EANS actual en-route costs are -6.9% (-1.0 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided with the en-route Reporting Tables, the main drivers for this deviation are:

- Higher staff costs (+1.4% or +0.1 M€2009). However, as highlighted in box 3, the lower actual inflation index for the year 2016 is affecting the comparison of costs in real terms. When considering nominal terms, actual staff costs are -5.9% lower than planned.
- Lower other operating costs (-28.8% or -0.9 M€2009) mainly due to the implementation of cost containment measures and to the postponement of the Controller Pilot Data Link Communications (CPDLC) project from 2015 to 2018. The savings related to this project are reimbursed to airspace users through deduction of other revenues from the 2016 unit rate (see boxes 7 and 8).
- Lower depreciation costs (-22.1% or -0.5 M€2009), mainly due to the postponement of investment projects (CPDLC, WAM, etc.).
- A higher cost of capital (+18.0% or +0.2 M€2009). Despite a significant capex underspend in 2016 (-46.5%, or -1.0 M€2009 at gate-to-gate level), there was an increase in the total asset base due to the reporting of higher net current assets.

EANS net gain/loss on en-route activity in 2016

As shown in box 9, EANS generated a net gain of +1.7 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +1.0 M€2009 arising from the cost sharing mechanism;
- a gain of +0.4 M€2009 arising from the traffic risk sharing mechanism; and,
- a gain of +0.2 M€2009 corresponding to a bonus eligible for payment to EANS as part of the capacity target incentive mechanism. However, this amount corresponds to 1.3% of EANS en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The amounts reported in respect of financial incentives for 2016 to be charged to users will be examined by the European Commission.

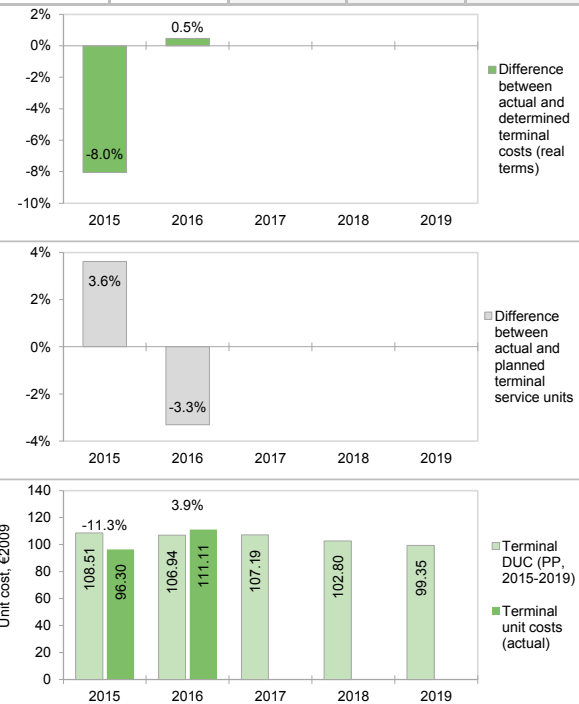
EANS overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+1.7 M€2009) and the surplus embedded in the actual cost of capital (+1.5 M€2009) amounts to +3.2 M€2009 (20.1% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 18.9%, which is significantly higher than the 8.9% planned in the PP.

ESTONIA: Terminal charging zone

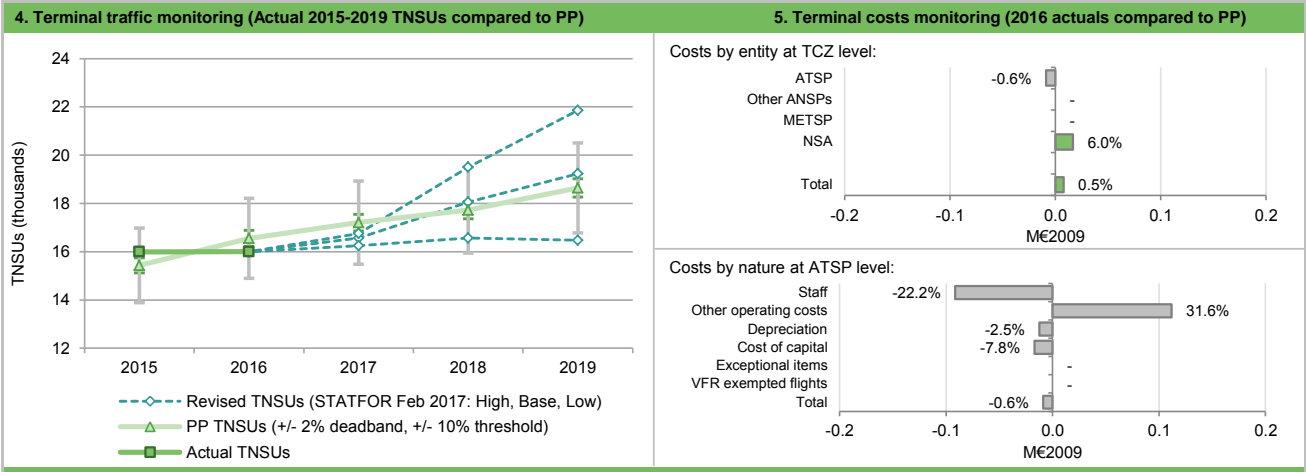
Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Estonia TCZ represents 0.2% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	EANS	· Airports with fewer than 70,000 IFRs ATMs:		2	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		0	
· Number of airports in charging zone in 2016:	2,	of which:		· Airports with more than 225,000 IFRs ATMs: 0	
2. Terminal DUC monitoring at Charging Zone level					
Estonia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	2 064 521	2 249 331	2 413 934	2 456 109	2 571 978
Inflation %	3.0%	3.1%	3.0%	3.0%	3.0%
Inflation index (100 in 2009)	123.3	127.1	130.9	134.8	138.9
Real terminal costs (EUR2009)	1 674 949	1 770 015	1 844 216	1 821 784	1 852 163
Total terminal Service Units	15 436	16 551	17 205	17 722	18 642
Real terminal unit cost per Service Unit (EUR2009)	108.51	106.94	107.19	102.80	99.35
Estonia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	1 803 641	2 099 000			
Inflation %	0.1%	0.8%			
Inflation index (100 in 2009)	117.1	118.0			
Real terminal costs (EUR2009)	1 540 149	1 778 134			
Total terminal Service Units	15 994	16 003			
Real terminal unit cost per Service Unit (EUR2009)	96.30	111.11			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value -260 880	in value -150 331			
	in % -12.6%	in % -6.7%			
Inflation %	in p.p. -2.9 p.p.	in p.p. -2.3 p.p.			
Inflation index (100 in 2009)	in p.p. -6.2 p.p.	in p.p. -9.0 p.p.			
Real terminal costs (EUR2009)	in value -134 801	in value 8 118			
	in % -8.0%	in % 0.5%			
Total terminal Service Units	in value 558	in value -548			
	in % 3.6%	in % -3.3%			
Real terminal unit cost per Service Unit (EUR2009)	in value -12.21	in value 4.17			
	in % -11.3%	in % 3.9%			
3. Focus on terminal at State/Charging Zone level					
There is only one Terminal Charging Zone (TCZ) in Estonia comprising Tallinn and Tartu airports.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (111.11 €2009) is +3.9% higher than planned in the PP (106.94 €2009). This difference results from the combination of lower than planned TNSUs (-3.3%) and higher than planned terminal costs (+0.5%, or -8.1 K€2009).					
Terminal service units					
Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (-3.3%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ATSP and the airspace users, with the loss borne by the ATSP amounting to 36.4 K€2009.					
Terminal costs					
In nominal terms, actual terminal costs are -6.7% lower than planned. However, since the actual inflation index is also lower than planned (-9.0 p.p.), the actual terminal costs are +0.5% above plans when expressed in €2009.					
The higher than planned terminal costs in real terms result from the combination of a slight reduction for the main ATS, EANS (-0.6% or -8.8 K€2009) and an increase for the NSA/EUROCONTROL costs (+6.0% or +16.9 K€2009). EANS being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.					
There are no costs exempt from cost-sharing reported for the TCZ.					



ESTONIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

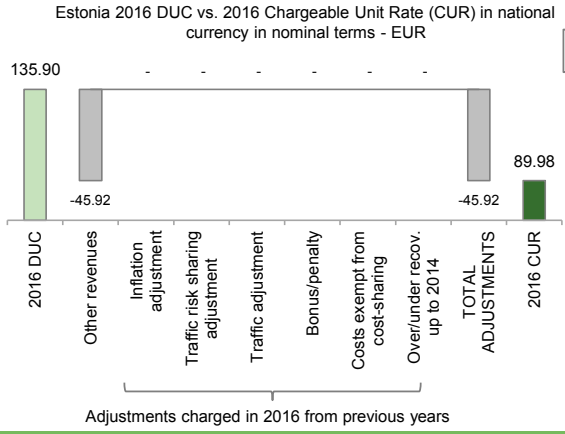


6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

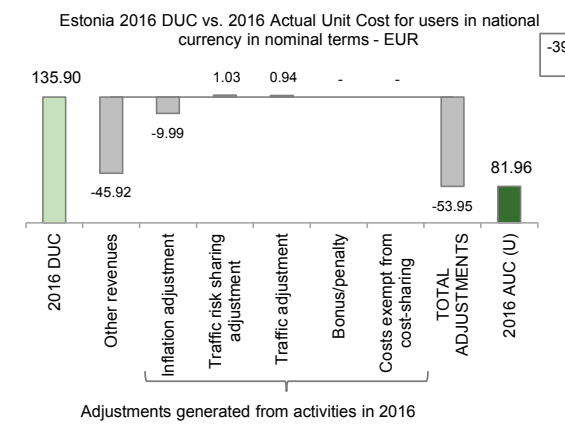
7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users



The CUR charged to airspace users in 2016 is 89.98 €. This is -33.8% lower than the nominal DUC (135.90 €) after deduction of other revenues (-45.92 €). According to the Additional Information provided with the Reporting Tables, this mainly reflects the fact that 30% of the terminal costs are not recovered through terminal navigation charges. Small amounts of government grants are also included in the other revenues.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (81.96 €) is -39.7% lower than the nominal DUC (135.90 €). The two most important factors contributing to the observed difference (-53.95 €) are:

- the other revenues (-45.92 €), see box 7 above for more details; and,
- the inflation adjustment (-9.99 €), which corresponds to the impact of a lower than planned inflation index for the year 2016, which will be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

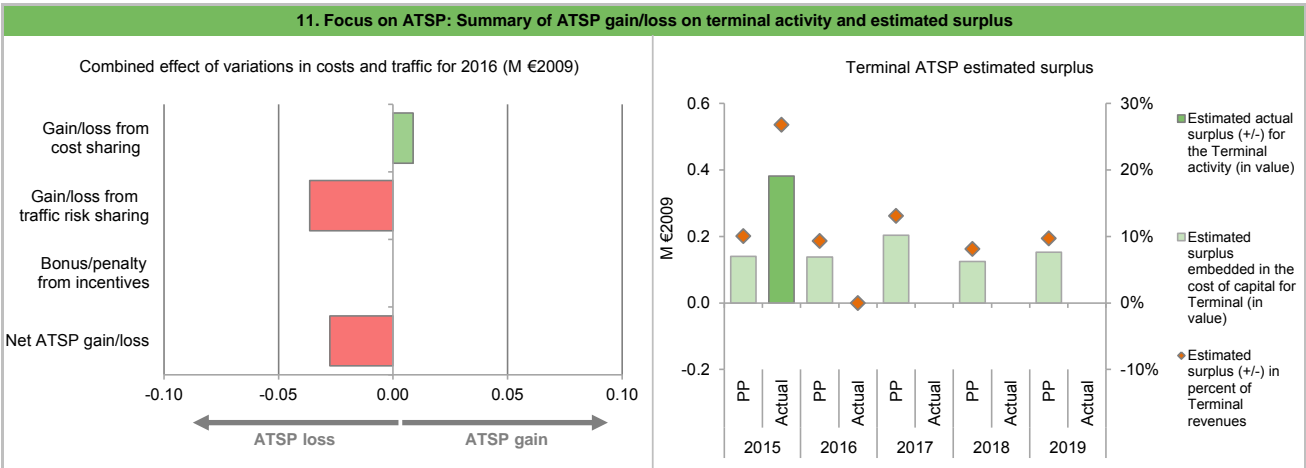
ESTONIA: Terminal ATSP (EANS)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	1 390	1 485			
Actual costs for the ATSP	1 244	1 477			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	147	9			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	147	9			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	3.6%	-3.3%			
Determined costs for the ATSP (PP) - based on actual inflation	1 391	1 520			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	34.6	-36.4			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	181	-28			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	3 732	3 734	3 373	3 010	2 667
Estimated proportion of financing through equity (in %)	42.0%	41.5%	68.0%	46.6%	64.1%
Estimated proportion of financing through equity (in value)	1 569	1 549	2 292	1 403	1 710
Estimated proportion of financing through debt (in %)	58.0%	58.5%	32.0%	53.4%	35.9%
Estimated proportion of financing through debt (in value)	2 163	2 185	1 081	1 607	957
Cost of capital pre-tax (in value)	219	218	243	184	187
Average interest on debt (in %)	3.7%	3.7%	3.7%	3.7%	3.7%
Interest on debt (in value)	79	80	39	59	35
Determined RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
Estimated surplus embedded in the cost of capital for terminal (in value)	140	138	204	125	152
Overall estimated surplus (+/-) for the terminal activity	140	138	204	125	152
Revenue/costs for the terminal activity	1 390	1 485	1 560	1 537	1 568
Estimated surplus (+/-) in percent of terminal revenues	10.0%	9.3%	13.1%	8.1%	9.7%
Estimated ex-ante RoE pre-tax rate (in %)	8.9%	8.9%	8.9%	8.9%	8.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	4 248	5 572			
Estimated proportion of financing through equity (in %)	53.0%	5.4%			
Estimated proportion of financing through equity (in value)	2 251	302			
Estimated proportion of financing through debt (in %)	47.0%	94.6%			
Estimated proportion of financing through debt (in value)	1 997	5 270			
Cost of capital pre-tax (in value)	273	201			
Average interest on debt (in %)	3.7%	3.3%			
Interest on debt (in value)	73	174			
Determined RoE pre-tax rate (in %)	8.9%	8.9%			
Estimated surplus embedded in the cost of capital for terminal (in value)	200	27			
Net ATSP gain(+)/loss(-) on terminal activity	181	-28			
Overall estimated surplus (+/-) for the terminal activity	381	-1			
Revenue/costs for the terminal activity	1 425	1 449			
Estimated surplus (+/-) in percent of terminal revenues	26.8%	0.0%			
Estimated ex-post RoE pre-tax rate (in %)	16.9%	-0.2%			

ESTONIA: Terminal ATSP (EANS)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 EANS terminal costs vs. PP

EANS actual terminal costs in the TCZ are -0.6% (-8.8 K€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided within the terminal Reporting Tables, the main drivers for this deviation are:

- lower staff costs (-22.2% or -91.4 K€2009);
- higher other operating costs (+31.6% or +111.9 K€2009);
- lower depreciation costs (-2.5% or -12.4 K€2009); and,
- a lower cost of capital (-7.8% or -16.9 K€2009) resulting from the combination of a higher asset base (mainly driven by higher net current assets) with a lower weighted average cost of capital (due to a larger proportion of debt financing).

EANS 2016 net gain/loss on terminal activity and overall estimated surplus

As shown in box 7 and explained in the Additional Information to the Reporting Tables, only 70% of the terminal costs are charged to airspace users in order to promote Estonian tourism and air traffic. On the other hand, it is not clear from the Additional Information how the remaining 30% are financed.

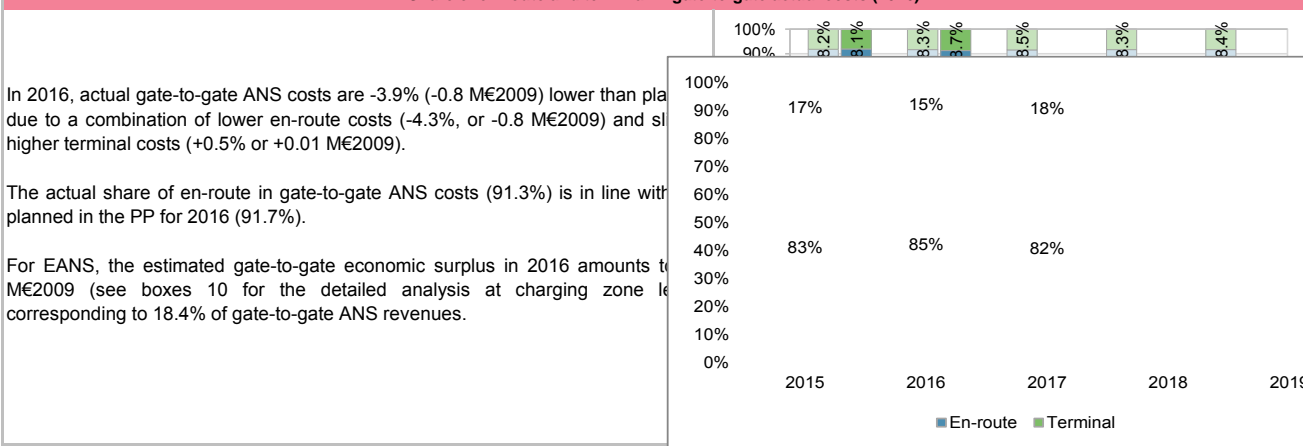
It is important to keep this information in mind when interpreting the net loss on terminal activity (-28 K€2009) and overall estimated negative surplus (-1 K€2009) presented in boxes 9 and 10.

ESTONIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Estonia: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	18 739 585	19 481 586	19 852 645	20 081 013	20 295 459
Real terminal costs (EUR2009)	1 674 949	1 770 015	1 844 216	1 821 784	1 852 163
Real gate-to-gate costs (EUR2009)	20 414 534	21 251 601	21 696 861	21 902 797	22 147 622
En-route share (%)	91.8%	91.7%	91.5%	91.7%	91.6%
Estonia: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	17 478 222	18 636 095			
Real terminal costs (EUR2009)	1 540 149	1 778 134			
Real gate-to-gate costs (EUR2009)	19 018 371	20 414 229			
En-route share (%)	91.9%	91.3%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-1 396 163	-837 373			
in %	-6.8%	-3.9%			
En-route share					
in p.p.	0.1%	-0.4%			

2. Share of en-route and terminal in gate-to-gate actual costs (2016)



3. Technical notes on en-route and terminal information reported by Estonia

Note 1:

It is noteworthy that the actual EUROCONTROL costs (1 298 K€) reported in the en-route Reporting Tables are different from the figure (1 039 K€) provided by EUROCONTROL on 15 May 2016 (provisional figures pending final audit review). For the purpose of this Monitoring Report, the EUROCONTROL costs reported in the en-route Reporting Tables have been taken into account.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Finland

Version: 1.1

Date: 9 October 2017

FINLAND

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	75	C	C	D	D	B
Finavia	80	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	FTSA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	16	2
Finavia	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	3	0
Occurrence reporting and Investigation	6	1
TOTAL	21	2

Observations

The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.

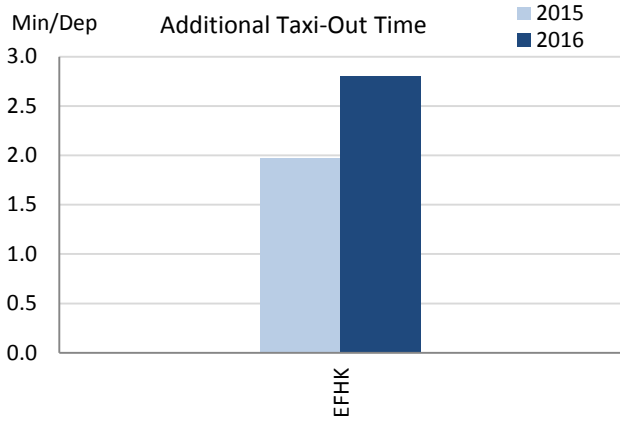
FINLAND

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

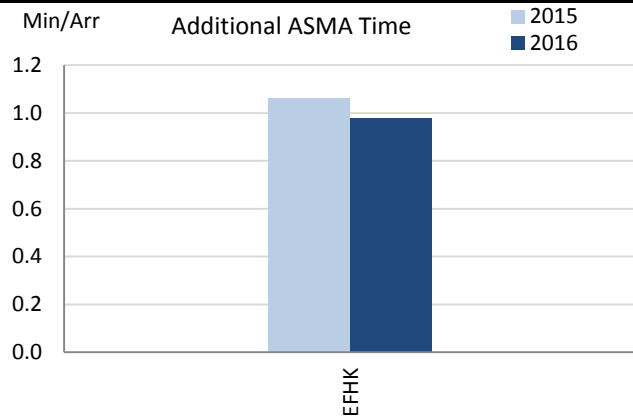
Finland has only identified the main airport at Helsinki as subject to RP2. The Airport Operator Data Flow is correctly established allowing for the calculation of environmental indicators.

2. Additional Taxi-Out Time



At Helsinki, the additional taxi-out time has increased with respect to 2015 by almost a minute in average, driven by the performance in the winter months. From April to September the performance is similar to 2015, with ATXOT below 2 min/dep. However, during the winter the ATXOT can reach up to 7 minutes in January.

3. Additional ASMA Time



The additional time in terminal airspace stays very low for an airport with this level of traffic.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Helsinki/ Vantaa	EFHK	1.97	2.80				1.06	0.98			

FINLAND

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.08	0.08	0.08	0.08	0.08	
Deadband +/-	0.05 - 0.08					
Actual performance	0.02	0.00				

National capacity incentive scheme

Finland applied a national incentive scheme based on the following criteria for the period 2015 – 2019:
 En route ATFM delay 2015-2019:
 0,02min / fkt or better: Bonus: 1 % of the revenues from air navigation services in year n
 0,03min / fkt: Bonus: 0,5 % of the revenues from air navigation services in year n
 0,04min / fkt: Bonus: 0,2% of the revenues from air navigation services in year n
 0,09min / fkt: Penalty: 0,2 % of the revenues from air navigation services in year n
 0,10min / fkt: Penalty: 0,5 % of the revenues from air navigation services in year n
 0,11min / fkt or worse: Penalty: Penalty: 1% of the revenues from air navigation services in year n

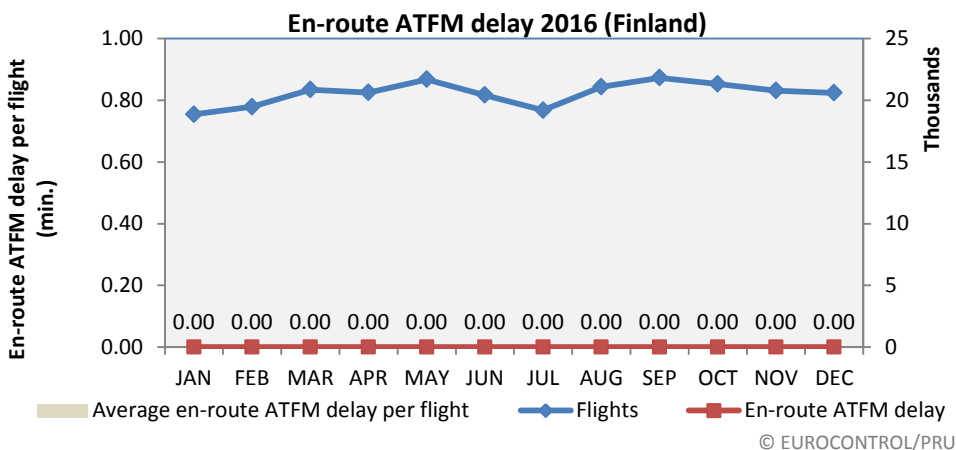
With an actual en route capacity performance of 0.00 minutes per flight in 2016, the ANSP Finavia will receive a bonus of 1% of the revenues from air navigation services in year n.

Finland reports that this is equivalent to €357,670 for 2016.

Compliance issues relating to national capacity incentive scheme

The PRB noted that the incentive schemes are not linked to FAB performance.

Observations regarding national capacity performance



En-route ATFM delay per flight (Finland)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.03	0.02	0.49	0.01	0.00	0.12	0.02	0.00

The excellent en route capacity performance in Finland during 2016, and the positive contribution both to the NEFAB and the Union-wide target for en route capacity is noted. It is noted that the Network Manager does not expect any capacity problems in Finland for the remainder of RP2.

Planning and Effective Use of CDRs

Finland did not provide any data since there are no CDRs in NEFAB.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 33%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%

Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

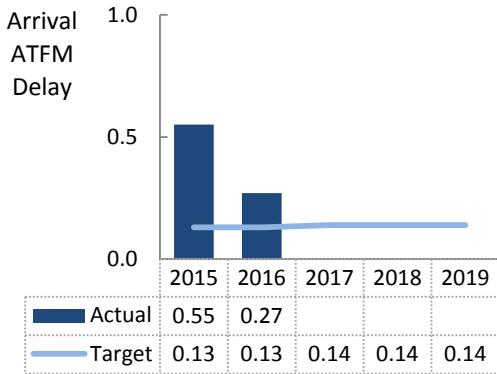
FINLAND

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Finland identifies its main airport Helsinki as subject to RP2 monitoring. Despite the reduction of the arrival ATFM delay in 2016 with respect to 2015, the target is missed for the second year in a row. The adherence with ATFM slots remained close but below 90%. As concerns pre-departure delay, there is a marginal increase of 0.03 min/dep. in 2016.

2. Arrival ATFM Delay



Traffic at Helsinki is stable throughout the months in 2015-2016. While in 2015 there was a peak of airport capacity related regulations in May-July, 2016 does not present any capacity related regulations, being weather the main reason for the arrival ATFM delay. Nevertheless these weather regulations are spread during the year.

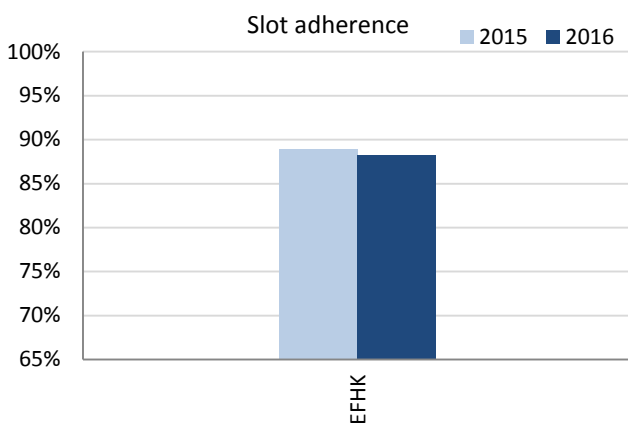
The achieved arrival ATFM delay (0.27 min/arr.) doubles the target for 2016.

3. Arrival ATFM Delay – National Target and Incentive Scheme

NEFAB PP establishes a national target on arrival ATFM delay for Finland which corresponds with the breakdown for the only airport EFHK. The challenging target is set at 50% of the observed average arrival ATFM delay over the last 5 years at the beginning of the reference period.

The FAB NE performance plan presents an incentive scheme for the national targets on arrival ATFM delay for Finland. According to this incentive scheme and the achieved performance, a penalty will be applied.

4. ATFM Slot Adherence



Slot adherence at Helsinki has slightly decreased in 2016 and it remains below 90%. The worst results in terms of ATFM slot adherence are observed during the winter months and signal a possible problem related with de-icing.

5. Pre-departure Delay

ANS at Helsinki (EFHK) accrue a reasonably low share of pre-departure delay which is commensurate with the level of traffic. Performance in 2016 decreased marginally by 0.03 min/dep. (2015: 0.15 min/dep. vs 2016: 0.18 min/dep.).

6. Appendix

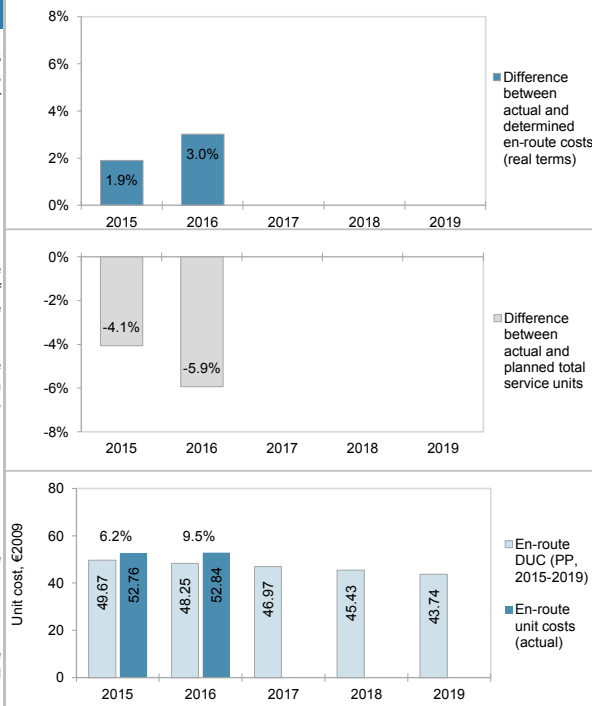
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Helsinki/ Vantaa	EFHK	0.55	0.27				89.0%	88.3%				0.15	0.18			

FINLAND: En-route charging zone

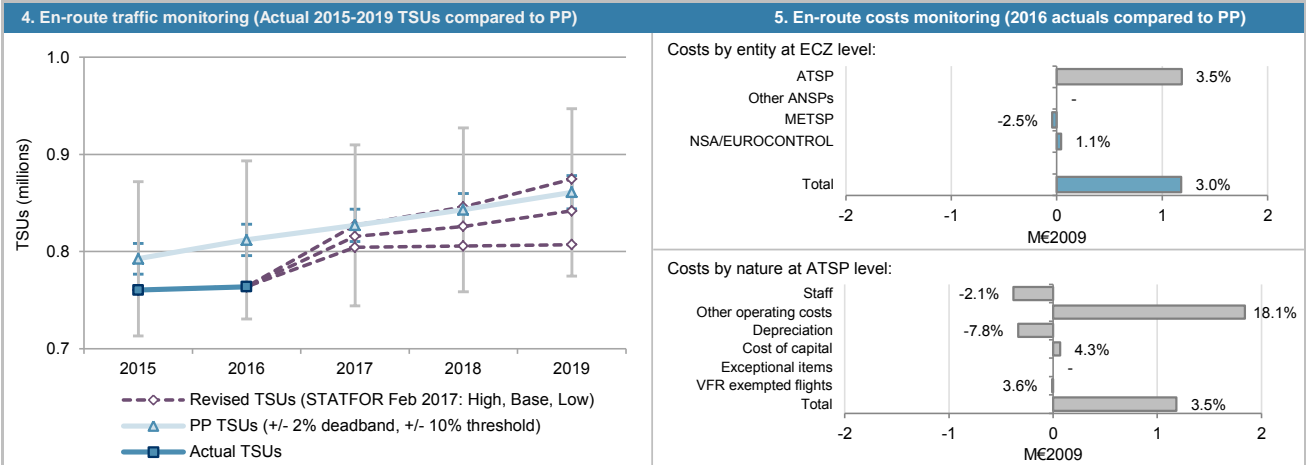
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Finland ECZ represents 0.6% of the SES en-route ANS determined costs in 2016						
· ATSP: Finavia						
· FAB: NEFAB						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Finland: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		45 050 000	45 596 000	46 064 000	46 321 000	46 468 000
Inflation %		1.5%	1.7%	1.9%	2.0%	2.0%
Inflation index (100 in 2009)		114.4	116.4	118.6	121.0	123.4
Real en-route costs (EUR2009)		39 368 663	39 179 750	38 843 860	38 294 684	37 662 953
Total en-route Service Units		792 600	812 000	827 000	843 000	861 000
Real en-route unit cost per Service Unit (EUR2009)		49.67	48.25	46.97	45.43	43.74
Finland: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		44 896 400	45 347 269			
Inflation %		-0.2%	0.4%			
Inflation index (100 in 2009)		111.9	112.4			
Real en-route costs (EUR2009)		40 118 861	40 360 311			
Total en-route Service Units		760 383	763 829			
Real en-route unit cost per Service Unit (EUR2009)		52.76	52.84			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-153 600	-248 731			
	in %	-0.3%	-0.5%			
Inflation %	in p.p.	-1.7 p.p.	-1.3 p.p.			
Inflation index (100 in 2009)	in p.p.	-2.5 p.p.	-4.0 p.p.			
Real en-route costs (EUR2009)	in value	750 198	1 180 561			
	in %	1.9%	3.0%			
Total en-route Service Units	in value	-32 217	-48 171			
	in %	-4.1%	-5.9%			
Real en-route unit cost per Service Unit (EUR2009)	in value	3.09	4.59			
	in %	6.2%	9.5%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost in real terms (52.84 €2009) is +9.5% higher than planned (48.25 €2009). This difference results from the combination of higher than planned en-route costs in real terms (+3.0%, or +1.2 M€2009), impacted by lower than planned inflation (see below "en-route costs"), and lower than planned TSUs (-5.9%).						
According to the information provided in the NEFAB 2016 Monitoring Report, "NSA is not considering corrective measures because the inflation is forecast to be closer to the planned inflation during the next years because of the recovering economy and because traffic has been recovering significantly since July 2016 and it is expected to remain so. The traffic forecast used in the PP for the remaining years of RP2 are in line with the most recent STATFOR forecast (February 2017)."						
En-route service units						
The difference between actual and forecast TSUs (-5.9%) falls outside the ±2% dead band, but is within the ±10% boundaries of the alert threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of en-route revenues is therefore shared between the ATSP and the airspace users, with the loss borne by the ATSP amounting to -1.1 M€2009.						
The adopted TSUs forecast for RP2 is in line with the STATFOR February 2014 base case forecast scenario. When considering the STATFOR February 2017 forecasts, there is now greater probability that, for the remaining of RP2, Finland en-route TSUs will remain within the ±2% dead band, or at least will remain within the ±10% threshold foreseen in the traffic risk-sharing mechanism. The NSA remarked in the 2016 NEFAB Monitoring report that "In October 2015 the traffic decreased significantly below forecast but in July 2016 the traffic started to recover and for the first months of 2017 (Jan-Apr) the traffic is 3,9 % above the determined SUs. However, due to significant decrease which started during the second half of 2016 the actual SUs were 5,93 % below the determined SUs in 2016."						
En-route costs						
In nominal terms, the 2016 actual en-route costs are slightly lower than planned (-0.5%, or -0.2 M€). However, since the 2016 actual inflation index is also lower (-4.0 p.p.), actual en-route costs in real terms are +3.0% higher than planned (+1.2 M€2009).						
The higher than planned en-route costs in real terms are mainly driven by higher costs for the ATSP (+3.5%, or +1.2 M€2009). A detailed analysis of the ATSP (Finavia) en-route costs is provided in box 12.						
Costs exempt from cost-sharing are reported for a total amount of -124 000 €2009. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.						



FINLAND: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

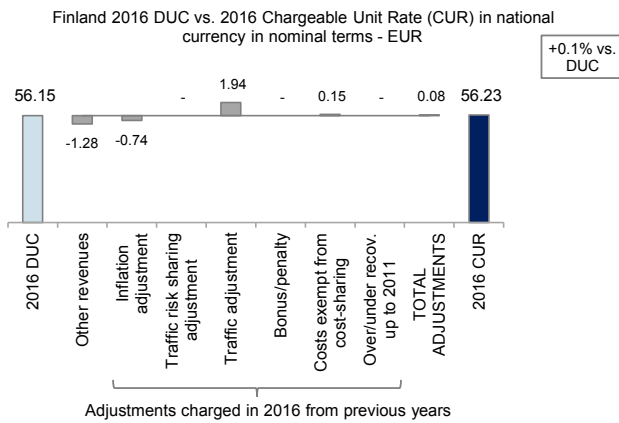


6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	-11	-39			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-15	-85			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	-11	-39			
	NSA/EUROCONTROL	-15	-85			
Total costs exempt from cost sharing		-26	-124			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

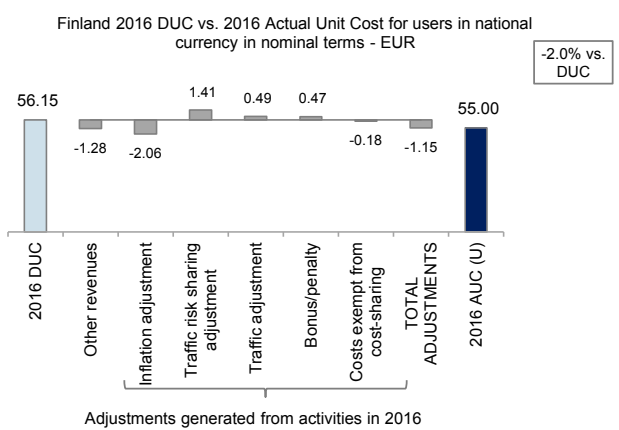
7. En-route DUC 2016 vs. 2016 Unit Rate charged to users



The CUR charged to airspace users in 2016 is 56.23 €. This is +0.1% higher than the nominal DUC (56.15 €). The difference between these two figures (+0.08 €) relates to the deduction of other revenues (-1.28 €) reflecting income related to military flights and SAR activity, the inflation adjustment (-0.74 €) balanced by the traffic risk sharing adjustment (+1.94 €) and cost exempt from cost sharing (+0.15 €).

These costs and adjustments are divided by the **forecast** TSUs for 2016.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users



The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (55.00 €) is -2.0% (-1.15 €) lower than the nominal DUC (56.15 €). The most important factors contributing to the observed difference are: the inflation adjustment (-2.06 €), the deduction of other revenues (-1.28 €), with the traffic risk sharing adjustment accounting for (+1.41 €), traffic adjustment (+0.49 €) and a bonus for capacity incentive (+0.47 €). Other revenues mainly reflect "income from the Finnish Defence forces related to military flights and from Ministry of the Interior related to SAR activity". The inflation adjustment reflects the impact of a lower than planned inflation index in 2016, which will be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TSUs in 2016.

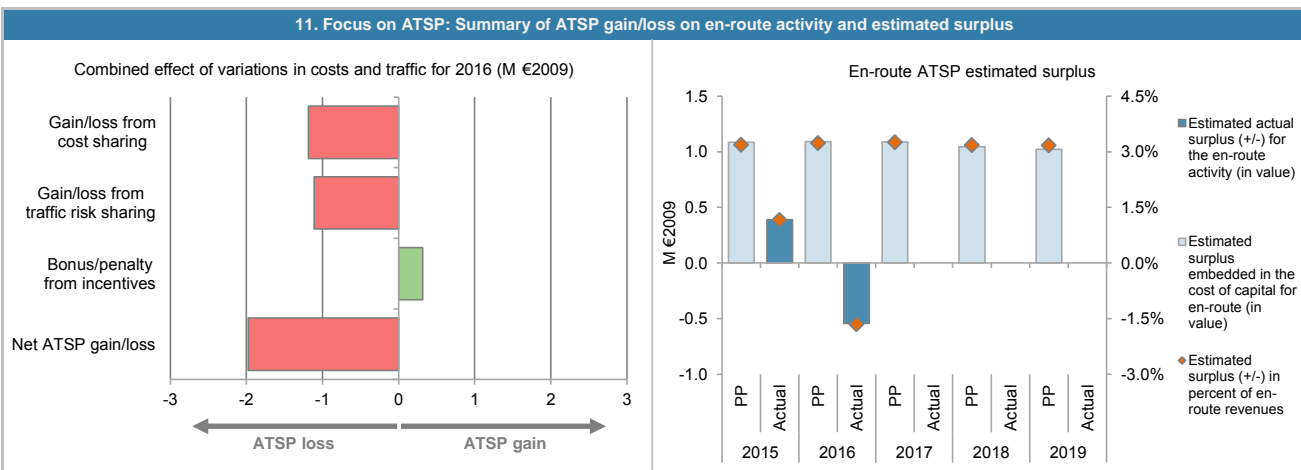
FINLAND: En-route ATSP (Finavia)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	33 991	33 734			
Actual costs for the ATSP	34 635	34 918			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-645	-1 185			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-645	-1 185			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-4.1%	-5.9%			
Determined costs for the ATSP (PP) - based on actual inflation	34 757	34 941			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-910	-1 111			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	332	318			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	-1 223	-1 977			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	31 430	31 626	31 525	30 253	29 561
Estimated proportion of financing through equity (in %)	40.0%	40.0%	40.0%	40.0%	40.0%
Estimated proportion of financing through equity (in value)	12 563	12 641	12 600	12 100	11 825
Estimated proportion of financing through debt (in %)	60.0%	60.0%	60.0%	60.0%	60.0%
Estimated proportion of financing through debt (in value)	18 866	18 985	18 925	18 152	17 736
Cost of capital pre-tax (in value)	1 575	1 585	1 579	1 516	1 482
Average interest on debt (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
Interest on debt (in value)	491	494	492	472	461
Determined RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
Estimated surplus embedded in the cost of capital for en-route (in value)	1 084	1 091	1 087	1 044	1 020
Overall estimated surplus (+/-) for the en-route activity	1 084	1 091	1 087	1 044	1 020
Revenue/costs for the en-route activity	33 991	33 734	33 367	32 806	32 163
Estimated surplus (+/-) in percent of en-route revenues	3.2%	3.2%	3.3%	3.2%	3.2%
Estimated ex-ante RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	29 674	28 347			
Estimated proportion of financing through equity (in %)	62.9%	58.6%			
Estimated proportion of financing through equity (in value)	18 668	16 625			
Estimated proportion of financing through debt (in %)	37.1%	41.4%			
Estimated proportion of financing through debt (in value)	11 006	11 722			
Cost of capital pre-tax (in value)	1 852	1 653			
Average interest on debt (in %)	2.2%	1.9%			
Interest on debt (in value)	240	218			
Determined RoE pre-tax rate (in %)	8.6%	8.6%			
Estimated surplus embedded in the cost of capital for en-route (in value)	1 611	1 435			
Net ATSP gain(+)/loss(-) on en-route activity	-1 223	-1 977			
Overall estimated surplus (+/-) for the en-route activity	388	-543			
Revenue/costs for the en-route activity	33 413	32 941			
Estimated surplus (+/-) in percent of en-route revenues	1.2%	-1.6%			
Estimated ex-post RoE pre-tax rate (in %)	2.1%	-3.3%			

FINLAND: En-route ATSP (Finavia)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 Finavia en-route costs vs. PP

In 2016, Finavia actual en-route costs are +3.5% (+1.2 M€2009) higher, in real terms, than planned. However in nominal terms Finavia's en-route costs are -0.1% lower than planned. According to the June 2017 Reporting Tables, this results from the combination of:

- Lower than planned staff costs (-2.1%, or -0.4 M€2009), mainly due to staff reductions;
- Higher than planned other operating costs (+18.1%, or +1.8 M€2009). "This was mainly due to higher than expected costs of Finavia's centralised services";
- Lower than planned depreciation costs (-7.8%, or -0.3 M€2009), "due to delayed investments. For example WAM-project was delayed due to bankruptcy of supplier"; and,
- A higher cost of capital (+4.3%, or +0.1 M€2009), corresponding to higher return on equity due to a higher proportion of financing through equity than planned as "Interest on loans were lower, but capital structure was different. Share of debt was only 41,1%. In the plan it was 60%".

Finavia net gain/loss on en-route activity in 2016

As shown in box 9, Finavia generated a net loss of -2.0 M€2009 on the en-route activity. This is a combination of three elements:

- a loss of -1.2 M€2009 arising from the cost-sharing mechanism;
- a loss of -1.1 M€2009 arising from the traffic risk-sharing mechanism; and,
- a gain of +0.3 M€2009, corresponding to a bonus eligible for payment to Finavia as part of the capacity target incentive mechanism. This amount corresponds to 1.0% of Finavia en-route revenues (based on the ATSP chargeable unit rate (46.83€) in 2016 times the actual TSUs (763 829). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission.

Finavia 2016 overall estimated surplus for the en-route activity

Ex-post, the 2016 overall estimated surplus taking into account the net loss from the en-route activity mentioned above (-2.0 M€2009) and the surplus embedded in the actual cost of capital (+1.4 M€2009) amounts to -0.6 M€2009 (in absolute terms representing 1.6% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is negative (-3.3%), which means that the surplus embedded in the cost of capital through the RoE (8.6%) was not sufficient to compensate for the losses arising from the en-route activity.

FINLAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services																													
Finland TCZ represents 1.2% of the SES terminal ANS determined costs in 2016		Is this TCZ applying traffic risk sharing?		Yes																									
ATSP:	Finavia	Airports with fewer than 70,000 IFRs ATMs:		0																									
National currency:	EUR	Airports with between 70,000 and 225,000 IFRs ATMs:		1																									
Number of airports in charging zone in 2016:	1,	of which:		Airports with more than 225,000 IFRs ATMs: 0																									
2. Terminal DUC monitoring at Charging Zone level																													
Finland: Data from RP2 Performance Plan																													
	2015D	2016D	2017D	2018D	2019D																								
Terminal costs (nominal EUR)	14 850 590	15 150 612	15 452 687	15 761 914	16 079 096																								
Inflation %	1.5%	1.7%	1.9%	2.0%	2.0%																								
Inflation index (100 in 2009)	114.4	116.4	118.6	121.0	123.4																								
Real terminal costs (EUR2009)	12 977 755	13 018 624	13 030 610	13 030 753	13 032 329																								
Total terminal Service Units	98 700	101 000	103 000	105 100	108 300																								
Real terminal unit cost per Service Unit (EUR2009)	131.49	128.90	126.51	123.98	120.34																								
Finland: Actual data from Reporting Tables																													
	2015A	2016A	2017A	2018A	2019A																								
Terminal costs (nominal EUR)	14 135 126	14 260 526																											
Inflation %	-0.2%	0.4%																											
Inflation index (100 in 2009)	111.9	112.4																											
Real terminal costs (EUR2009)	12 630 972	12 692 259																											
Total terminal Service Units	100 500	102 636																											
Real terminal unit cost per Service Unit (EUR2009)	125.68	123.66																											
Difference between Actuals and Planned																													
	2015	2016	2017	2018	2019																								
Terminal costs (nominal EUR)	in value -715 464	in value -890 086																											
	in % -4.8%	in % -5.9%																											
Inflation %	in p.p. -1.7 p.p.	in p.p. -1.3 p.p.																											
Inflation index (100 in 2009)	in p.p. -2.5 p.p.	in p.p. -4.0 p.p.																											
Real terminal costs (EUR2009)	in value -346 784	in value -326 366																											
	in % -2.7%	in % -2.5%																											
Total terminal Service Units	in value 1 800	in value 1 636																											
	in % 1.8%	in % 1.6%																											
Real terminal unit cost per Service Unit (EUR2009)	in value -5.81	in value -5.23																											
	in % -4.4%	in % -4.1%																											
3. Focus on terminal at State/Charging Zone level																													
<p>This analysis focuses on Finland Terminal Charging Zone comprising only Helsinki-Vantaa airport and for which Finland decided to apply the traffic risk sharing.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (123.66 €2009) is -4.1% lower than planned (128.90 €2009). This difference results from the combination of lower than planned terminal costs in real terms (-2.5%, or -0.3 M€2009) and higher than planned TNSUs (+1.6%).</p> <p>Terminal service units Traffic risk sharing applies in Finland Terminal Charging Zone. However, since the difference between actual and planned TNSUs (+1.6%) is within the ±2% dead band foreseen in the traffic risk sharing mechanism, the additional terminal revenues (+0.2 M€2009) are fully retained by the ATSP. When considering the STATFOR February 2017 traffic forecasts it appears that TNSUs are likely to remain higher than planned throughout RP2.</p> <p>Terminal costs In nominal terms, 2016 actual terminal costs are -5.9% lower than planned (-0.9 M€). However, since the 2016 actual inflation index is also lower than planned (-4.0 p.p.), in real terms, the 2016 actual terminal costs are -2.5% lower than planned (-0.3 M€2009).</p> <p>The lower than planned terminal costs in real terms are almost entirely driven by lower than planned actual costs for Finavia (-2.5%, or -0.3 M€2009). A detailed analysis of Finavia terminal costs is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of -19 000 €2009 all reported under the pension item and for the MET Service provider (FMI). These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>																													
<table border="1"> <caption>Difference between actual and determined terminal costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-2.7%</td> </tr> <tr> <td>2016</td> <td>-2.5%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	-2.7%	2016	-2.5%																		
Year	Difference (%)																												
2015	-2.7%																												
2016	-2.5%																												
<table border="1"> <caption>Difference between actual and planned terminal service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>1.8%</td> </tr> <tr> <td>2016</td> <td>1.6%</td> </tr> </tbody> </table>						Year	Difference (%)	2015	1.8%	2016	1.6%																		
Year	Difference (%)																												
2015	1.8%																												
2016	1.6%																												
<table border="1"> <caption>Terminal DUC (PP, 2015-2019) vs Terminal unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>Terminal DUC (PP, 2015-2019)</th> <th>Terminal unit costs (actual)</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>131.49</td> <td>125.68</td> <td>-4.4%</td> </tr> <tr> <td>2016</td> <td>128.90</td> <td>123.66</td> <td>-4.1%</td> </tr> <tr> <td>2017</td> <td>126.51</td> <td></td> <td></td> </tr> <tr> <td>2018</td> <td>123.98</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td>120.34</td> <td></td> <td></td> </tr> </tbody> </table>						Year	Terminal DUC (PP, 2015-2019)	Terminal unit costs (actual)	Difference (%)	2015	131.49	125.68	-4.4%	2016	128.90	123.66	-4.1%	2017	126.51			2018	123.98			2019	120.34		
Year	Terminal DUC (PP, 2015-2019)	Terminal unit costs (actual)	Difference (%)																										
2015	131.49	125.68	-4.4%																										
2016	128.90	123.66	-4.1%																										
2017	126.51																												
2018	123.98																												
2019	120.34																												

FINLAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-2.5%
Other ANSPs	-
METSP	-4.6%
NSA	8.9%
Total	-2.5%

Costs by nature at ATSP level:

Staff	1.5%
Other operating costs	-7.6%
Depreciation	-9.7%
Cost of capital	-
Exceptional items	3.7%
VFR exempted flights	-
Total	-2.5%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	-6	-19			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	-6	-19			
	NSA	0	0			
Total costs exempt from cost sharing		-6	-19			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Finland 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The terminal CUR charged to airspace users in 2016 is 140.32 €. This is -6.5% lower than the nominal terminal DUC (150.01 €). The difference between these two figures (-9.69 €) reflects a combination of the deduction of other revenues (-15.71 €) and the adjustment for under recovery (+6.02 €) from previous years up to 2014 carried-over to 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Finland 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

The Terminal actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (127.50 €) is -15.0% lower than the terminal nominal DUC (150.01 €). The two most important factors contributing to the observed difference (-22.51 €) are: the deduction of other revenues (-15.71 €) reflecting Finavia's decision to use commercial income to keep the unit rate low and the inflation adjustment (-5.10 €), which corresponds to the impact of a lower than planned inflation index in 2016 (-4.0 p.p.) and the forthcoming reimbursement to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

FINLAND: Terminal ATSP (Finavia)

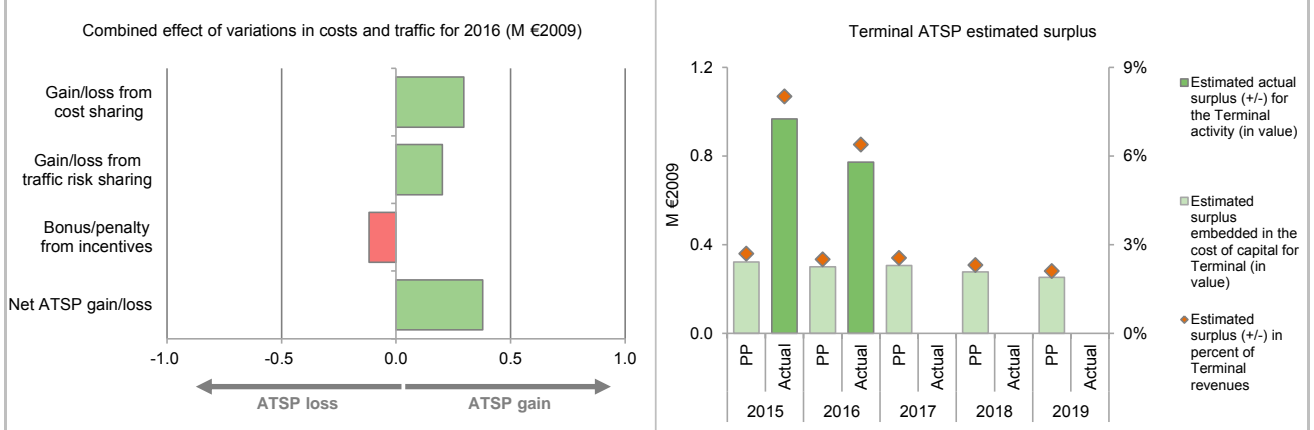
Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	11 977	12 013			
Actual costs for the ATSP	11 597	11 717			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	381	296			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	381	296			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.8%	1.6%			
Determined costs for the ATSP (PP) - based on actual inflation	12 247	12 442			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	223	202			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	-122	-118			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	482	379			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	9 372	8 726	8 903	8 047	7 364
Estimated proportion of financing through equity (in %)	40.0%	40.0%	40.0%	40.0%	40.0%
Estimated proportion of financing through equity (in value)	3 749	3 490	3 560	3 218	2 945
Estimated proportion of financing through debt (in %)	60.0%	60.0%	60.0%	60.0%	60.0%
Estimated proportion of financing through debt (in value)	5 623	5 236	5 343	4 829	4 419
Cost of capital pre-tax (in value)	469	437	446	403	369
Average interest on debt (in %)	2.6%	2.6%	2.6%	2.6%	2.6%
Interest on debt (in value)	146	136	139	126	115
Determined RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
Estimated surplus embedded in the cost of capital for terminal (in value)	323	301	307	277	254
Overall estimated surplus (+/-) for the terminal activity	323	301	307	277	254
Revenue/costs for the terminal activity	11 977	12 013	12 024	12 025	12 026
Estimated surplus (+/-) in percent of terminal revenues	2.7%	2.5%	2.6%	2.3%	2.1%
Estimated ex-ante RoE pre-tax rate (in %)	8.6%	8.6%	8.6%	8.6%	8.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	8 947	7 765			
Estimated proportion of financing through equity (in %)	63.0%	58.8%			
Estimated proportion of financing through equity (in value)	5 640	4 564			
Estimated proportion of financing through debt (in %)	37.0%	41.2%			
Estimated proportion of financing through debt (in value)	3 307	3 200			
Cost of capital pre-tax (in value)	558	453			
Average interest on debt (in %)	2.2%	1.9%			
Interest on debt (in value)	72	60			
Determined RoE pre-tax rate (in %)	8.6%	8.6%			
Estimated surplus embedded in the cost of capital for terminal (in value)	486	394			
Net ATSP gain(+)/loss(-) on terminal activity	482	379			
Overall estimated surplus (+/-) for the terminal activity	968	772			
Revenue/costs for the terminal activity	12 078	12 096			
Estimated surplus (+/-) in percent of terminal revenues	8.0%	6.4%			
Estimated ex-post RoE pre-tax rate (in %)	17.2%	16.9%			

FINLAND: Terminal ATSP (Finavia)

Monitoring of terminal COST-EFFICIENCY for 2016

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 Finavia terminal costs vs. PP

In real terms, Finavia 2016 actual terminal costs are -2.5% (-0.3 M€2009) lower than planned. According to the June 2017 TANS reporting tables, this results from the combination of:

- lower than planned staff costs in nominal terms (-2.0% or -0.1 M€); however since the 2016 actual inflation index is also lower than planned (-4.0 p.p.), in real terms, the staff costs are higher than planned in 2016 (+1.5%, or +0.1 M€2009);
- lower than planned other operating costs (-7.6%, or -0.3 M€2009) due to "saving in purchase of ANS equipment, maintenance fees and travelling expenses";
- lower than planned depreciation costs (-9.7%, or -0.1 M€2009) due to delayed investments; and,
- higher than planned cost of capital (+3.7%, or +0.02 M€2009) corresponding to higher return on equity due to a higher proportion of financing through equity than planned as "Interest on loans were lower, but capital structure was different. Share of debt was only 41,1%. In the plan it was 60%."

Finavia 2016 net gain/loss on terminal activity

As shown in box 9, the activity in Finland's terminal charging zone generated a net gain of +0.4 M€2009 in 2016. This is a combination of three elements:

- a gain of +0.3 M€2009 arising from the cost-sharing mechanism;
- a gain of +0.2 M€2009 arising from the traffic risk-sharing mechanism; and,
- a loss of -0.1 M€2009, corresponding to a penalty to be incurred by Finavia in 2018 as part of the terminal capacity target incentive mechanism since the terminal capacity target (ATFM arrival delay) was not reached in 2016.

This amount corresponds to 1.0% of Finavia terminal ANS revenues (based on the ATSP chargeable unit rate in 2016 (129.39€) times the actual 2016 TNSUs (102 636)). The inclusion of this penalty in the chargeable costs will be examined by the European Commission.

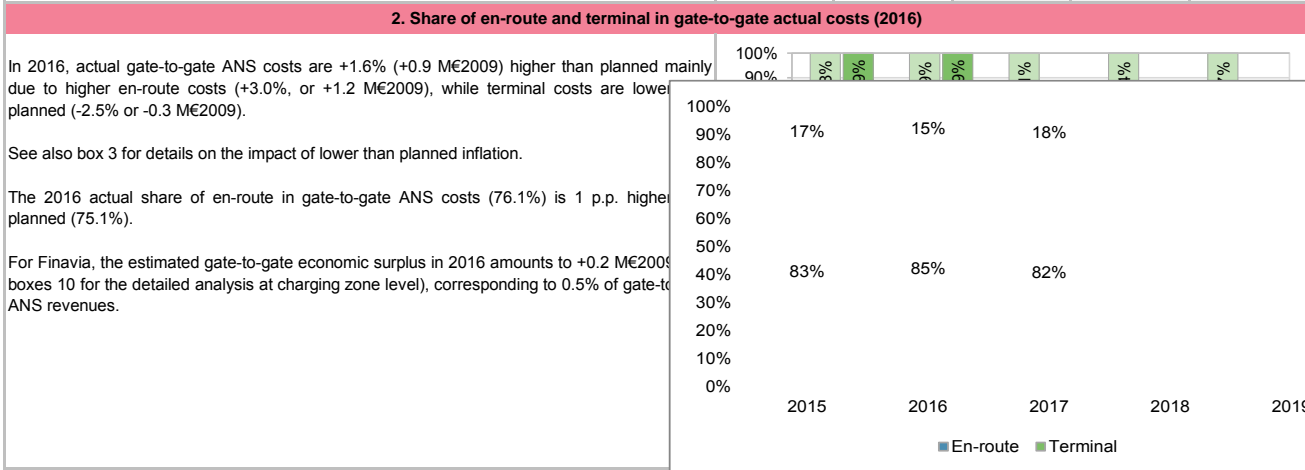
Finavia 2016 overall estimated surplus for the terminal activity

Ex-post, the 2016 overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+0.4 M€2009) and the surplus embedded in the cost of capital (+0.4 M€2009) amounts to +0.8 M€2009 (6.4% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 16.9%, which is significantly higher than the 8.6% planned.

FINLAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Finland: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	39 368 663	39 179 750	38 843 860	38 294 684	37 662 953
Real terminal costs (EUR2009)	12 977 755	13 018 624	13 030 610	13 030 753	13 032 329
Real gate-to-gate costs (EUR2009)	52 346 419	52 198 375	51 874 470	51 325 437	50 695 282
En-route share (%)	75.2%	75.1%	74.9%	74.6%	74.3%
Finland: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	40 118 861	40 360 311			
Real terminal costs (EUR2009)	12 630 972	12 692 259			
Real gate-to-gate costs (EUR2009)	52 749 833	53 052 570			
En-route share (%)	76.1%	76.1%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	403 414	854 195			
in %	0.8%	1.6%			
En-route share					
in p.p.	0.8%	1.0%			



3. Technical notes on en-route and terminal information reported by Finland

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Latvia

Version: 1.1

Date: 9 October 2017

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	64	C	C	C	C	D
LGS	78	C	D	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	N/A	100%
Runway Incursions (RIs)	N/A	100%
ATM Specific Occurrences (ATM-S)		N/A
Source of RAT data:	CAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	7	2
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	14	4
LGS	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	21	3

Observations

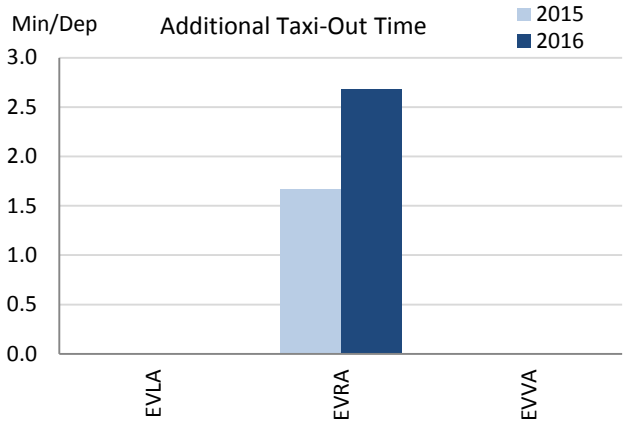
The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.

1. Overview

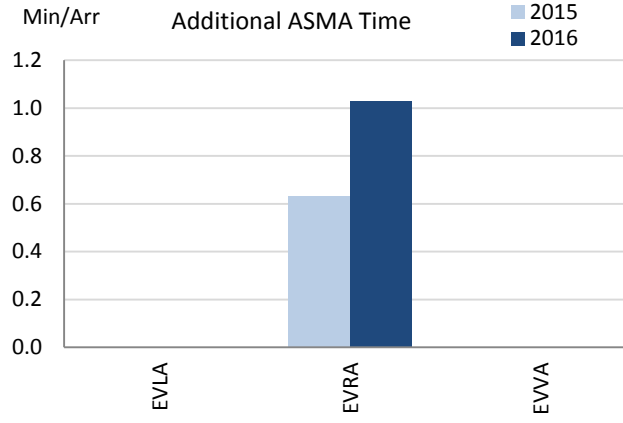
Latvia identified 3 airports as subject to RP2 monitoring, from which only Riga (EVRA) has established the Airport Operator Data Flow. Results for Latvia are therefore only representing this airport. Despite the traffic being slightly less than in 2015, both environmental indicators at Riga airport show deterioration in performance. Latvia shall empower the airport reporting entity at Liepaja (EVLA) and Ventspils (EVVA) to establish the airport operator data flow and/or address the remaining data issues.

2. Additional Taxi-Out Time



Although the additional taxi-out time at Riga is below the European average, it is a minute higher than other airports with similar number of movements. There is also an increase in the additional TXOT in 2016 with respect to previous year. Such increase is consistently throughout the year around 1 minute, except for January and November where the ATXOT were 2 to 3 minutes higher. According to Latvian NSA and the information provided by the airport, reconstruction activities took place at several aprons during the months of June, July and September, affecting the additional taxi-out times.

3. Additional ASMA Time



Similarly to ATXOT, the additional time in terminal airspace at Riga airport is higher than for other airports with the same number of movements, but also has increased by almost half a minute with respect to 2015.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Liepaja	EVLA	n/a	n/a				n/a	n/a			
Riga	EVRA	1.67	2.68				0.63	1.03			
Ventspils	EVVA	n/a	n/a				n/a	n/a			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.04	0.04	0.04	0.04	0.04	
Deadband +/-	0.01	0.01	0.01	0.01	0.01	
Actual performance	0.00	0.00				

National capacity incentive scheme

Latvia applied a national incentive scheme based on the following criteria for the period 2015 – 2019:
 0,00min / flt or better: Bonus: 1 % of the revenues from air navigation services in year n
 0,01min / flt: Bonus: 0,7% of the revenues from air navigation services in year n
 0,02min / flt: Bonus: 0,5% of the revenues from air navigation services in year n
 0,03min / flt: Bonus: 0,2% of the revenues from air navigation services in year n
 0,05min / flt: Penalty: 0,2 % of the revenues from air navigation services in year n
 0,06min / flt: Penalty: 0,5 % of the revenues from air navigation services in year n
 0,07min / flt or worse: Penalty: Penalty: 1% of the revenues from air navigation services in year n

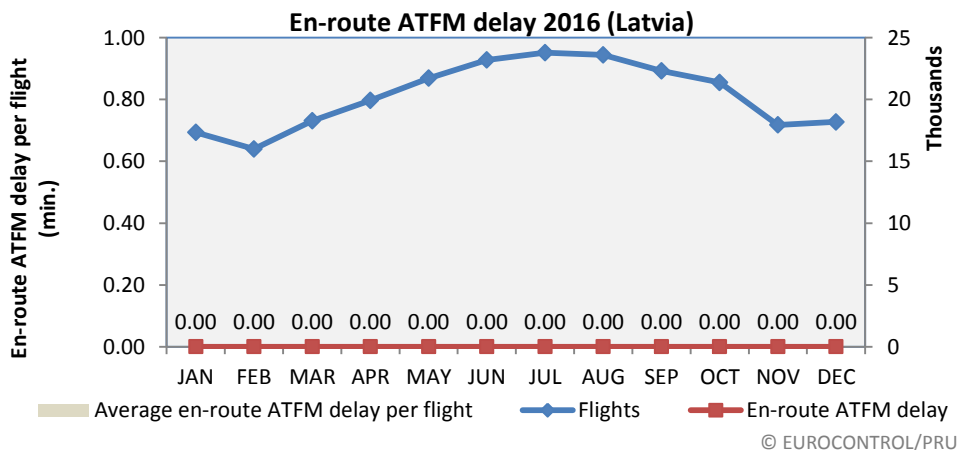
With an actual en route capacity performance of 0.00 minutes per flight in 2016, the ANSP LGS will receive a bonus of 1% of the revenues from air navigation services in year n.

Latvia has informed the PRB that the expected bonus will be €182 910 for 2016.

Compliance issues relating to national capacity incentive scheme

The PRB noted that the incentive schemes are not linked to FAB performance.

Observations regarding national capacity performance



En-route ATFM delay per flight (Latvia)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The excellent en route capacity performance in Latvia during 2016, and the positive contribution both to the NEFAB and the Union-wide target for en route capacity is noted. It is noted that the Network Manager does not expect any capacity problems in Latvia for the remainder of RP2.

Planning and Effective Use of CDRs

Latvia did not provide any data since there are no CDRs in NEFAB.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 64%.
The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 0%
Procedure 3 is not applicable within the State.

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

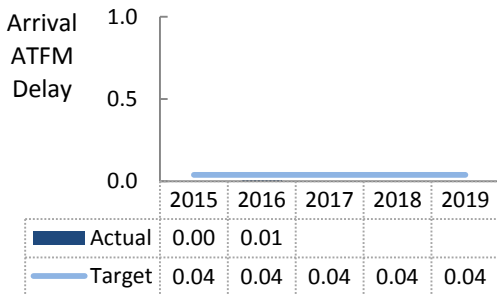
LATVIA

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

ANS at a total of 3 airports are subject to RP2 in Latvia. A national target on arrival ATFM has been established. The arrival ATFM delay is very low and although it has increased with respect to in 2015, it remains negligible and meets the target. Pre-departure delay can only be monitored at the time being for Riga (EVRA). Traffic at Liepaja (EVLA) and Ventspils (EVVA) in 2016 is marginal as the first one was under reconstruction in 2016 and the second is mainly for VFR operations.

2. Arrival ATFM Delay



Only Riga (EVRA) contributes to the arrival ATFM delay which is at a very low negligible level, showing no capacity constraints at Latvia.

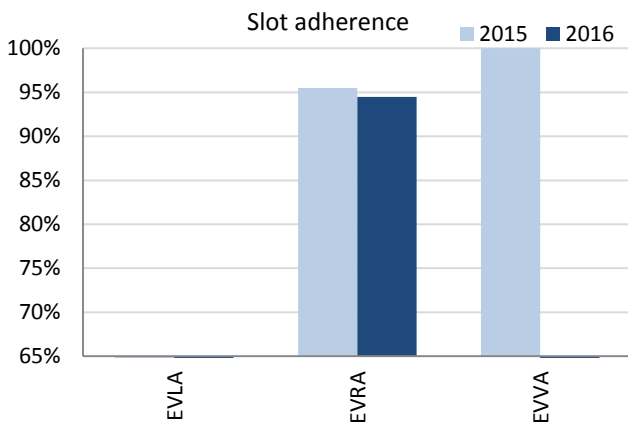
The achieved performance fully meets the target.

3. Arrival ATFM Delay – National Target and Incentive Scheme

NEFAB performance plan establishes a national target on arrival ATFM delay for Latvia, with breakdown only for Riga (EVRA). The conservative national target of 0.4 min/arr. is constant for the entire reference period 2.

The performance plan also presents an incentive scheme for Latvia. Given the actual performance in 2016 a bonus is granted to LGV.

4. ATFM Slot Adherence



The adherence to ATFM slots at Riga decreases 1% and sits just under the 95% threshold. There were no regulated departures at Liepaja (EVLA) and Ventspils (EVVA) in 2016.

5. Pre-departure Delay

The Airport Operator Data Flow is established for Riga (EVRA) and allows for the monitoring of pre-departure delay at LROP in 2016. Nevertheless, the high share of unreported delay in the first half of 2015 does not allow for the calculation in that year and requires further validation.

6. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Liepaja	EVLA	0.00	0.00				n/a					n/a	n/a			
Riga	EVRA	0.00	0.01				95.5%	94.5%				n/a	0.08			
Ventspils	EVVA	0.00	0.00				100.0%					n/a	n/a			

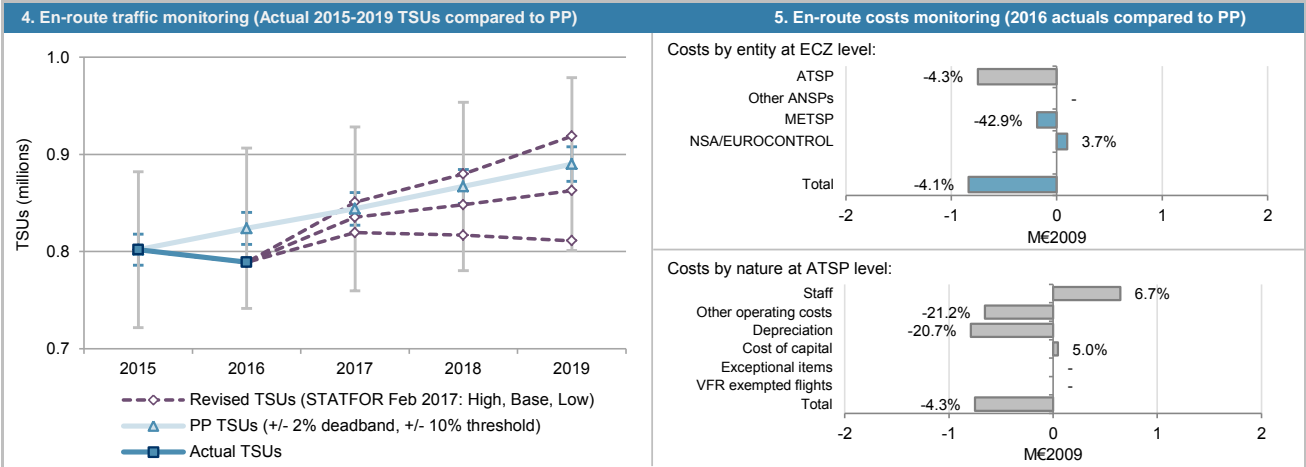
LATVIA: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Latvia ECZ represents 0.3% of the SES en-route ANS determined costs in 2016 ATSP: LGS FAB: NEFAB National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Latvia: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		22 680 662	23 118 000	23 902 000	24 692 818	25 534 000
Inflation %		2.5%	2.3%	2.3%	2.3%	2.3%
Inflation index (100 in 2009)		109.7	112.2	114.8	117.4	120.1
Real en-route costs (EUR2009)		20 683 885	20 603 685	20 823 477	21 028 777	21 256 247
Total en-route Service Units		802 000	824 000	844 000	867 000	890 000
Real en-route unit cost per Service Unit (EUR2009)		25.79	25.00	24.67	24.25	23.88
Latvia: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		21 182 494	21 047 181			
Inflation %		0.2%	0.1%			
Inflation index (100 in 2009)		106.4	106.5			
Real en-route costs (EUR2009)		19 913 164	19 766 193			
Total en-route Service Units		801 836	789 087			
Real en-route unit cost per Service Unit (EUR2009)		24.83	25.05			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-1 498 168	-2 070 819			
	in %	-6.6%	-9.0%			
Inflation %	in p.p.	-2.3 p.p.	-2.2 p.p.			
Inflation index (100 in 2009)	in p.p.	-3.3 p.p.	-5.7 p.p.			
Real en-route costs (EUR2009)	in value	-770 722	-837 492			
	in %	-3.7%	-4.1%			
Total en-route Service Units	in value	-164	-34 913			
	in %	-0.02%	-4.2%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-0.96	0.04			
	in %	-3.7%	0.2%			
3. Focus on en-route at State/Charging Zone level						
<p>En-route unit cost In 2016, the actual en-route unit cost in real terms (25.05 €2009) is slightly higher (+0.2%) than the DUC target (25.00 €2009). This difference results from lower than planned en-route costs (-4.1%, or -0.8 M€2009) and lower than planned TSUs (-4.2%).</p> <p>En-route service units The difference between actual and planned TSUs (-4.2%) falls outside the ±2% dead band, but remains within the ±10% boundaries of the alert threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of en-route revenues is therefore shared between the airspace users and the ATSP, with the latter bearing a loss of -0.5 M€2009. Based on the STATFOR February 2017 TSUs baseline forecast scenario, the TSUs are expected to remain below the level underpinning the DUC targets throughout RP2.</p> <p>En-route costs In nominal terms, actual en-route costs are -9.0% lower than planned. However, since the actual inflation index is also lower than planned (-5.7 p.p.), actual en-route costs are -4.1% below planned when expressed in €2009. The lower than planned en-route costs in real terms are driven by LGS (-4.3%, or -0.7 M€2009) and MET (-42.9%, or -0.2 M€2009), while NSA/EUROCONTROL costs are higher than planned (+3.7%, or +0.1 M€2009). A detailed analysis of the ATSP (LGS) en-route costs is provided in Box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of -0.03 M€2009 corresponding to lower than planned EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						

LATVIA: En-route charging zone

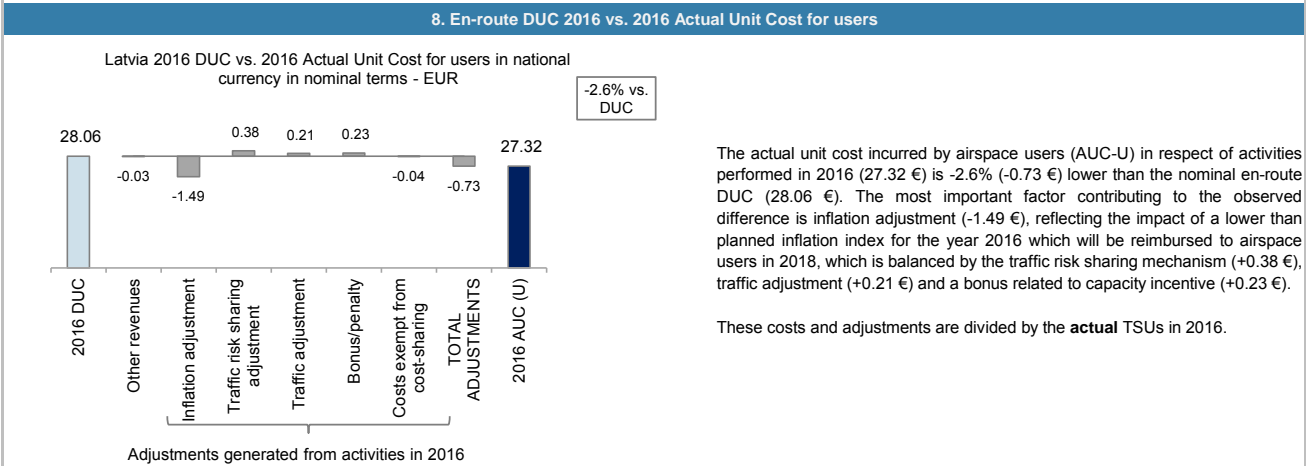
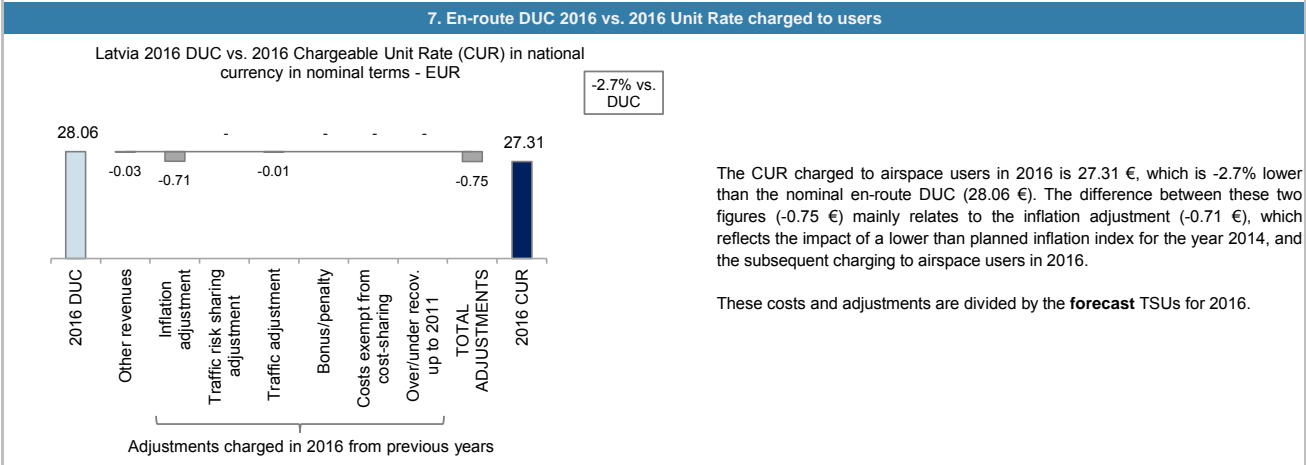
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-26	-26			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-26	-26			
Total costs exempt from cost sharing		-26	-26			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



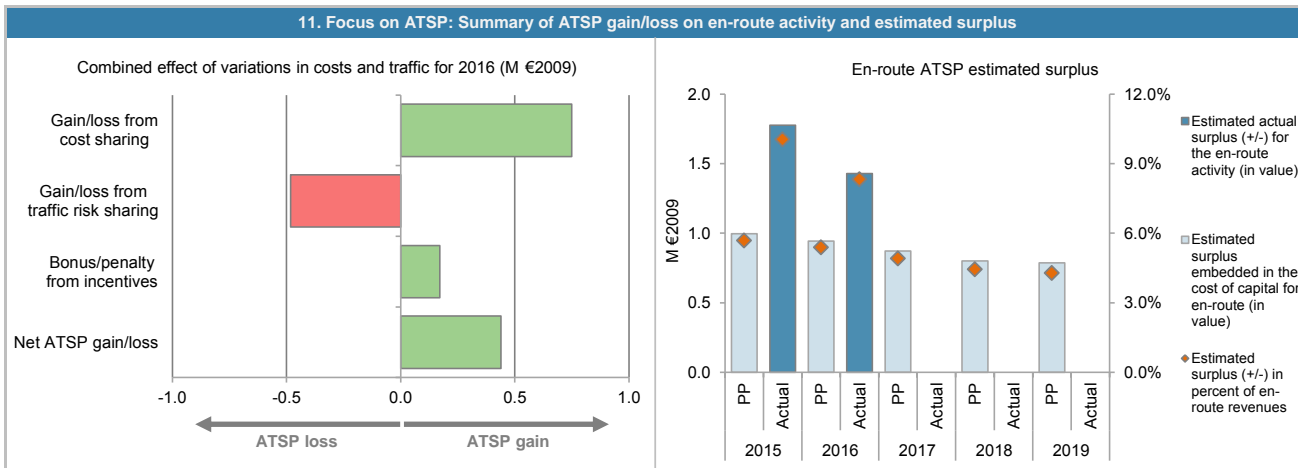
LATVIA: En-route ATSP (LGS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	17 518	17 486			
Actual costs for the ATSP	16 896	16 737			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	622	749			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	622	749			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.0%	-4.2%			
Determined costs for the ATSP (PP) - based on actual inflation	17 682	18 043			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-4	-482			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	176	172			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	794	439			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	15 008	14 296	13 320	12 335	11 907
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	15 008	14 296	13 320	12 335	11 907
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	996	943	873	801	786
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	6.6%	6.6%	6.6%	6.5%	6.6%
Estimated surplus embedded in the cost of capital for en-route (in value)	996	943	873	801	786
Overall estimated surplus (+/-) for the en-route activity	996	943	873	801	786
Revenue/costs for the en-route activity	17 518	17 486	17 751	18 030	18 325
Estimated surplus (+/-) in percent of en-route revenues	5.7%	5.4%	4.9%	4.4%	4.3%
Estimated ex-ante RoE pre-tax rate (in %)	6.6%	6.6%	6.6%	6.5%	6.6%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	14 812	15 012			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	14 812	15 012			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	983	990			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	6.6%	6.6%			
Estimated surplus embedded in the cost of capital for en-route (in value)	983	990			
Net ATSP gain(+)/loss(-) on en-route activity	794	439			
Overall estimated surplus (+/-) for the en-route activity	1 777	1 430			
Revenue/costs for the en-route activity	17 690	17 176			
Estimated surplus (+/-) in percent of en-route revenues	10.0%	8.3%			
Estimated ex-post RoE pre-tax rate (in %)	12.0%	9.5%			

LATVIA: En-route ATSP (LGS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 LGS en-route costs vs. PP

In 2016, LGS actual en-route costs are -4.3% (-0.7 M€2009) lower, in real terms, than planned. According to the June 2017 Reporting Tables, this results from the combination of:

- Higher than planned staff costs (+6.7%, or +0.6 M€2009). However, as highlighted in box 3, the lower than planned 2016 inflation index (-5.7 p.p.) is affecting the comparison of costs. In nominal terms, the staff costs are (+1.3%) higher than planned (or +0.1 M€). Latvia reports that for LGS: "the tax legislation has changed in Latvia (introduction of solidarity tax) which has an adverse effect on the personnel expenses. In Performance plan it was assumed, that there will be no changes in tax legislation, these costs should be treated as uncontrollable by LGS." In addition "the management of LGS has concluded an agreement with ATCO trade organizations, that the annual increase of salary shall be no less than 2% p.a. up to FY 2026".
- Lower than planned other operating costs (-21.2%, or -0.7 M€2009). This is reported to be mainly due to the postponement of the CPDLC project at EU level (estimated impact -200 000€) and cost-containment measures taken by LGS (especially business trips and training).
- Lower than planned depreciation costs (-20.7%, or -0.8 M€2009), mainly due to underspending/delayed projects in 2015.
- Higher than planned cost of capital in real terms (+5.0%, or +0.05 M€2009), however the 2016 inflation index is lower than planned (-5.7 p.p.) and this is affecting the comparison of costs. In nominal terms, the cost of capital is lower (-0.3%) than planned (-0.004 M€ or exactly -3 694€).

LGS net gain/loss on en-route activity in 2016

As shown in box 9, LGS generated a net gain of +0.4 M€2009 on the en-route activity in 2016. This is a combination of three elements:

- a gain of +0.7 M€2009 arising from the cost-sharing mechanism;
- a loss of -0.5 M€2009 arising from the traffic risk-sharing mechanism; and,
- a gain of +0.2 M€2009 corresponding to a bonus eligible for payment to LGS as part of the capacity target incentive mechanism. This amount corresponds to 1.0% of LGS en-route revenues (based on the ATSP chargeable unit rate in 2016 (23.18€) times the actual TSUs (789 087)). The inclusion of this bonus in the chargeable cost base will be examined by the European Commission. See also **Note 1** at the end of this Report.

LGS 2016 overall estimated surplus for the en-route activity

Ex-post, the 2016 overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+0.4 M€2009) and the surplus embedded in the actual cost of capital (+1.0 M€2009) amounts to +1.4 M€2009 (8.3% of the 2016 en-route revenues). The resulting 2016 ex-post rate of return on equity is 9.5%, which is higher than the 6.6% planned in the PP.

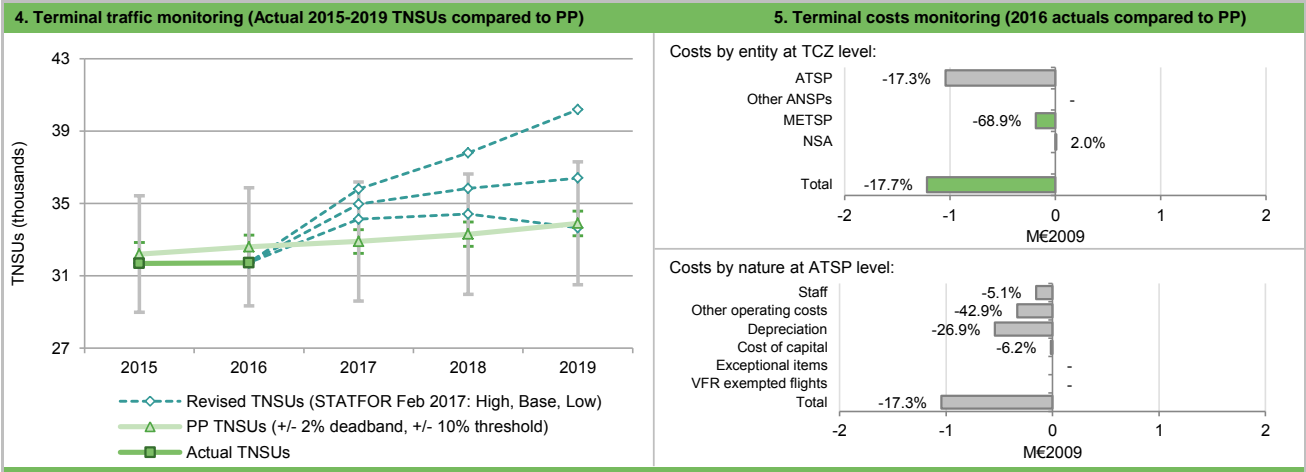
LATVIA: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services						
· Latvia TCZ represents 0.6% of the SES terminal ANS determined costs in 2016					· Is this TCZ applying traffic risk sharing?	No
· ATSP: LGS					· Airports with fewer than 70,000 IFRs ATMs:	3
· National currency: EUR					· Airports with between 70,000 and 225,000 IFRs ATMs:	0
· Number of airports in charging zone in 2016: 3, of which:					· Airports with more than 225,000 IFRs ATMs:	0
2. Terminal DUC monitoring at Charging Zone level						
Latvia: Data from RP2 Performance Plan						
	2015D	2016D	2017D	2018D	2019D	
Terminal costs (nominal EUR)	7 583 029	7 698 210	7 903 554	8 108 786	8 262 790	
Inflation %	2.5%	2.3%	2.3%	2.3%	2.3%	
Inflation index (100 in 2009)	109.7	112.2	114.8	117.4	120.1	
Real terminal costs (EUR2009)	6 915 428	6 860 952	6 885 595	6 905 565	6 878 511	
Total terminal Service Units	32 200	32 600	32 900	33 300	33 900	
Real terminal unit cost per Service Unit (EUR2009)	214.76	210.46	209.29	207.37	202.91	
Latvia: Actual data from Reporting Tables						
	2015A	2016A	2017A	2018A	2019A	
Terminal costs (nominal EUR)	6 030 644	6 010 389				
Inflation %	0.2%	0.1%				
Inflation index (100 in 2009)	106.4	106.5				
Real terminal costs (EUR2009)	5 669 267	5 644 581				
Total terminal Service Units	31 690	31 722				
Real terminal unit cost per Service Unit (EUR2009)	178.90	177.94				
Difference between Actuals and Planned						
	2015	2016	2017	2018	2019	
Terminal costs (nominal EUR)	in value -1 552 384	in value -1 687 821				
	in % -20.5%	in % -21.9%				
Inflation %	in p.p. -2.3 p.p.	in p.p. -2.2 p.p.				
Inflation index (100 in 2009)	in p.p. -3.3 p.p.	in p.p. -5.7 p.p.				
Real terminal costs (EUR2009)	in value -1 246 162	in value -1 216 371				
	in % -18.0%	in % -17.7%				
Total terminal Service Units	in value -510	in value -878				
	in % -1.6%	in % -2.7%				
Real terminal unit cost per Service Unit (EUR2009)	in value -35.87	in value -32.52				
	in % -16.7%	in % -15.5%				
3. Focus on terminal at State/Charging Zone level						
<p>This analysis focuses on Latvia Terminal Charging Zone comprising Riga, Liepaja and Ventspils airports.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (177.94 €2009) is -15.5% lower than planned (210.46 €2009). This difference results from the combination of significantly lower than planned terminal costs (-17.7%, or -1.2 M€2009) and lower than planned TNSUs (-2.7%).</p> <p>Terminal service units The traffic risk sharing mechanism does not apply in Latvia TCZ. Therefore the difference between actual and planned TNSUs (-2.7%) generates a difference in terminal revenues for 2016 (-0.2 M€), which will be entirely recovered from airspace users in 2018.</p> <p>Terminal costs In nominal terms, actual terminal costs are -21.9% lower than planned. However, since the actual inflation index is also lower than planned (-5.7 p.p.), the actual terminal costs are -17.7% below plans when expressed in real terms (€2009).</p> <p>The significantly lower than planned terminal costs in real terms are driven by LGS (-17.3%, or -1.0 M€2009) and MET SP (-68.9%, or -0.2 M€2009), while the NSA records slightly higher costs than planned (+2.0%, or +0.01 M€2009). A detailed analysis of the ATSP (LGS) terminal costs is provided in box 12.</p> <p>No costs exempt from cost-sharing are reported for Latvia TCZ.</p>						

LATVIA: Terminal charging zone

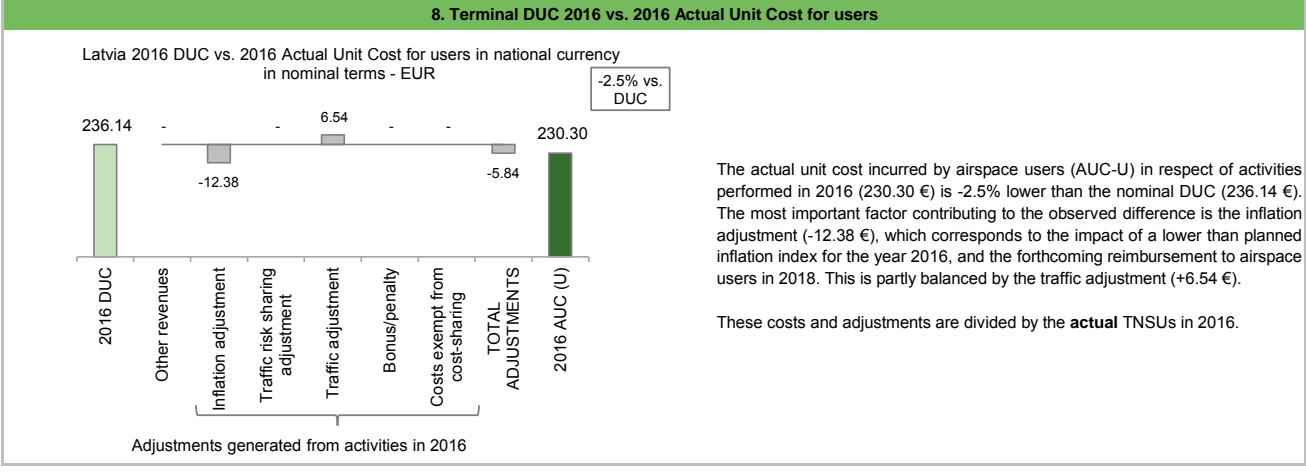
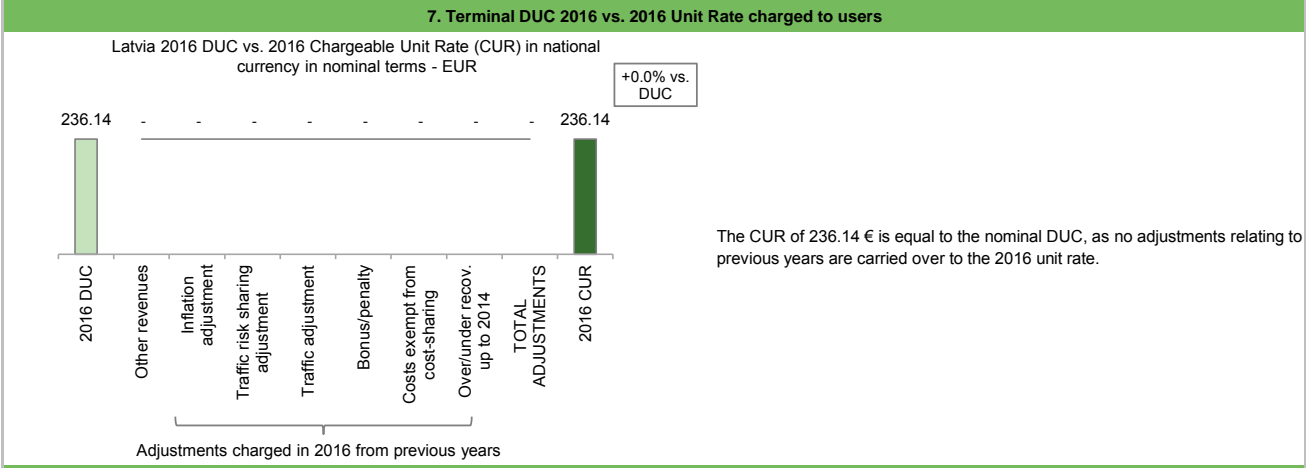
Monitoring of terminal COST-EFFICIENCY for 2016



6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



LATVIA: Terminal ATSP (LGS)

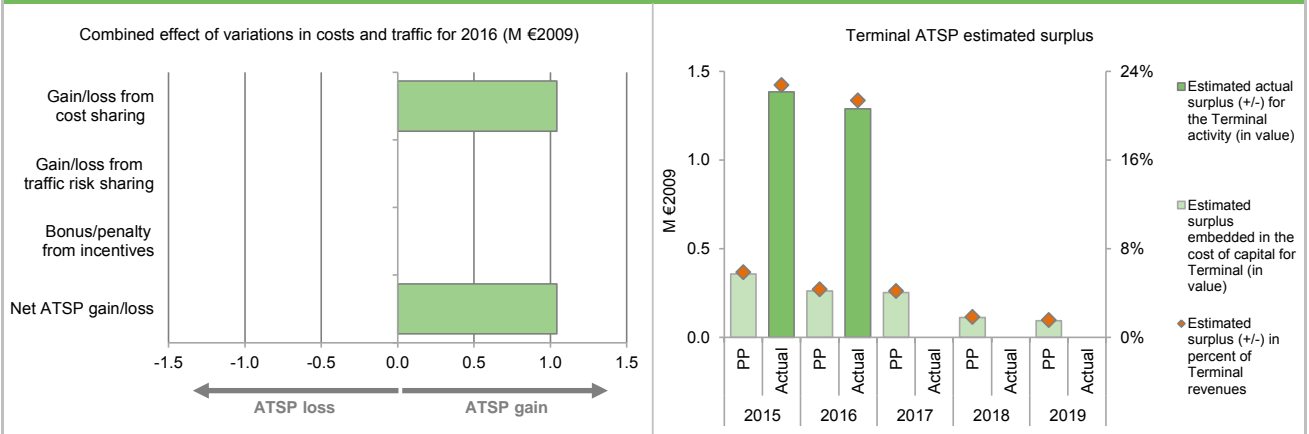
Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	6 080	6 032			
Actual costs for the ATSP	5 018	4 989			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 062	1 043			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 062	1 043			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Not Applicable					
Not Applicable					
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	1 062	1 043			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	6 855	6 774	6 739	6 587	6 737
Estimated proportion of financing through equity (in %)	100.0%	100.0%	100.0%	100.0%	100.0%
Estimated proportion of financing through equity (in value)	6 855	6 774	6 739	6 587	6 737
Estimated proportion of financing through debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Estimated proportion of financing through debt (in value)	0	0	0	0	0
Cost of capital pre-tax (in value)	358	262	254	113	95
Average interest on debt (in %)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on debt (in value)	0	0	0	0	0
Determined RoE pre-tax rate (in %)	5.2%	3.9%	3.8%	1.7%	1.4%
Estimated surplus embedded in the cost of capital for terminal (in value)	358	262	254	113	95
Overall estimated surplus (+/-) for the terminal activity	358	262	254	113	95
Revenue/costs for the terminal activity	6 080	6 032	6 062	6 101	6 092
Estimated surplus (+/-) in percent of terminal revenues	5.9%	4.3%	4.2%	1.9%	1.6%
Estimated ex-ante RoE pre-tax rate (in %)	5.2%	3.9%	3.8%	1.7%	1.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	6 145	6 352			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	6 145	6 352			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	321	245			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	5.2%	3.9%			
Estimated surplus embedded in the cost of capital for terminal (in value)	321	245			
Net ATSP gain(+)/loss(-) on terminal activity	1 062	1 043			
Overall estimated surplus (+/-) for the terminal activity	1 383	1 288			
Revenue/costs for the terminal activity	6 080	6 032			
Estimated surplus (+/-) in percent of terminal revenues	22.8%	21.4%			
Estimated ex-post RoE pre-tax rate (in %)	22.5%	20.3%			

LATVIA: Terminal ATSP (LGS)

Monitoring of terminal COST-EFFICIENCY for 2016

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 LGS terminal costs in Latvia TCZ vs. PP

LGS 2016 actual terminal costs in real terms are significantly lower (-17.3%, or -1.0 M€2009) than planned. According to the June 2017 terminal ANS reporting tables, this difference results from reductions across all cost categories:

- lower than planned staff costs (-5.1%, or -0.2 M€2009);
- lower than planned other operating costs (-42.9%, or -0.3 M€2009);
- lower than planned depreciation costs (-26.9%, or -0.5 M€2009); and,
- lower than planned cost of capital (-6.2%, or -0.02 M€2009).

The main driver for the observed deviation between actual and planned other operating costs are cost containment measures introduced by LGS management (especially business trips and training).

The main drivers for the observed deviations between actual and planned capital related costs (depreciation and cost of capital) are underspending in previous years and postponement of several large investment projects related to terminal services resulting in a lower asset base).

LGS 2016 net gain/loss on terminal activity in TCZ

As shown in box 9, the terminal activity generated a net gain of +1.0 M€2009 in 2016, as a result of the cost-sharing mechanism. Traffic risk sharing does not apply and a bonus eligible for payment to LGS as part of the capacity target incentive mechanism will not be applied for the Terminal Charging Zone. See also **Note 1** at the end of this Report.

LGS 2016 overall estimated surplus for the terminal activity in TCZ

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+1.0 M€2009) and the surplus embedded in the cost of capital (+0.3 M€2009) amounts to +1.3 M€2009 (21.4% of the 2016 terminal ANS revenues). The resulting ex-post rate of return on equity is 20.3%, which is significantly higher than the 3.9% planned for 2016.

LATVIA: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
Latvia: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	20 683 885	20 603 685	20 823 477	21 028 777	21 256 247																		
Real terminal costs (EUR2009)	6 915 428	6 860 952	6 885 595	6 905 565	6 878 511																		
Real gate-to-gate costs (EUR2009)	27 599 314	27 464 637	27 709 071	27 934 342	28 134 758																		
En-route share (%)	74.9%	75.0%	75.2%	75.3%	75.6%																		
Latvia: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	19 913 164	19 766 193																					
Real terminal costs (EUR2009)	5 669 267	5 644 581																					
Real gate-to-gate costs (EUR2009)	25 582 430	25 410 774																					
En-route share (%)	77.8%	77.8%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	-2 016 884	-2 053 863																					
in %	-7.3%	-7.5%																					
En-route share																							
in p.p.	2.9%	2.8%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
<p>In 2016, actual gate-to-gate ANS costs are -7.5% (or -2.0 M€2009) lower than planned due to reductions in both en-route costs (-4.1%, or -0.8 M€2009) and terminal ANS costs (-17.7%, or -1.2 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (77.8%) is 2.8 p.p. higher than planned for 2016 (75.0%).</p> <p>For LGS, the estimated gate-to-gate economic surplus in 2016 amounts to 2.7 M€2009 (see Box 10 for the detailed analysis at charging zone level), corresponding to 11.7% of 2016 gate-to-gate ANS revenues.</p>																							
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																					
2015	83%	17%																					
2016	85%	15%																					
2017	82%	18%																					
2018																							
2019																							
3. Technical notes on en-route and terminal information reported by Latvia																							
<p>Note 1: In the NEFAB Monitoring Report, Latvia disclosed the amounts of bonuses for achieving the local en-route and terminal capacity targets under the capacity incentive mechanism in 2016 (182 910€ and 46 098€, respectively).</p> <p>Latvia further indicated that the bonus for achieving the en-route capacity target will be charged in 2018, while the bonus relating to the terminal capacity target will not be applied.</p> <p>Therefore, for the purposes of preparing the Cost-efficiency Monitoring Report 2016, the incentive amount related to the en-route capacity target is taken into account for the calculation of the ATSP gains/losses on the en-route activity (see Box 9), as well as for the calculation of 2016 Actual Unit Cost for users (see Box 8), while the incentive amount related to the terminal capacity target is not considered (see Boxes 8 and 9 for terminal ANS activity).</p>																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Norway

Version: 1.1

Date: 9 October 2017

NORWAY

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	56	B	B	C	C	B
Avinor	80	D	D	D	C	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	98%	99%
Runway Incursions (RIs)	93%	94%
ATM Specific Occurrences (ATM-S)		99%
Source of RAT data:	NCAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	8	1
Legal/Judiciary	5	2
Occurrence reporting and Investigation	2	0
TOTAL	15	3
Avinor	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	22	2

Observations

Two out of the four reviewed EoSM Components/areas of the State meet the 2019 EoSM target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 2 are below Level C.

NORWAY

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Norway has identified four airports as subject to RP2 monitoring. Currently all of these airports have established the airport data flow but key information for the calculation of the additional taxi-out times is still missing, except for Oslo airport that has finished the full implementation of the requirements and where the monitoring will be performed as of 2017.

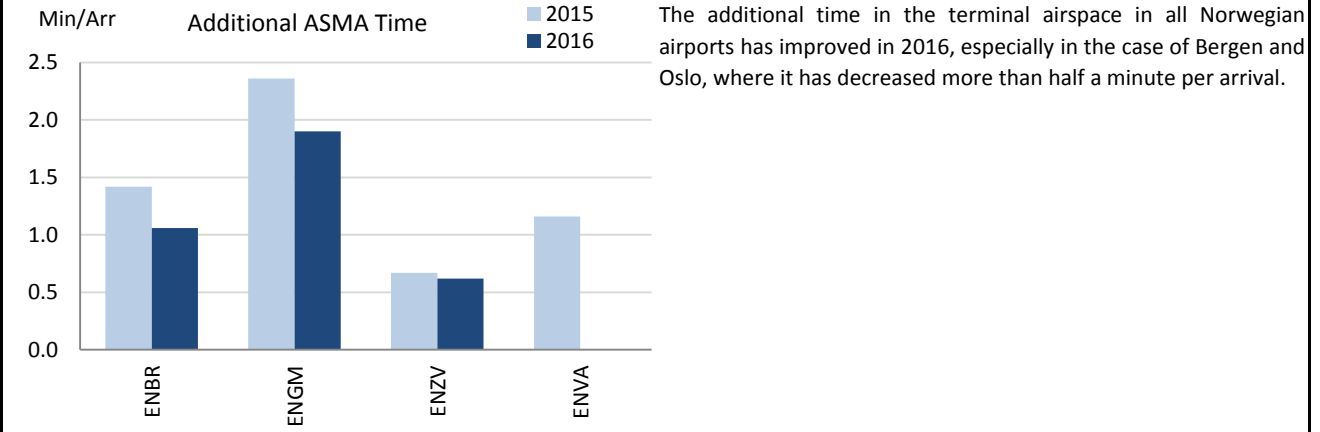
Norway should empower the respective airport reporting entity to address these remaining data issues.

In terms of ASMA, Norwegian airports have improved their performance showing now values commensurate with their traffic levels.

2. Additional Taxi-Out Time

Avinor Flysikring AS, the service provider in Norway, has not been able to deliver the data required for the calculation of the additional taxi-out times in any of the Norwegian airports subject to RP2 monitoring. Norwegian NSA explains that their ATM system is not ready to deliver these data automatically in 2016 and an alternate solution is being considered, but need to take into account the additional cost required. Only ENGM has started reporting on additional taxi-out time as of 2017 (established A-CDM).

3. Additional ASMA Time



4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bergen	ENBR	n/a	n/a				1.42	1.06			
Oslo/ Gardermoen	ENGM	n/a	n/a				2.36	1.90			
Stavanger	ENZV	n/a	n/a				0.67	0.62			
Trondheim	ENVA	n/a	n/a				1.16	n/a			

NORWAY

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.08	0.08	0.08	0.08	0.08	
Deadband +/-	0.03 - 0.13		0.03 - 0.14			
Actual performance	0.05	0.11				

National capacity incentive scheme

Norway applied a national incentive scheme based on the following criteria for the period 2015 – 2016:

En route ATFM delay 2015 - 2016:

Over/under-achievement (Percentage) Aggregated Penalties/Bonuses (Percentage)

0,00 min / flt or better Bonus: 1 % of the revenues from air navigation services in year n

0,01 min / flt Bonus: 0,5 % of the revenues from air navigation services in year n

0,02 min / flt Bonus: 0,2% of the revenues from air navigation services in year n

Dead band 0,05 min / flt – 0,13 min / flt

0,14 min / flt Penalty: 0,2 % of the revenues from air navigation services in year n

0,15 min / flt Penalty: 0,5 % of the revenues from air navigation services in year n

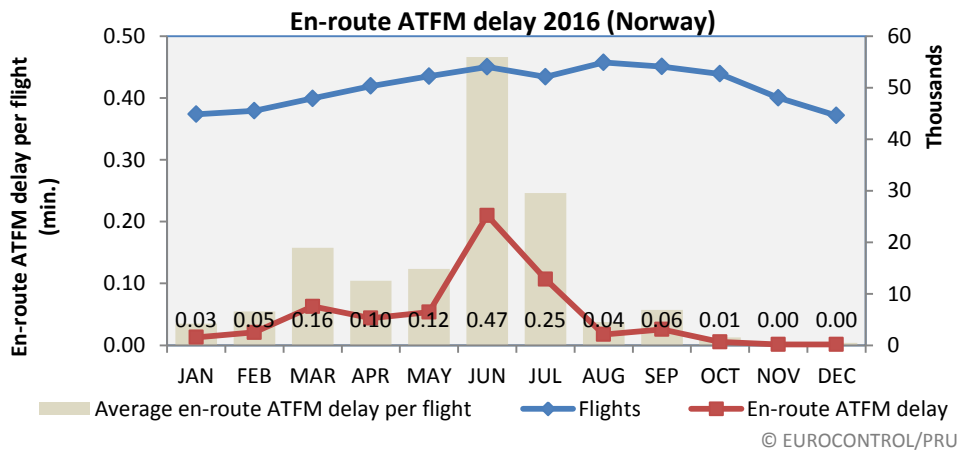
0,16 min / flt or worse Penalty: 1% of the revenues from air navigation services in year n

The actual en route capacity performance of 0.11 minutes per flight in 2016 falls within the dead-band and results in the ANSP Avinor receiving neither a bonus nor a penalty for 2016.

Compliance issues relating to national capacity incentive scheme

The PRB noted that the incentive schemes are not linked to FAB performance.

Observations regarding national capacity performance



En-route ATFM delay per flight (Norway)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.00	0.00	0.00	0.00	0.28	0.04	0.03	0.05	0.11

It is noted that Norway did not achieve its national target for en route capacity during 2016. It is noted that Norway has not provided any details of corrective measures addressing en route capacity in the NEFAB monitoring report. It is noted that even though the majority of delays at Oslo ACC were attributed to ATC capacity, further analysis of these regulations shows significant periods of AFTM regulation at lower levels than declared capacity for individual sectors and an inability to open the published maximum number of sectors leading to delays being assigned to collapsed sectors- phenomena indicating that the capacity constraints were something other than ATC capacity. It is noted that the Network Manager does not expect any capacity problems in Norway for the remainder of RP2.

Planning and Effective Use of CDRs
Norway did not provide any data. There are no CDRs in Norway.
Observations on Planning and effective Use of CDRs
The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.
Effective booking procedures
The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 54%. No information was provided regarding the allocation of airspace at H-3, so it is impossible to determine how much restricted or segregated airspace, that was surplus to requirements, was released for GAT use Procedure 3 is not applicable within the State.
Observations on Effective booking procedures
No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

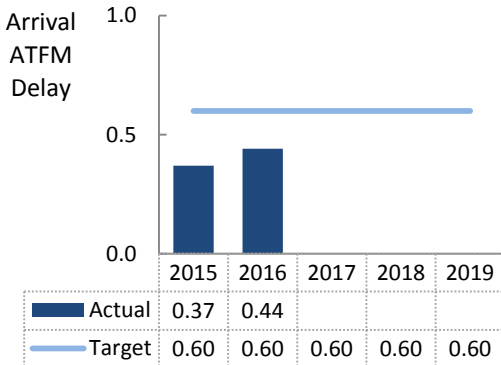
NORWAY

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Norway identifies 4 airports as subject to RP2 monitoring. A national target on arrival ATFM delay has been established and is fully met. Excellent adherence to ATFM slots is observed for these Norwegian airports and the level of pre-departure delay is negligible.

2. Arrival ATFM Delay



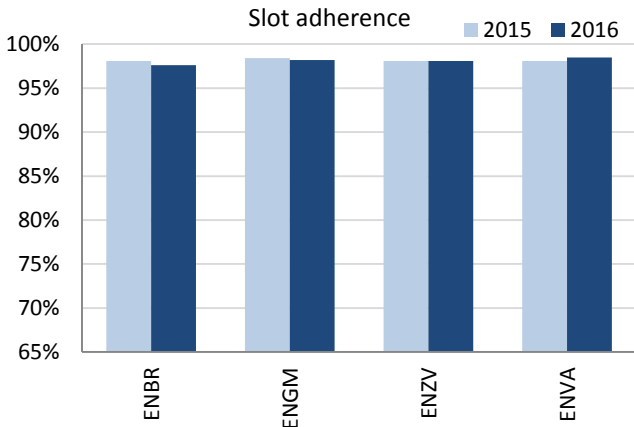
The national average for arrival ATFM delay in Norway has increased in 2016 resulting in 0.44 min/arr., the main contributor being Oslo Gardermoen (ENGM). There is a high share of delay attributed to weather reasons. Nonetheless there are also reported regulations due to ATC capacity and ATC staffing at both ENGM (July) and ENBR (September).

3. Arrival ATFM Delay – National Target and Incentive Scheme

The NEFAB performance plan sets a national target on arrival ATFM delay that is consistent with the historical performance and forms a lower bound with respect to the years previous to RP2. No further breakdown of the target per airport is made inhibiting to identify the contribution of the individual airport.

The performance plan presents an incentive scheme for the national targets on arrival ATFM delay for Norway. The incentive scheme pads the target with a deadband of 0.3 minutes per arrival. The achieved performance falls within the deadband and therefore no bonuses will be granted.

4. ATFM Slot Adherence



The adherence to ATFM slots at the 4 Norwegian airports ranges in the group of best-in-class performers across Europe, with actual values well above the 95% threshold.

5. Pre-departure Delay

The high quality of the delay reporting by the Norwegian airports under RP2 monitoring allows for the computation of the pre-departure delay indicator for all 4 airports during 2015 and 2016. The level of accrued delay is zero or negligible at Bergen, Stavanger and Trondheim, while Oslo shows a reasonably low share commensurate with the level of traffic.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Bergen	ENBR	0.11	0.09				98.1%	97.6%				0.01	0.01			
Oslo/ Gardermoen	ENGM	0.67	0.79				98.4%	98.2%				0.06	0.08			
Stavanger	ENZV	0.02	0.00				98.1%	98.1%				0.01	0.01			
Trondheim	ENVA	0.00	0.00				98.1%	98.5%				0.00	0.00			

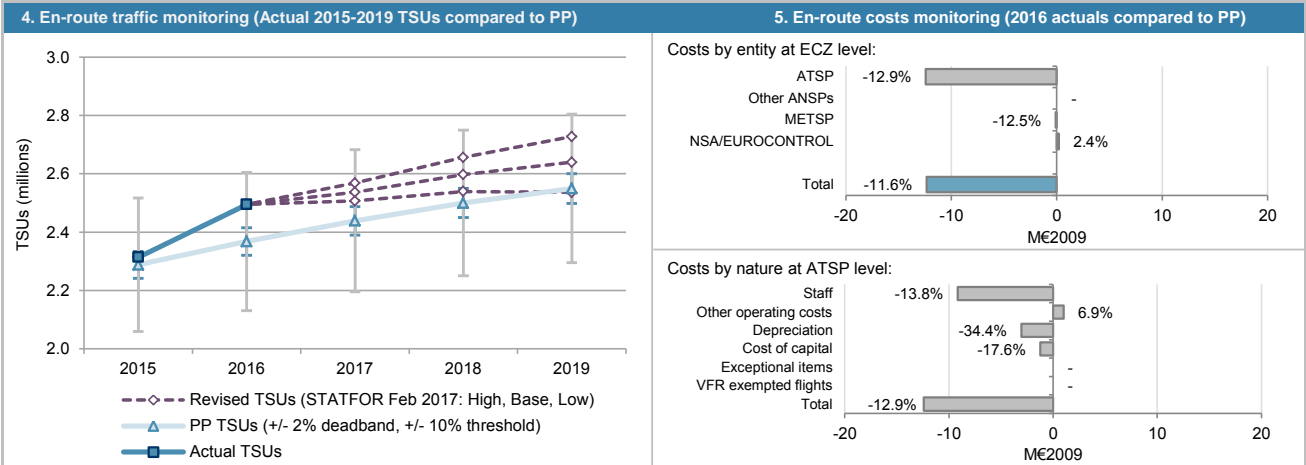
NORWAY: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services																								
<ul style="list-style-type: none"> Norway ECZ represents 1.7% of the SES en-route ANS determined costs in 2016 ATSP: Avinor FAB: NEFAB National currency: NOK Exchange rate 2009: 1 EUR = 8.72807 NOK 																								
2. En-route DUC monitoring at Charging Zone level																								
Norway: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)	2015D	2016D	2017D	2018D	2019D																			
En-route costs (nominal NOK)	1 006 927 248	1 032 667 449	1 051 204 724	1 064 624 439	1 073 048 403																			
Inflation %	1.6%	1.7%	2.1%	2.5%	2.5%																			
Inflation index (100 in 2009)	109.5	111.4	113.7	116.6	119.5																			
Real en-route costs (NOK2009)	919 164 836	926 904 186	924 136 061	913 105 964	897 883 922																			
Total en-route Service Units	2 287 878	2 367 954	2 438 992	2 499 967	2 549 966																			
Real en-route unit cost per Service Unit (NOK2009)	401.75	391.44	378.90	365.25	352.12																			
Real en-route unit cost per Service Unit (EUR2009)	46.03	44.85	43.41	41.85	40.34																			
Norway: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A																			
En-route costs (nominal NOK)	968 642 559	932 421 601																						
Inflation %	2.0%	3.9%																						
Inflation index (100 in 2009)	109.5	113.8																						
Real en-route costs (NOK2009)	884 206 780	819 194 585																						
Total en-route Service Units	2 313 891	2 495 164																						
Real en-route unit cost per Service Unit (NOK2009)	382.13	328.31																						
Real en-route unit cost per Service Unit (EUR2009)	43.78	37.62																						
Difference between Actuals and Planned	2015	2016	2017	2018	2019																			
En-route costs (nominal NOK)	in value -38 284 689	in value -100 245 848																						
	in % -3.8%	in % -9.7%																						
Inflation %	in p.p. 0.4 p.p.	in p.p. 2.2 p.p.																						
Inflation index (100 in 2009)	in p.p. 0.0 p.p.	in p.p. 2.4 p.p.																						
Real en-route costs (NOK2009)	in value -34 958 056	in value -107 709 601																						
	in % -3.8%	in % -11.6%																						
Total en-route Service Units	in value 26 013	in value 127 210																						
	in % 1.1%	in % 5.4%																						
Real en-route unit cost per Service Unit (NOK2009)	in value -19.62	in value -63.12																						
	in % -4.9%	in % -16.1%																						
Real en-route unit cost per Service Unit (EUR2009)	in value -2.25	in value -7.23																						
	in % -4.9%	in % -16.1%																						
3. Focus on en-route at State/Charging Zone level																								
<p>En-route unit cost In 2016, the actual en-route unit cost in real terms (37.62 €2009) is -16.1% lower than planned (44.85 €2009). This difference results from the combination of lower than planned en-route costs in real terms (-11.6%, or -12.3 M€2009) and higher than planned TSUs (+5.4%).</p> <p>En-route service units The difference between actual and forecast TSUs (+5.4%) is outside the ±2% dead band but within the ±10% boundaries of the alert threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of en-route revenues is therefore shared between the airspace users and the ATSP, the latter retaining an amount of +2.9 M€2009. Considering the STATFOR February 2017 traffic forecasts, actual TSUs are likely to remain higher than planned under all forecast scenarios for the rest of RP2. It is noteworthy that the TSU forecast underpinning the RP2 en-route DUC targets for Norway was higher than the STATFOR TSUs forecast base case scenario (February 2014).</p> <p>En-route costs The actual en-route costs in real terms are -11.6% lower than planned, but only -9.7% lower than planned in nominal terms as the actual inflation index for 2016 is +2.4 p.p. higher than planned.</p> <p>The lower than planned en-route costs in real terms are essentially driven by lower actual costs for the ATSP (-12.9%, or -12.4 M€2009). The MET service provider actual costs are also lower than planned (-12.5%, or -0.1 M€2009), while NSA/EUROCONTROL costs are slightly higher than planned (+2.4%, or +0.2 M€2009). A detailed analysis of the ATSP (AVINOR) en-route costs is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of +0.4 M€2009 relating to higher than planned EUROCONTROL costs (and linked to the difference in exchange rates). These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>																								
		<table border="1"> <caption>Difference between actual and determined en-route costs (real terms)</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>-3.8%</td> </tr> <tr> <td>2016</td> <td>-11.6%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	-3.8%	2016	-11.6%												
Year	Difference (%)																							
2015	-3.8%																							
2016	-11.6%																							
		<table border="1"> <caption>Difference between actual and planned total service units</caption> <thead> <tr> <th>Year</th> <th>Difference (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>1.1%</td> </tr> <tr> <td>2016</td> <td>5.4%</td> </tr> </tbody> </table>					Year	Difference (%)	2015	1.1%	2016	5.4%												
Year	Difference (%)																							
2015	1.1%																							
2016	5.4%																							
		<table border="1"> <caption>En-route DUC (PP, 2015-2019) and En-route unit costs (actual)</caption> <thead> <tr> <th>Year</th> <th>En-route DUC (PP, 2015-2019) (EUR2009)</th> <th>En-route unit costs (actual) (EUR2009)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>46.03</td> <td>43.78</td> </tr> <tr> <td>2016</td> <td>44.85</td> <td>37.62</td> </tr> <tr> <td>2017</td> <td>43.41</td> <td>-</td> </tr> <tr> <td>2018</td> <td>41.85</td> <td>-</td> </tr> <tr> <td>2019</td> <td>40.34</td> <td>-</td> </tr> </tbody> </table>					Year	En-route DUC (PP, 2015-2019) (EUR2009)	En-route unit costs (actual) (EUR2009)	2015	46.03	43.78	2016	44.85	37.62	2017	43.41	-	2018	41.85	-	2019	40.34	-
Year	En-route DUC (PP, 2015-2019) (EUR2009)	En-route unit costs (actual) (EUR2009)																						
2015	46.03	43.78																						
2016	44.85	37.62																						
2017	43.41	-																						
2018	41.85	-																						
2019	40.34	-																						

NORWAY: En-route charging zone

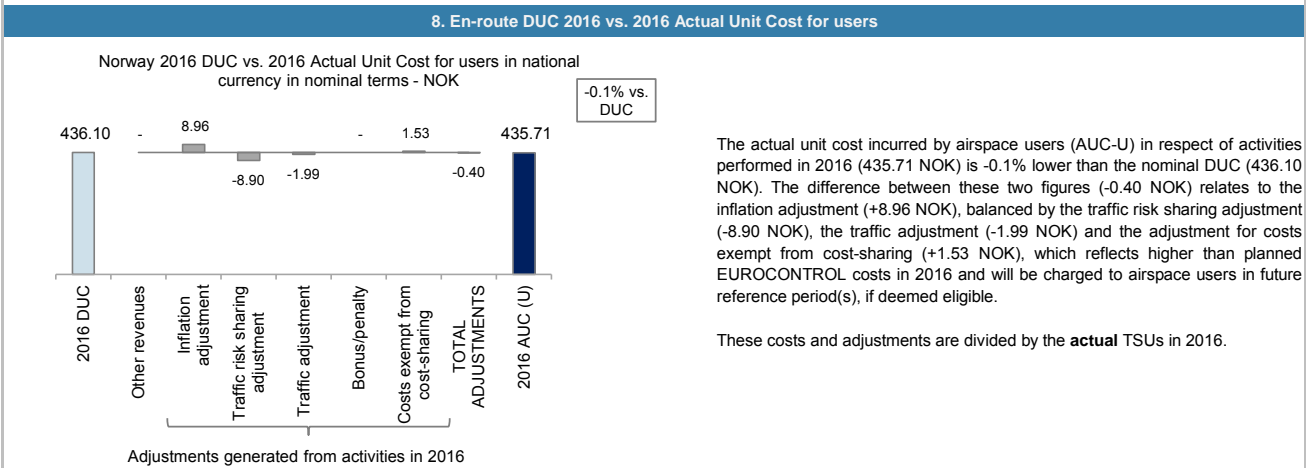
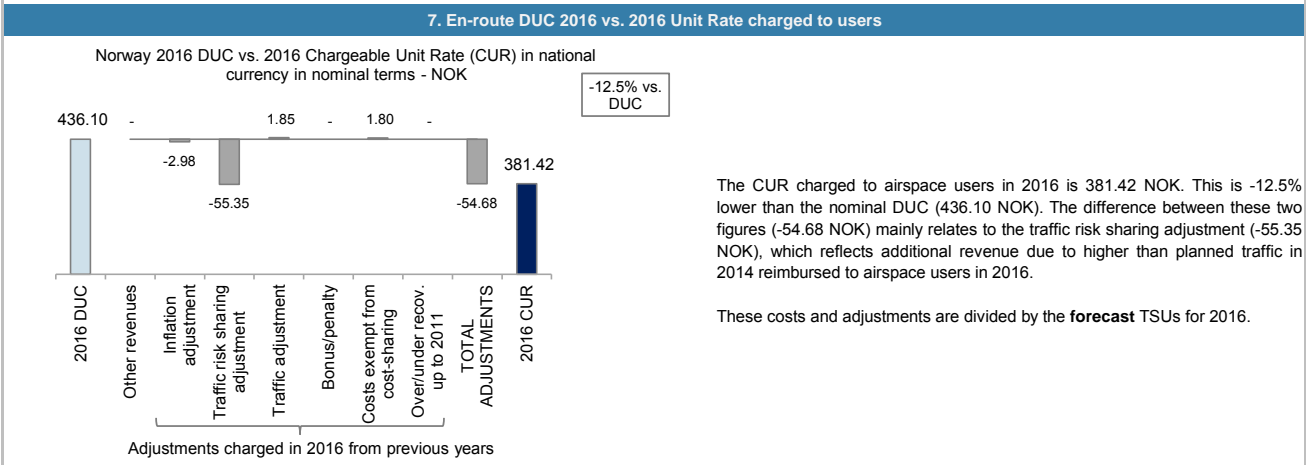
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	721	384			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	721	384			
Total costs exempt from cost sharing		721	384			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



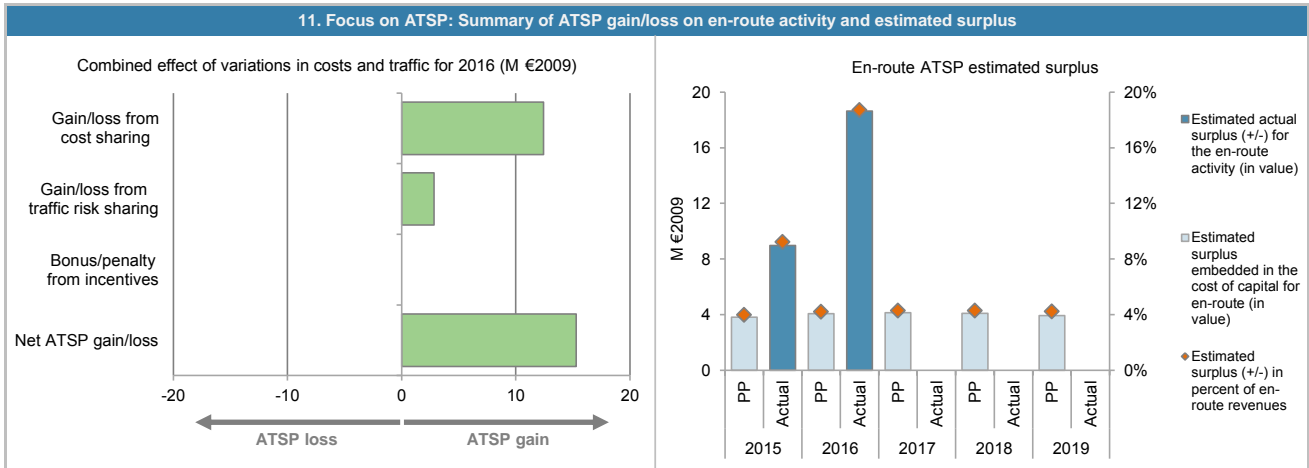
NORWAY: En-route ATSP (Avinor)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	96 046	96 703			
Actual costs for the ATSP	91 436	84 272			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	4 611	12 432			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	4 611	12 432			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.1%	5.4%			
Determined costs for the ATSP (PP) - based on actual inflation	96 045	94 655			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 092	2 851			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	5 703	15 282			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	87 373	92 744	94 221	93 175	89 787
Estimated proportion of financing through equity (in %)	40.2%	40.2%	40.2%	40.2%	40.2%
Estimated proportion of financing through equity (in value)	35 139	37 299	37 893	37 473	36 110
Estimated proportion of financing through debt (in %)	59.8%	59.8%	59.8%	59.8%	59.8%
Estimated proportion of financing through debt (in value)	52 234	55 445	56 327	55 702	53 677
Cost of capital pre-tax (in value)	6 640	7 049	7 161	7 081	6 824
Average interest on debt (in %)	5.4%	5.4%	5.4%	5.4%	5.4%
Interest on debt (in value)	2 810	2 983	3 030	2 997	2 888
Determined RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	3 830	4 066	4 130	4 085	3 936
Overall estimated surplus (+/-) for the en-route activity	3 830	4 066	4 130	4 085	3 936
Revenue/costs for the en-route activity	96 046	96 703	96 257	94 931	93 126
Estimated surplus (+/-) in percent of en-route revenues	4.0%	4.2%	4.3%	4.3%	4.2%
Estimated ex-ante RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	74 631	76 451			
Estimated proportion of financing through equity (in %)	40.2%	40.2%			
Estimated proportion of financing through equity (in value)	30 015	30 746			
Estimated proportion of financing through debt (in %)	59.8%	59.8%			
Estimated proportion of financing through debt (in value)	44 617	45 704			
Cost of capital pre-tax (in value)	5 672	5 810			
Average interest on debt (in %)	5.4%	5.4%			
Interest on debt (in value)	2 400	2 459			
Determined RoE pre-tax rate (in %)	10.9%	10.9%			
Estimated surplus embedded in the cost of capital for en-route (in value)	3 272	3 351			
Net ATSP gain(+)/loss(-) on en-route activity	5 703	15 282			
Overall estimated surplus (+/-) for the en-route activity	8 974	18 634			
Revenue/costs for the en-route activity	97 138	99 554			
Estimated surplus (+/-) in percent of en-route revenues	9.2%	18.7%			
Estimated ex-post RoE pre-tax rate (in %)	29.9%	60.6%			

NORWAY: En-route ATSP (Avinor)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 AVINOR en-route costs vs. PP

In 2016, AVINOR actual en-route costs, in real terms, are -12.9% (-12.4 M€2009) lower than planned. According to the June 2017 reporting tables, this results from the combination of:

- Lower than planned staff costs (-13.8%, or -9.2 M€2009), mainly due to "the continuous focus and thorough follow-up on cost efficiency initiatives both in operations and in administration. Furthermore, pension cost in 2016A is lower than planned due to changes in external factors such as interest rates and life expectancy." However, it is noted that the 2016 NSA Report on costs exempt from cost-sharing does not include an item related to pension costs.
- Higher than planned other operating costs (+6.9%, or +1.0 M€2009), which seems to be driven mainly by the new pricing model implemented with effect from 2015.
- Lower than planned depreciation costs (-34.4%, or -3.0 M€2009), mainly due to "a capex underspending and a later date of capitalisation than previously expected."
- Lower than planned cost of capital (-17.6%, or -1.2 M€2009), due to significantly lower than planned CAPEX (see above).

AVINOR net gain/loss on en-route activity in 2016

As shown in box 9, AVINOR generated a net gain of +15.3 M€2009 on the 2016 en-route activity. This is a combination of two elements:

- a gain of +12.4 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +2.9 M€2009 arising from the traffic risk-sharing mechanism.

No bonuses or penalties relating to the incentives on en-route capacity were reported since actual performance in 2016 was within the dead band set in the RP2 PP.

AVINOR 2016 overall estimated surplus for the en-route activity

Ex-post, the 2016 overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+15.3 M€2009) and the surplus embedded in the actual cost of capital (+3.4 M€2009) amounts to +18.6 M€2009 (18.7% of the 2016 en-route revenues). The resulting 2016 ex-post rate of return on equity is 60.6%, which is significantly higher than the 10.9% planned for 2016.

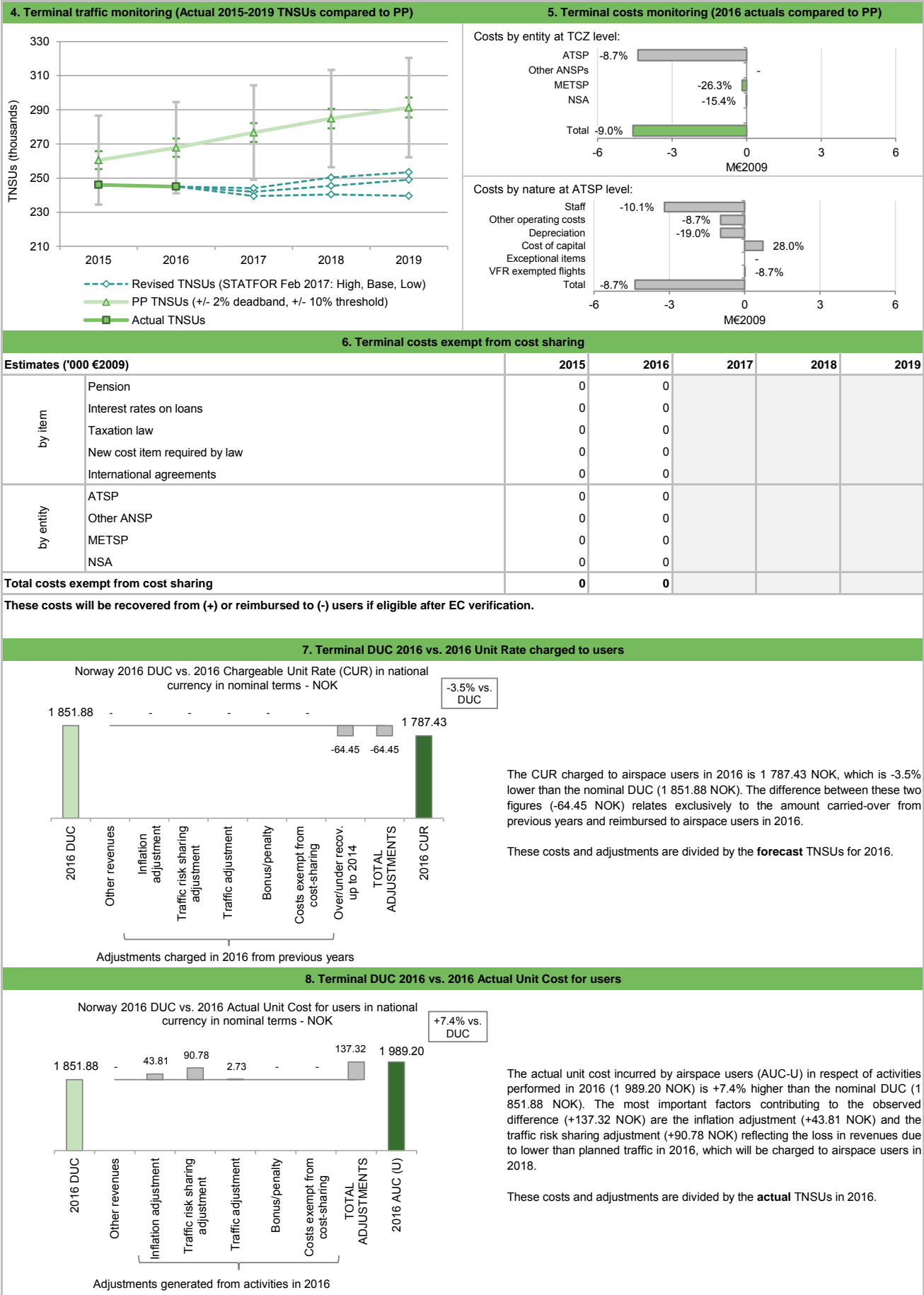
NORWAY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Norway TCZ represents 4.6% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	Avinor	· Airports with fewer than 70,000 IFRs ATMs:		1	
· National currency:	NOK	· Airports with between 70,000 and 225,000 IFRs ATMs:		2	
· Number of airports in charging zone in 2016:	4,	of which:		· Airports with more than 225,000 IFRs ATMs: 1	
2. Terminal DUC monitoring at Charging Zone level					
Norway: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal NOK)	498 031 263	495 968 632	500 784 828	505 570 149	510 317 178
Inflation %	1.6%	1.7%	2.1%	2.5%	2.5%
Inflation index (100 in 2009)	109.5	111.4	113.7	116.6	119.5
Real terminal costs (NOK2009)	454 623 534	445 172 743	440 250 417	433 616 871	427 012 974
Total terminal Service Units	260 503	267 818	276 677	284 877	291 330
Real terminal unit cost per Service Unit (NOK2009)	1 745.18	1 662.22	1 591.21	1 522.12	1 465.74
Real terminal unit cost per Service Unit (EUR2009)	199.95	190.45	182.31	174.39	167.93
Norway: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal NOK)	454 600 144	461 305 825			
Inflation %	2.0%	3.9%			
Inflation index (100 in 2009)	109.5	113.8			
Real terminal costs (NOK2009)	414 973 022	405 287 944			
Total terminal Service Units	246 093	245 027			
Real terminal unit cost per Service Unit (NOK2009)	1 686.24	1 654.05			
Real terminal unit cost per Service Unit (EUR2009)	193.20	189.51			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal NOK)	in value -43 431 119	in value -34 662 807			
	in % -8.7%	in % -7.0%			
Inflation %	in p.p. 0.4 p.p.	in p.p. 2.2 p.p.			
Inflation index (100 in 2009)	in p.p. 0.0 p.p.	in p.p. 2.4 p.p.			
Real terminal costs (NOK2009)	in value -39 650 512	in value -39 884 799			
	in % -8.7%	in % -9.0%			
Total terminal Service Units	in value -14 410	in value -22 791			
	in % -5.5%	in % -8.5%			
Real terminal unit cost per Service Unit (NOK2009)	in value -58.93	in value -8.16			
	in % -3.4%	in % -0.5%			
Real terminal unit cost per Service Unit (EUR2009)	in value -6.75	in value -0.94			
	in % -3.4%	in % -0.5%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Norway Terminal Charging Zone comprising 4 airports: Bergen/Flesland, Oslo/Gardermoen, Stavanger/Sola and Trondheim/Vaernes. Norway decided to apply the traffic risk sharing to the Norway TCZ.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (189.51 €2009) is -0.5% lower than planned (190.45 €2009). This difference results from the combination of lower than planned TNSUs (-8.5%) and lower than planned terminal costs in real terms (-9.0%, or -4.6 M€2009).</p> <p>Terminal service units Traffic risk sharing applies in Norway TCZ. The difference between actual and planned TNSUs (-8.5%) falls outside the ±2% dead band, but is within the ±10% boundaries of the alert threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ATSP and the airspace users, with the loss borne by the ATSP amounting to -1.9 M€2009. Considering the STATFOR February 2017 traffic forecasts, it appears that the TNSUs are likely to remain significantly lower than planned throughout RP2. Under all forecast scenarios, TNSUs would reach the -10% alert threshold foreseen in the traffic risk-sharing mechanism already in 2017.</p> <p>Terminal costs In real terms, actual terminal costs are -9.0% (or -4.6 M€2009) lower than planned, and -7.0% in nominal terms as the 2016 actual inflation index is +2.4 p.p. above plans. The lower than planned terminal costs in real terms are mainly driven by the lower actual costs for AVINOR (-8.7%, or -4.4 M€2009). The costs for the MET service provider (-26.3%, or -0.2 M€ 2009) and NSA (-15.4%, or -0.02 M€ 2009) are also lower than planned. A detailed analysis of AVINOR terminal costs is provided in box 12.</p> <p>There are no costs exempt from cost-sharing reported for Norway TCZ.</p>					

NORWAY: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016



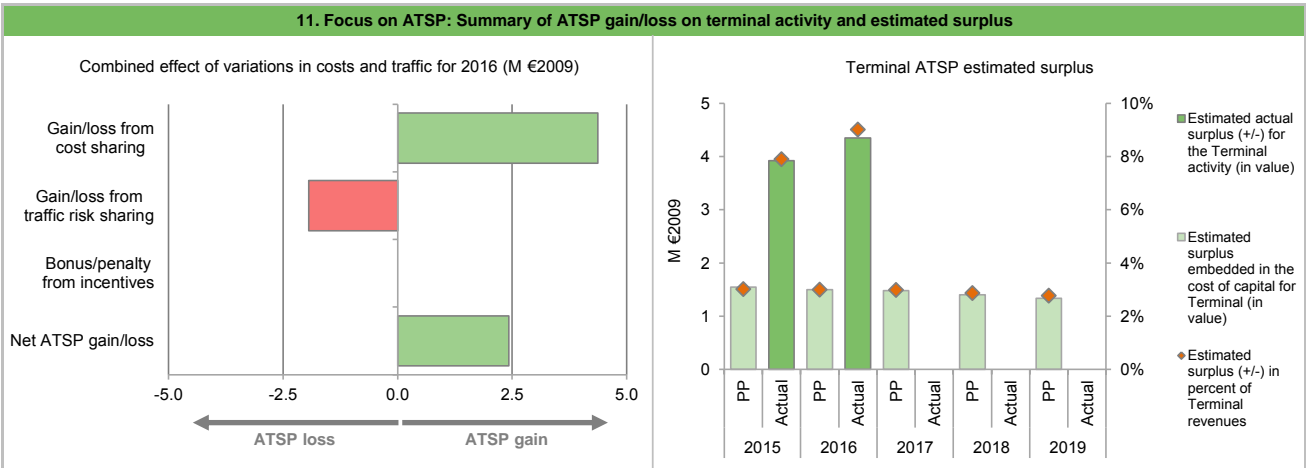
NORWAY: Terminal ATSP (Avinor)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	51 271	50 195			
Actual costs for the ATSP	46 672	45 826			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	4 599	4 370			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	4 599	4 370			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-5.5%	-8.5%			
Determined costs for the ATSP (PP) - based on actual inflation	51 270	49 132			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-1 569	-1 942			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	3 031	2 428			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	35 326	34 239	33 818	31 947	30 459
Estimated proportion of financing through equity (in %)	40.2%	40.2%	40.2%	40.2%	40.2%
Estimated proportion of financing through equity (in value)	14 214	13 776	13 607	12 854	12 256
Estimated proportion of financing through debt (in %)	59.8%	59.8%	59.8%	59.8%	59.8%
Estimated proportion of financing through debt (in value)	21 112	20 463	20 211	19 093	18 204
Cost of capital pre-tax (in value)	2 685	2 602	2 570	2 428	2 315
Average interest on debt (in %)	5.4%	5.4%	5.4%	5.4%	5.4%
Interest on debt (in value)	1 136	1 101	1 087	1 027	979
Determined RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
Estimated surplus embedded in the cost of capital for terminal (in value)	1 549	1 501	1 483	1 401	1 336
Overall estimated surplus (+/-) for the terminal activity	1 549	1 501	1 483	1 401	1 336
Revenue/costs for the terminal activity	51 271	50 195	49 642	48 895	48 151
Estimated surplus (+/-) in percent of terminal revenues	3.0%	3.0%	3.0%	2.9%	2.8%
Estimated ex-ante RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	20 412	43 834			
Estimated proportion of financing through equity (in %)	40.2%	40.2%			
Estimated proportion of financing through equity (in value)	8 213	17 637			
Estimated proportion of financing through debt (in %)	59.8%	59.8%			
Estimated proportion of financing through debt (in value)	12 199	26 197			
Cost of capital pre-tax (in value)	1 551	3 331			
Average interest on debt (in %)	5.4%	5.4%			
Interest on debt (in value)	656	1 409			
Determined RoE pre-tax rate (in %)	10.9%	10.9%			
Estimated surplus embedded in the cost of capital for terminal (in value)	895	1 922			
Net ATSP gain(+)/loss(-) on terminal activity	3 031	2 428			
Overall estimated surplus (+/-) for the terminal activity	3 926	4 350			
Revenue/costs for the terminal activity	49 702	48 253			
Estimated surplus (+/-) in percent of terminal revenues	7.9%	9.0%			
Estimated ex-post RoE pre-tax rate (in %)	47.8%	24.7%			

NORWAY: Terminal ATSP (Avinor)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 AVINOR terminal costs in NORWAY TCZ vs. PP

In 2016, AVINOR actual terminal costs, in real terms, are -8.7% (-4.4 M€2009) lower than planned. According to the June 2017 terminal ANS reporting tables, this is due to:

- Lower than planned staff costs (-10.1%, or -3.2 M€2009), due to *“the continuous focus and thorough follow-up on cost efficiency initiatives both in operations and in administration. Furthermore, pension cost in 2016A is lower than planned due to changes in external factors such as interest rates and life expectancy.”* However, it is noted that the 2016 NSA Report on costs exempt from cost-sharing does not include an item related to pension costs.
- Lower than planned operating costs (-8.7%, or -1.0 M€2009), mainly due to *“considerably less use of external consultants is the main reason for the reduction in operating cost, driven by the cost efficiency focus as described. [and] (...) travel cost are also reduced.”*
- Lower than planned depreciation costs (-19.0%, or -1.0 M€2009), mainly due to *“Temporary reduced depreciations at Oslo Airport in 2015 due to end of life at several assets.”*
- Higher than planned cost of capital (+28.0%, or +0.7 M€2009), due to a significantly higher than planned asset base (+28.0%) driven by *“New assets capitalized in 2016 in relations to the new terminal, and other projects. Avinor has done a thorough investigation of cost related to TNC. We find a significant under reporting of assets at Bergen, Stavanger and Trondheim Airport in 2015. Probably related to the change of ownership structure of TNC related equipment.”*

AVINOR 2016 net gain/loss on terminal activity in Norway’s TCZ

As shown in box 9, the terminal activity generated a net gain of +2.4 M€2009 in 2016. This is a combination of two elements:

- a gain of +4.4 M€2009 as a result of the cost-sharing mechanism; and,
- a loss of -1.9 M€2009 as a result of traffic risk-sharing mechanism.

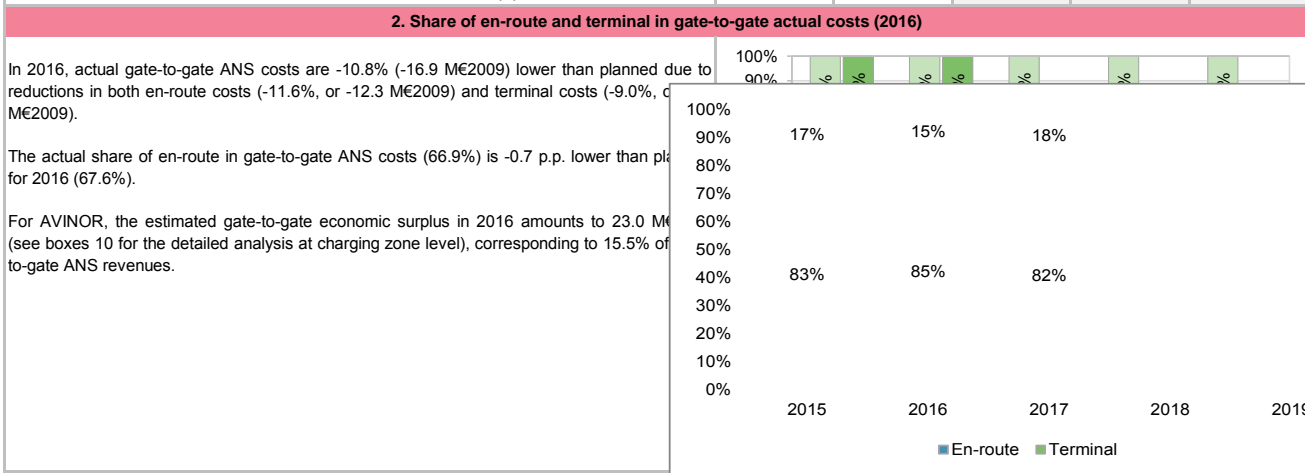
AVINOR 2016 overall estimated surplus for the terminal activity in NORWAY TCZ

Ex-post, the 2016 overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+2.4 M€2009) and the surplus embedded in the actual cost of capital (+1.9 M€2009) amounts to +4.3 M€2009 (9.0% of the 2016 terminal revenues). The resulting 2016 ex-post rate of return on equity is +24.7%, which is significantly higher than the 10.9% planned.

NORWAY: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Norway: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	105 311 350	106 198 070	105 880 918	104 617 168	102 873 135
Real terminal costs (EUR2009)	52 087 522	51 004 717	50 440 752	49 680 728	48 924 101
Real gate-to-gate costs (EUR2009)	157 398 872	157 202 787	156 321 670	154 297 896	151 797 235
En-route share (%)	66.9%	67.6%	67.7%	67.8%	67.8%
Norway: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	101 306 105	93 857 472			
Real terminal costs (EUR2009)	47 544 649	46 435 002			
Real gate-to-gate costs (EUR2009)	148 850 754	140 292 473			
En-route share (%)	68.1%	66.9%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-8 548 118	-16 910 313			
in %	-5.4%	-10.8%			
En-route share					
in p.p.	1.2%	-0.7%			



3. Technical notes on en-route and terminal information reported by Norway

PRB Annual monitoring report 2016

Volume 2 – Local Overview

SOUTH WEST FAB

Version: 1.1

Date: 9 October 2017

SW FAB

Monitoring of SAFETY for 2016

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	A	A			
	ANSPs	For Safety Culture MO	C	C			
	ANSPs	For all other MOs	D	D			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	100%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		39%	54%			
	Runway Incursions (RIs)		7%	26%			
	ATM Specific Occurences (ATM-S)		27%	23%			

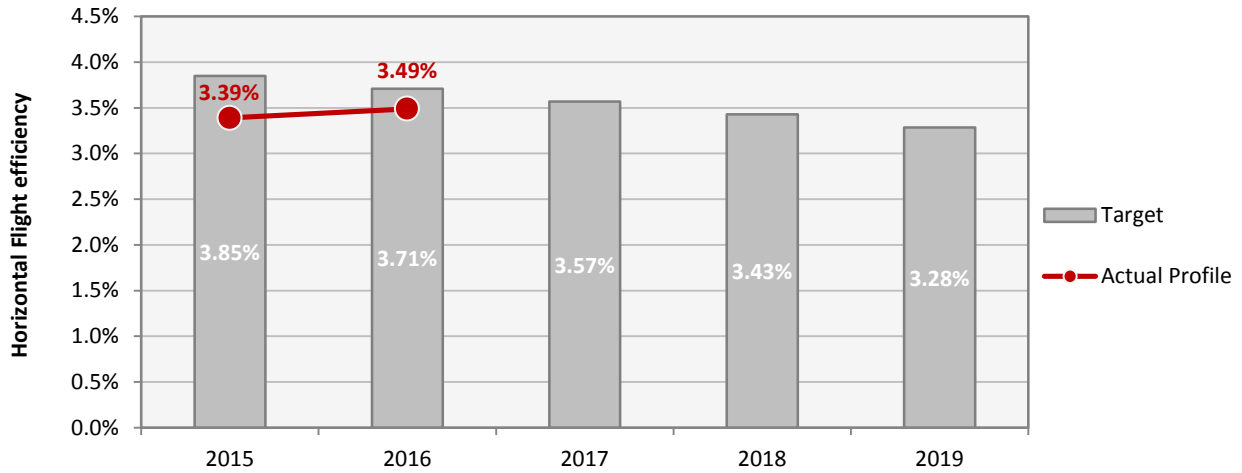
Observations

The lowest answer in all EoS Component/area of the States is Level "A" in the Safety Promotion component which is below the 2019 EoS target level. All other components are at level "B", below the 2019 EoS target.

SW FAB

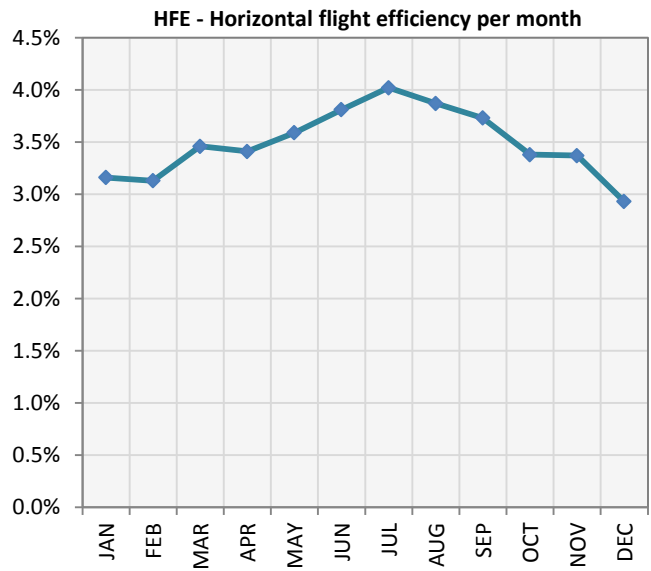
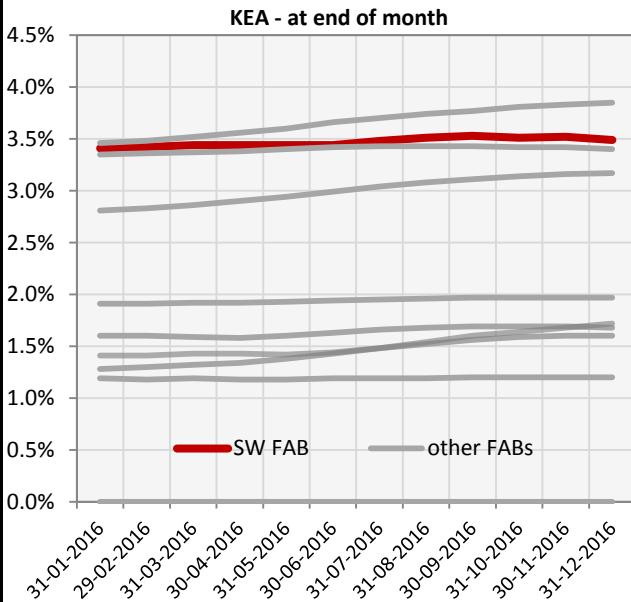
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	3.85%	3.71%	3.57%	3.43%	3.28%
Actual performance	3.39%	3.49%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	3.41%	3.42%	3.44%	3.44%	3.44%	3.44%	3.48%	3.51%	3.53%	3.51%	3.52%	3.49%
HFE	3.16%	3.13%	3.46%	3.41%	3.59%	3.81%	4.02%	3.87%	3.73%	3.38%	3.37%	2.93%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

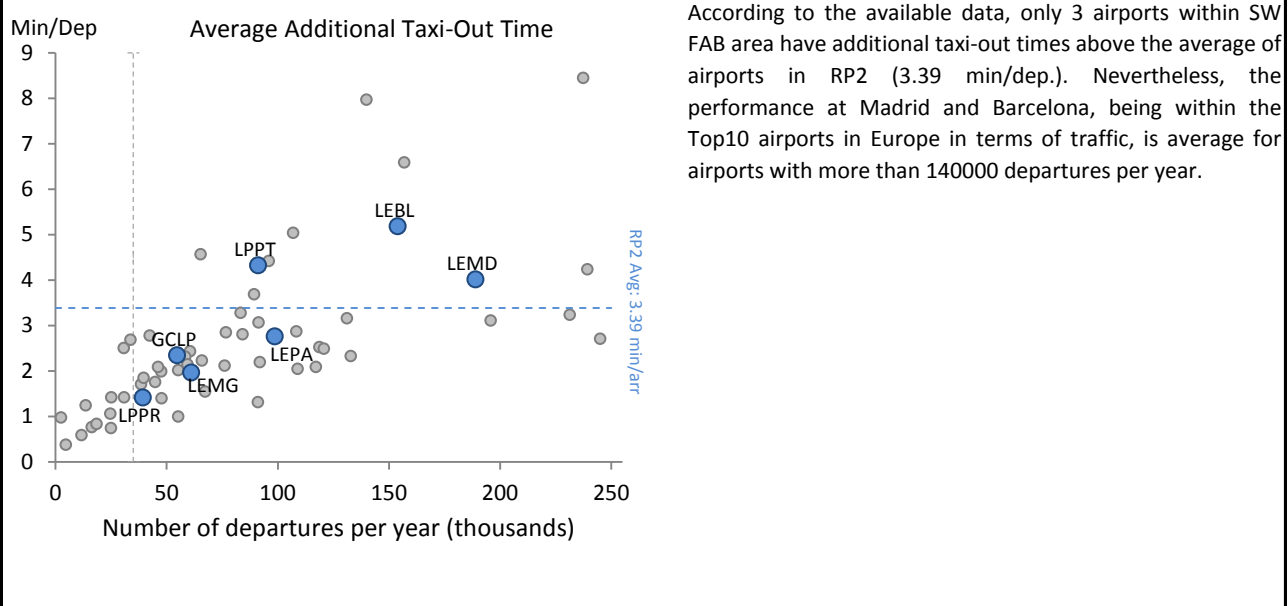
Observations

NM proposed measures: Cross border FRA projects implementation must be considered for the entire SW FAB, in line with the NSP and the PCP. Additionally, further improvements shall be considered for Canarias FIR. The interface between SW FAB, FABEC needs to be addressed with priority.

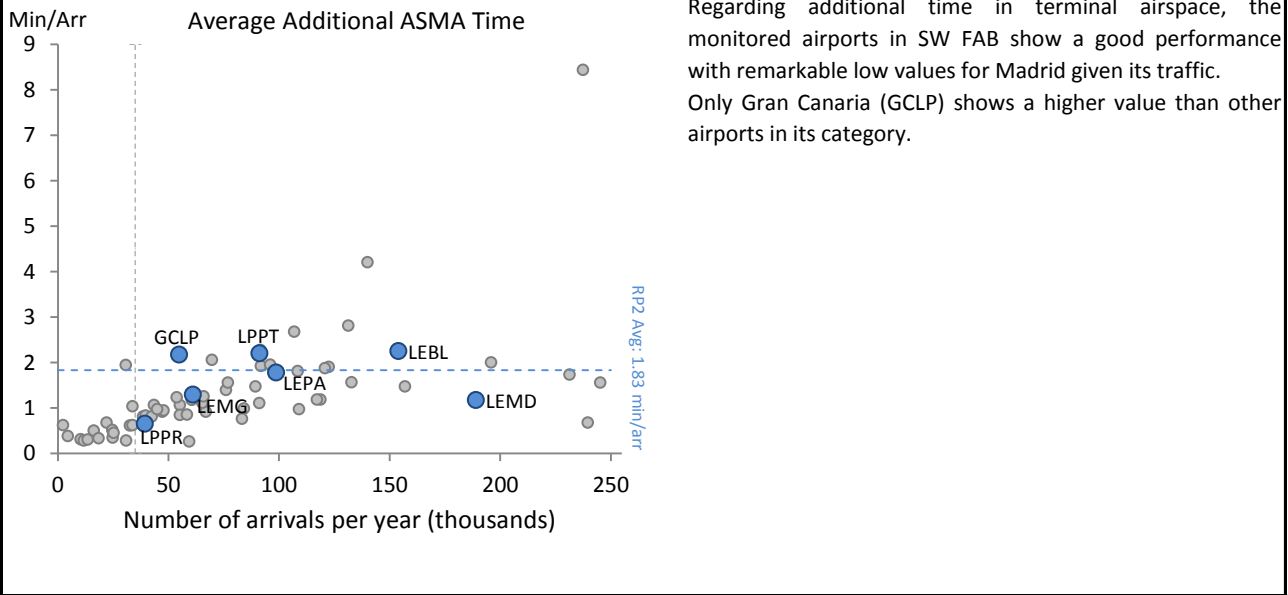
1. Overview

SW FAB states identify a total of 15 airports as subject to RP2 monitoring. However, only the busiest 7 have established the proper reporting through the airport data flow to allow such monitoring. Member States shall empower the respective airport reporting entity to establish the airport operator data flow and/or address the remaining data issues. Although there is in general an increase of the additional times for most of the airports in SW FAB, the performance is still commensurate with their levels of traffic.

2. Additional Taxi-Out Time



3. Additional ASMA Time



SW FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.30	0.31	0.31	0.30	0.30	The value of actual performance published here for 2016 includes the results of the Post operations performance adjustment process, as notified by the Network Manager.
FAB Target	0.30	0.31	0.31	0.30	0.30	
Actual performance	0.46	0.42				
SW FAB assessment of capacity performance						
<p>2016 was a big challenge for SW FAB as a consequence of the huge traffic growth accommodated. As referred by the NM, the highest increase in Europe in overall traffic is observed in Portugal and Canary Islands, due to the shift towards South-West axis.</p> <p>Capacity/delay performance was not achieved, but was better than expected considering the amount of traffic growth, as recognized by all the aeronautical community. At this respect, it is mentioned in the NM 2016 Annual Report:</p> <p>“...In the European Network good performance was seen in Cyprus, Greece, Portugal and Spain. ACCs in Portugal and Spain implemented the measures agreed with the NM in the NOP and managed delays despite very high traffic increase. The NM worked closely with NAV Portugal, ENAIRE Spain and DSNA France to mitigate the impact of the growth....”.</p> <p>The 17th of November 2016 it was celebrated the stakeholder consultation forum of the SW FAB in where all the stakeholders recognized the excellent work done by the SW FAB, in particular the excellent service provided by ENAIRE and NAV Portugal during the Summer 2016 in a scenario with a dramatic increase in traffic in the SW Axis.</p>						
Monitoring process for capacity performance						
<p>The en route delay indicator was monitored against the FAB level target during 2016 on a quarterly basis against an alert mechanism in the context of the RP2 SOWEPP Monitoring Process. Issues were identified after the summer season and there was little margin to correct the situation before the end of the year. The Monitoring Process is being streamlined to be more efficient.</p>						
Application of Corrective Measures for Capacity						
<p>As commented by the Network Manager, Portugal and Spain implemented the measures agreed with the NM in the NOP and managed delays despite very high traffic increase. The NM worked closely with NAV Portugal, ENAIRE Spain and DSNA France to mitigate the impact of the growth in the SW Axis.</p> <p>At the end of 2015, in the strategic phase, it was celebrated a meeting between SW FAB and the NM to prepare 2016 as part of the NOP CDM process. Excellent collaboration was achieved between SW FAB and the NM at the pre-tactical and tactical level, close to the day of operation, to better optimize traffic demand scenarios to improve performance.</p> <p>A revision of the Capacity Plan has been conducted in order to manage the planned demand in a way that reduces our delay figures. ENAIRE has put in place specific capacity plans for the 2017 summer season to tackle the situation and try to cope with the traffic increase and meet the targets. These specific measures include operational and procedural actions coordinated with the NM, and human resources management. Performance benefit is sought, with particular focus on ACC Barcelona.</p> <p>Despite the target was no met, the performance outcome in 2016 was better than the previous year.</p>						

Capacity Planning

Capacity planning was coordinated between SW FAB and the NM at the end of 2015, at the strategic phase, taking into consideration very low traffic growth scenarios presented by STATFOR.

STATFOR information was corrected in the first Edition of 2016 (February 2016). As a result, while the overall European traffic forecast has not significantly changed, a major change in the traffic flows could be noticed with significantly higher growth rates on the SW Axis, impacting mainly France, Spain and Portugal.

Excellent collaboration between the NM and the SW FAB permitted to overcome the little time to react to the new STATFOR figures for the SW Axis. This situation clearly demonstrates the importance of accurate traffic forecast scenarios which, unfortunately, did not happen in the SW Axis.

A Capacity Plan has been developed and agreed in conjunction with the Network Manager to minimize delays and comply with established RP2 Delay targets (Ref. European Network Operations Plan 2017-2019/21) taking into account that the main contributors to the Spanish ATFM en-route delays are the ACCs of Barcelona and Canarias.

The main elements of this Capacity Plan are:

- ALL ACCs: Update of Automated System; Optimisation of configurations and sector capacities; Progressive increase of controller staff (especially in the centres with greater needs).
- BARCELONA ACC: Interfaces with Bordeaux and Marseille. FUA improvements; Staff increase.
- CANARIAS ACC: Increased sectorisation; Redesign of the TMA.
- MADRID ACC: New sectorisation and interface with Bordeaux (BAMBI); Simultaneous independent approaches to Barajas.
- PALMA ACC: Improvements in the procedures of departures / arrivals in Ibiza and Palma airports; Redesign of TMA; A-CDM.
- SEVILLA ACC: Increase in sectorisation. Splitting of LECSSEV.

Assessment of capacity performance

It is noted that SW FAB failed to achieve their en route capacity target in 2016, following a similar result in 2015. It is noted that an 8% increase in traffic levels over 2015 was accompanied by a revised value of 0,42 minutes of average ATFM delay per flight (0,46 minutes per flight excluding the results of the Network Manager's Post operations performance attribution process). The increased efforts of the ANSPs to handle the rise in traffic are recognised. The inability of SW FAB ANSPs to open the maximum number of sectors during periods of peak traffic demand which leads to significant delays. is noted. It is noted that the Network Manager, based on the latest capacity plans, expects capacity shortfalls in SW FAB for the remainder of RP2 particularly at Barcelona and Lisboa ACC.

En route Capacity Incentive Scheme

SW FAB provided details of an en route capacity incentive scheme in their revised performance plan v2.0, dated July 2016. This incentive scheme was based on a FAB target of 0.31 minutes per flight with a dead-band between 0.54 - 0.16 minutes per flight. The incentive scheme was based on all causes of delays but there were caveats regarding 'unusually high' incidences of certain delays codes activating an exclusion system based on Article 15(g) of Regulation 391/2013.

Result of FAB Capacity Incentive Scheme

Since actual performance for 2016, 0,42 minutes per flight, fell into the dead-band of the incentive mechanism no penalty is incurred.

Compliance Issues Relating to FAB Capacity Incentive Scheme

The PRB raised several compliance issues with the SW FAB incentive scheme including:

- Incentive scheme does not encourage the entities to achieve a high level of performance;
- It does not apply Article 15(g) of the charging regulation in a consistent manner;
- There is no mention of a verifiable method of reconciling attributed delay classification to actual events which raises the possibility of errors or gaming.

The SWFAB monitoring report did not contain any information regarding addressing the listed compliance issues.

Update on Military dimension of the plan

Civil-Military coordination regarding Flexible Use of Airspace is on progress at strategic level established with a specific working group called UPEA (Permanent Air Space Unit) inside CIDEFO. At present meetings are in place in a weekly basis. Dissemination of progress on FUA to civil operators is considered an enabler to achieve Flight Plans using more efficient routes through the Civil Use of Release Airspace (CURA).

AMC has defined new FUA Restrictions in order to ease the management of segregated areas during military activity. This will enhance and facilitate a better flight planning to AOs. Appendix 7 in RAD will be updated accordingly.

AMC manual revision was completed on May the 1st, 2017.

In application of FUA concept, general criteria for reclassification of restricted/dangerous areas were defined by UPEA in November 2016.

Revision and amendment of AIP CDR publication was completed on July the 21st, 2016. Some improvements carried out are:

- To express them as VFR FLs or intermediate levels between IFR FLs;
- To adapt AIP CDR publication (CDR categorization) of ATS routes UL58, UM445, UM744, UN747, UN860, UT245, UT249, UT252 and UT312;
- To adapt the availability of M/UM192 BLN-BAZAS-AMR within Madrid UIR;
- To adapt the availability of UL150 CJN-ASTRO-LABRO within Madrid UIR/Barcelona UIR;
- To adapt CDR publication of any other routes affected by area restrictions.

Several meetings were held in order to implement new conditional routes, to revise restricted areas and to re-align ATS routes:

- LED123 and LED124 optimisation and UM744 conditional route availability improvement: was improved by managing CDR1/2route (WEF July 21st 2016).
- LED97 and LER63 optimisation and conditional routes: availability was improved by managing CDR1/2 routes (WEF July 21st 2016).
- New conditional route in upper airspace from MGA to ALM (Casablanca FIR), affected by LED169 (WEF July 21st 2016).
- LED169 optimisation and UM143, UM744, UN860, UL58, and UL195 conditional routes availability was improved by harmonising categorization of routes affected by LED169 (WEF July 21st 2016).
- U/T100 (military airway) connectivity with ATS network and LERT and LEMO procedures (Step 1): a set of intersections were published in order to connect T/UT100 with UL82, UN871, G5, UL27, UL150 and UL129 (WEF October 13th 2016).
- U/M176 conditional route availability improvement is completed (WEF July 21st 2016).

Observations on Military dimension of the plan

The information on the efforts of civil and military authorities in SW FAB to improve capacity for general air traffic through improved cooperation and coordination is appreciated.

Application of FUA

No new information was provided by SW FAB.

Observations of the Application of FUA

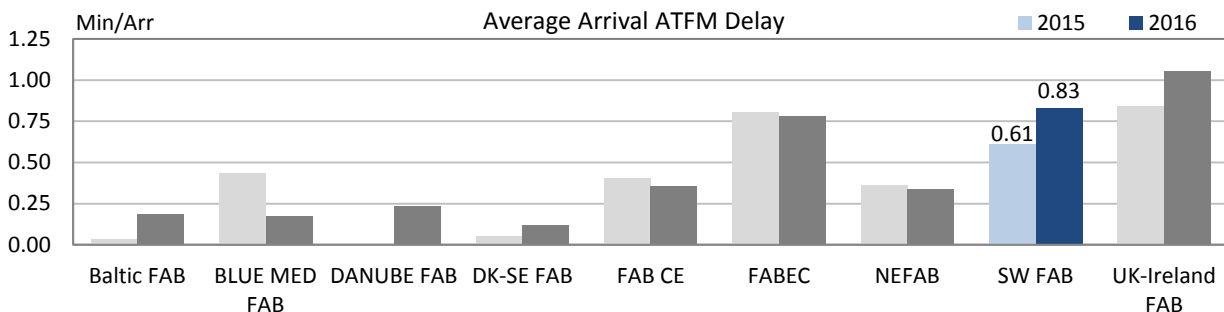
It is noted that SW FAB provides information on the application of FUA to EASA, but unfortunately EASA does not make this information available to the public, therefore stakeholders, are unable to ascertain the application of FUA in Member States. It is noted that SW FAB has not actually provided information on how SW FAB authorities determine if the optimum benefits for both civil and military airspace users have been provided.

1. Overview

In 2016, a significant deterioration of the aggregated arrival ATFM delay has been observed on SW FAB level (2015: 0.61 min/arr. vs 2016: 0.83 min/arr.) which ranges well above the European average of 0.67 min/arr.

Next to FABEC and UK-Ireland FAB, SW FAB performance influences the European average significantly. Efforts are required to reduce the high level of arrival ATFM delay.

2. Arrival ATFM Delay



The main drivers for the increase in the aggregated arrival ATFM delay are Barcelona (LEBL), Madrid (LEMD), Gran Canaria (GCLP), Porto (LPPR) and Lisbon (LPPT).

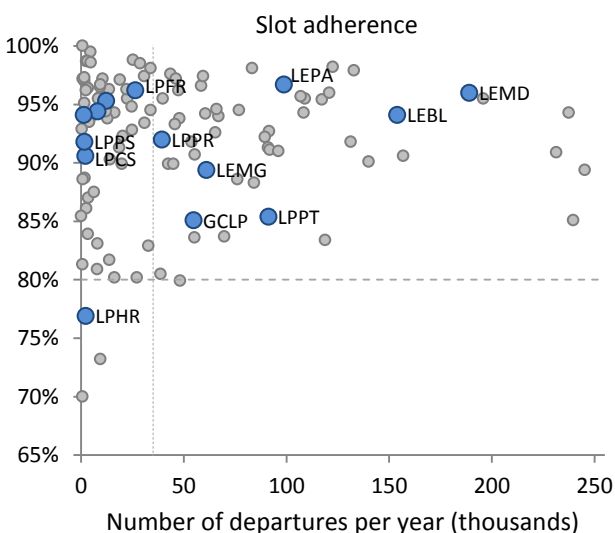
3. Arrival ATFM Delay – National Targets and Incentive Schemes

The SW FAB performance plan sets a national target on arrival ATFM delay with a breakdown per airport for each of the years of the reference period for Spain. For Portugal, the breakdown is provided for two airports while the other 7 airports are aggregated into a third summary value. The national targets set are consistent with the observed performance at the beginning of the reference period.

While in 2015 both Portugal and Spain met their national target, in 2016 the achieved ATFM delay per arrival exceeds the national target in both cases.

The SW FAB performance plan presents no incentive schemes for the national targets on arrival ATFM delay.

4. ATFM Slot Adherence



With the exception of Horta (LPHR), the adherence to ATFM slots at all airports in the SW FAB is above the 85%. A group of airports in SW FAB also show best-in class performance with adherences above 95%.

There are 2 airports, Lisbon (LPPT) and Gran Canaria (GCLP) where the performance is just above the critical threshold of 85%.

5. Pre-departure Delay

The Airport Operator Data Flow is implemented for the Spanish airports and allows for reporting on ATC Pre-departure delay. Nevertheless, further validation is needed due to the high share of unreported or unidentified delay. The implementation of Lisbon (LPPT) and Porto (LPPR) was finalized at the end of 2016 so the calculation of this indicator will only be possible as of 2017.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Portugal

Version: 1.1

Date: 9 October 2017

PORTUGAL

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	41	B	B	B	A	B
NAV Portugal	91	D	D	D	D	E

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	NAV-P	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	6	3
Legal/Judiciary	7	0
Occurrence reporting and Investigation	2	0
TOTAL	15	3
NAV Portugal	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	7	1
TOTAL	20	4

Observations
<p>None of the four reviewed EoSM Components/areas of the State meet the 2019 EoSM target level "C". After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>Out of 34 questions in Components 1-4 (not including Component - Safety Culture), 11 are below Level C.</p>

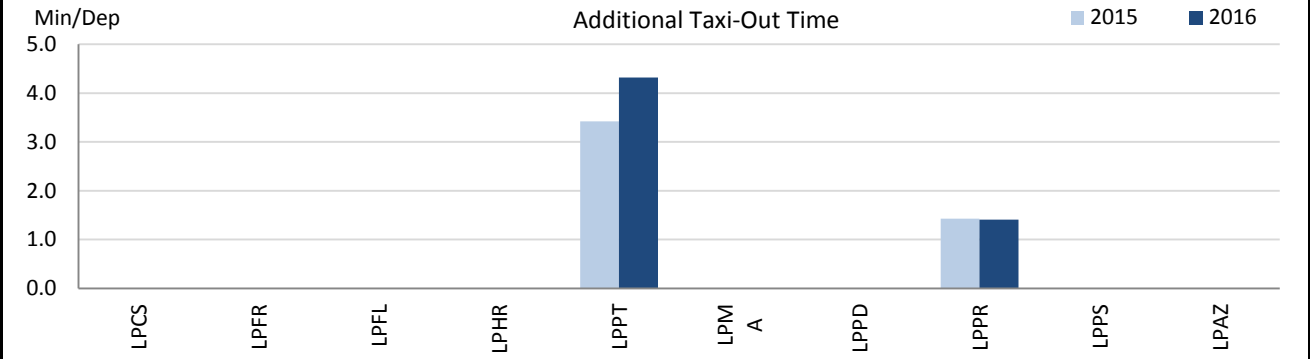
PORTUGAL

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

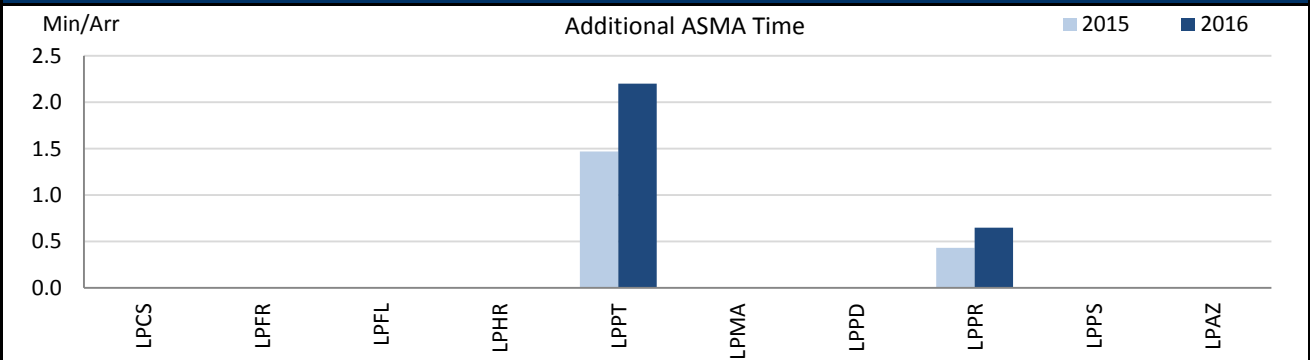
The scope of RP2 monitoring for Portugal comprises 10 airports in 2016, from which the Airport Operator Data Flow is only established for 2 (Porto and Lisbon). Cascais (LPCS) is added to the list of airports in 2016 after its inclusion in the Charging Zone. Portugal shall encourage the respective airport reporting entities to initiate the implementation of the Airport Operator Data Flow. The performance at the 2 Portuguese airports that can be monitored (where traffic has increased by approximately 10%) has worsened with respect to 2015.

2. Additional Taxi-Out Time



While at Porto (LPPR) the additional taxi-out times have maintained the same values as 2015 despite the 11% increase in traffic, at Lisbon (LPPT), the ATXOT values have increased, especially in the second part of the year. The additional taxi-out time for Lisbon airport is one of the highest for the airports in its category regarding number of movements, as shown in the FAB level view.

3. Additional ASMA Time



The additional time in the terminal airspace in Lisbon, despite a considerable increase with respect to 2015 (~50%), is still commensurate with the level of traffic. Porto presents higher times than in 2015 but only in the first part of the year, with an average annual value similar or lower than other airports with similar traffic, as shown in the FAB level view.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Cascais	LPCS	n/a	n/a				n/a	n/a			
Faro	LPFR	n/a	n/a				n/a	n/a			
Flores	LPFL	n/a	n/a				n/a	n/a			
Horta	LPHR	n/a	n/a				n/a	n/a			
Lisbon	LPPT	3.42	4.32				1.47	2.20			
Madeira	LPMA	n/a	n/a				n/a	n/a			
Ponta Delgada	LPPD	n/a	n/a				n/a	n/a			
Porto	LPPR	1.43	1.41				0.43	0.65			
Porto Santo	LPPS	n/a	n/a				n/a	n/a			
Santa Maria	LPAZ	n/a	n/a				n/a	n/a			

PORTUGAL

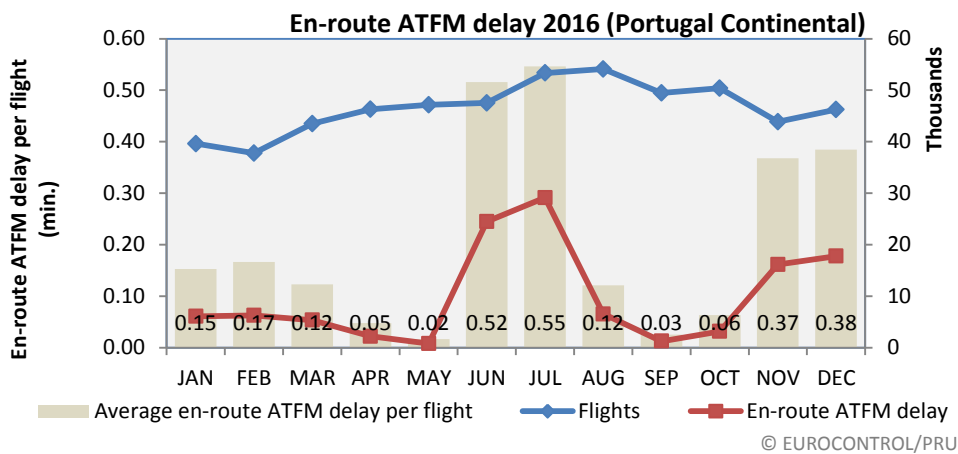
Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.19	0.15	0.14	0.14	0.13	
Deadband +/-	0.00	0.00	0.00	0.00	0.00	
Actual performance	0.48	0.21				

National capacity incentive scheme

Not applicable: incentive scheme defined at FAB level.

Observations regarding national capacity performance



En-route ATFM delay per flight (Portugal)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.19	0.02	0.01	0.16	0.65	0.27	0.50	0.48	0.21

Even though Portugal did not achieve its national target for en route capacity performance in 2016, a significant improvement over en route capacity performance from the previous year, 2015 is noted. Despite a traffic increase of more than 10%, actual delays per flight improved from 0,48 in 2015 to 0,21 in 2016 (a reduction of 56%). The primary reasons for delays in June and July were attributed to staffing issues whereas November saw capacity constraints associated with peak traffic spikes on Saturdays. It is noted that the Network Manager expects Portugal to satisfy the capacity requirements successfully despite the high traffic growth in Lisbon ACC for the remainder of RP2.

Planning and Effective Use of CDRs

No data was provided at national level, since Portugal has implemented free route airspace operations.

Observations on Planning and effective Use of CDRs

It is noted that Portugal has implemented free route airspace operations throughout the Lisbon FIR, making CDRs obsolete. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

No information was provided at national level.

Observations on Effective booking procedures

Historically, Portugal has stated that military operations and training do not impact either ATC capacity or available route options for GAT traffic. However, both in 2015 and 2016 high delays have been attributed to large scale military exercises.

PORTUGAL

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Portugal has originally identified air navigation services at 9 airports as subject to RP2. With the monitoring of 2016, performance at Cascais (LPCS) is additionally monitored.

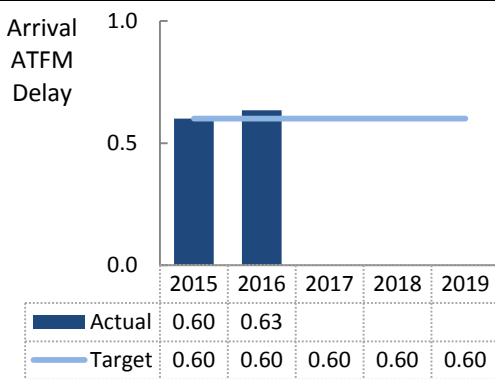
Portugal has established a national target on arrival ATFM delay. The average arrival ATFM delay increased to 0.63 min/arr. in 2016 and misses the target by 0.03 min/arr.

Adherence to ATFM slots varies widely across the different airports. With the exception of Horta (LPHR) all airports show a compliance with ATFM slots above 85%.

The level of implementation of the airport operator data specification is limited. At the time being only Lisbon (LPPT) and Porto (LPPR) transitioned to the Airport Operator Data Flow at the end of 2016.

To ensure the consistent monitoring of pre-departure delay, Portugal is encouraged to strengthen the level of implementation of the Airport Operator Data Flow across the airports.

2. Arrival ATFM Delay



There is a slight increase of 0.03 min/arr. in the national average arrival ATFM delay driven by the performance at Porto (LPPR) and Lisbon (LPPT). At both airports there is an important share of the delay attributed to weather, while at LPPT there is also an important contribution attributed to aerodrome and ATC capacity.

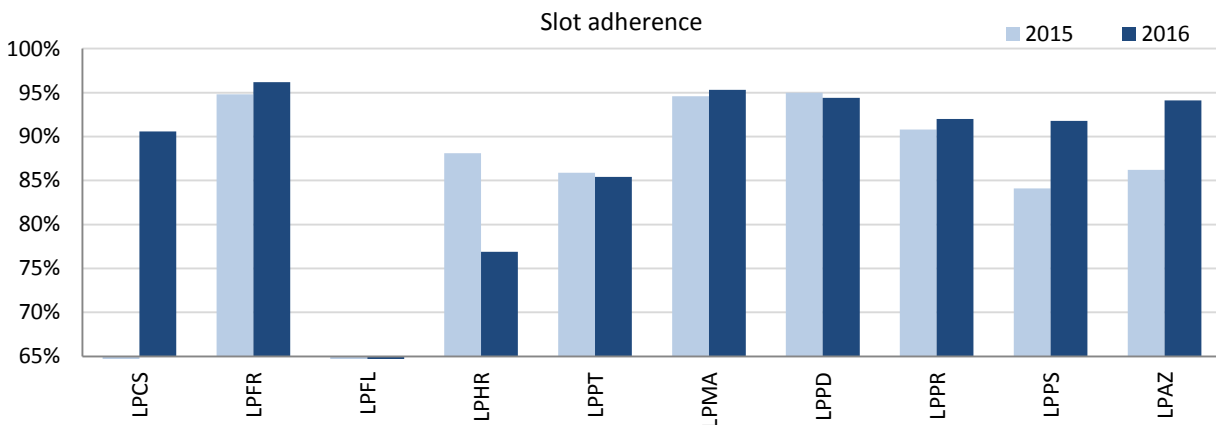
3. Arrival ATFM Delay – National Target and Incentive Scheme

SW FAB performance plan establishes a national target on arrival ATFM delay (0.60 min/arr.) with a breakdown for the two major airports (i.e. Lisboa and Porto) and aggregates the remaining 7 airports into a single value for each of the years of the reference period. Cascais (LPCS) is not included in this group as this airport has now been added to the monitoring. Therefore no reference is established for LPCS.

The national target on arrival ATFM delay is not met. At airport level, while all the smaller airports perform better than their reference target value, the actual values at both Lisbon and Porto exceed their reference values.

The SW FAB performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Portugal.

4. ATFM Slot Adherence



Slot adherence at most Portuguese airports in RP2 ranges above 90%. Porto Santo (LPPS) and Santa Maria (LPAZ) show a significant increase in performance with respect to 2015, while the adherence at Horta (LPHR) falls down to 76.9% (due only to 4 regulated flights outside of the ATFM window).

There are no regulated departures at LPFL.

Slot adherence at Lisbon remains just above the 85% threshold.

5. Pre-departure Delay

The Airport Operator Data Flow has been established for Lisbon (LPPT) and Porto (LPPR) only at the end of 2016. The calculation of the pre-departure delay should be possible as of 2017 for these 2 airports.
 The rest of Portuguese airports subject to RP2 are not reporting at the moment, so the calculation of this indicator is not possible.

6. Appendix

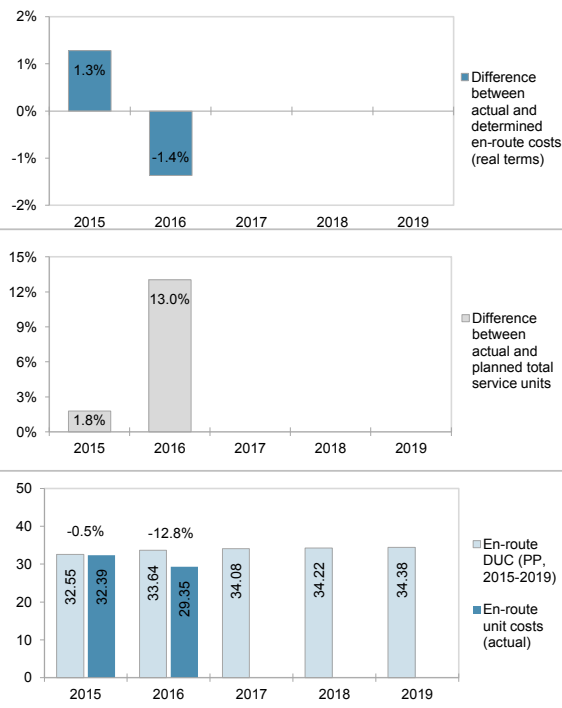
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Cascais	LPCS		0.00					90.6%					n/a			
Faro	LPFR	0.06	0.00				94.8%	96.2%				n/a	n/a			
Flores	LPFL	0.00	0.00									n/a	n/a			
Horta	LPHR	0.00	0.00				88.1%	76.9%				n/a	n/a			
Lisbon	LPPT	0.79	0.88				85.9%	85.4%				n/a	n/a			
Madeira	LPMA	0.01	0.02				94.6%	95.3%				n/a	n/a			
Ponta Delgada	LPPD	0.00	0.00				95.0%	94.4%				n/a	n/a			
Porto	LPPR	0.87	0.93				90.8%	92.0%				n/a	n/a			
Porto Santo	LPSS	0.00	0.00				84.1%	91.8%				n/a	n/a			
Santa Maria	LPAZ	0.00	0.00				86.2%	94.1%				n/a	n/a			

PORTUGAL: En-route charging zone

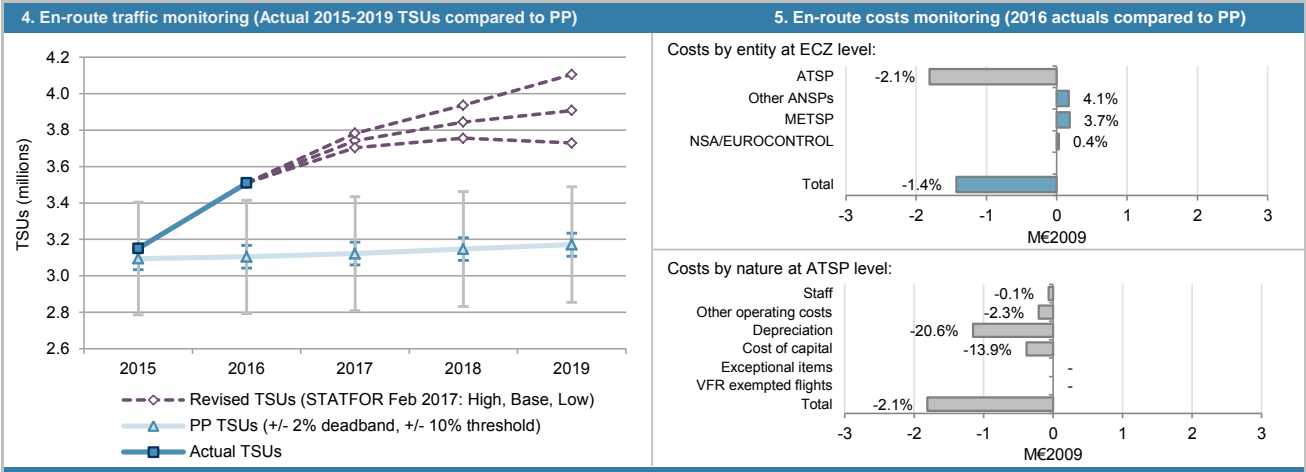
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Portugal ECZ represents 1.7% of the SES en-route ANS determined costs in 2016 ATSP: NAV Portugal FAB: SW FAB National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Portugal: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)	2015D	2016D	2017D	2018D	2019D	
En-route costs (nominal EUR)	111 331 252	117 112 878	121 117 127	124 427 807	127 871 286	
Inflation %	1.2%	1.5%	1.5%	1.5%	1.5%	
Inflation index (100 in 2009)	110.5	112.2	113.8	115.5	117.3	
Real en-route costs (EUR2009)	100 758 704	104 424 905	106 399 345	107 692 336	109 037 112	
Total en-route Service Units	3 095 250	3 104 536	3 122 232	3 147 209	3 171 128	
Real en-route unit cost per Service Unit (EUR2009)	32.55	33.64	34.08	34.22	34.38	
Portugal: Actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A	
En-route costs (nominal EUR)	110 975 595	112 678 540				
Inflation %	0.5%	0.6%				
Inflation index (100 in 2009)	108.7	109.4				
Real en-route costs (EUR2009)	102 048 433	102 996 411				
Total en-route Service Units	3 150 186	3 509 556				
Real en-route unit cost per Service Unit (EUR2009)	32.39	29.35				
Difference between Actuals and Planned	2015	2016	2017	2018	2019	
En-route costs (nominal EUR)	in value -355 657	in value -4 434 338				
	in % -0.3%	in % -3.8%				
Inflation %	in p.p. -0.7 p.p.	in p.p. -0.9 p.p.				
Inflation index (100 in 2009)	in p.p. -1.7 p.p.	in p.p. -2.7 p.p.				
Real en-route costs (EUR2009)	in value 1 289 729	in value -1 428 495				
	in % 1.3%	in % -1.4%				
Total en-route Service Units	in value 54 936	in value 405 020				
	in % 1.8%	in % 13.0%				
Real en-route unit cost per Service Unit (EUR2009)	in value -0.16	in value -4.29				
	in % -0.5%	in % -12.8%				
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (29.35 €2009) is -12.8% lower than planned in the PP (33.64 €2009). This difference results from the combination of higher than planned TSUs (+13.0%) and lower than planned en-route costs (-1.4%, or -1.4 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (+13.0%) exceeds the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +4.0 M€2009.</p> <p>The two main factors explaining the relatively high deviation between actual and planned TSUs are: i) the use of a rather prudent traffic forecast in the Portuguese PP (STATFOR February 2014 low scenario), and ii) a shift in traffic flows from Southeastern Europe to Southwestern Europe in 2016 reflecting changes in touristic flows in the aftermath of the terrorist attacks (see EUROCONTROL Annual Network Operations Report 2016). When considering the most recent STATFOR forecast (February 2017), it appears that traffic is likely to remain significantly higher than planned throughout RP2.</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -3.8% lower than planned. However, since the actual inflation index is also lower than planned (-2.7 p.p.), actual en-route costs are -1.4% below plans when expressed in €2009.</p> <p>The lower than planned en-route costs in real terms are driven by lower costs for NAV Portugal (-2.1% or some -1.8 M€2009) while the costs reported for the other entities are above plans: the MET Service Provider (+3.7% or +0.2 M€2009), the SAR entities (+4.1% or +0.2M€2009) and the NSA (+0.4% or +0.03m€2009). NAV Portugal being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of -0.4 M€2009 corresponding to EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						



PORTUGAL: En-route charging zone

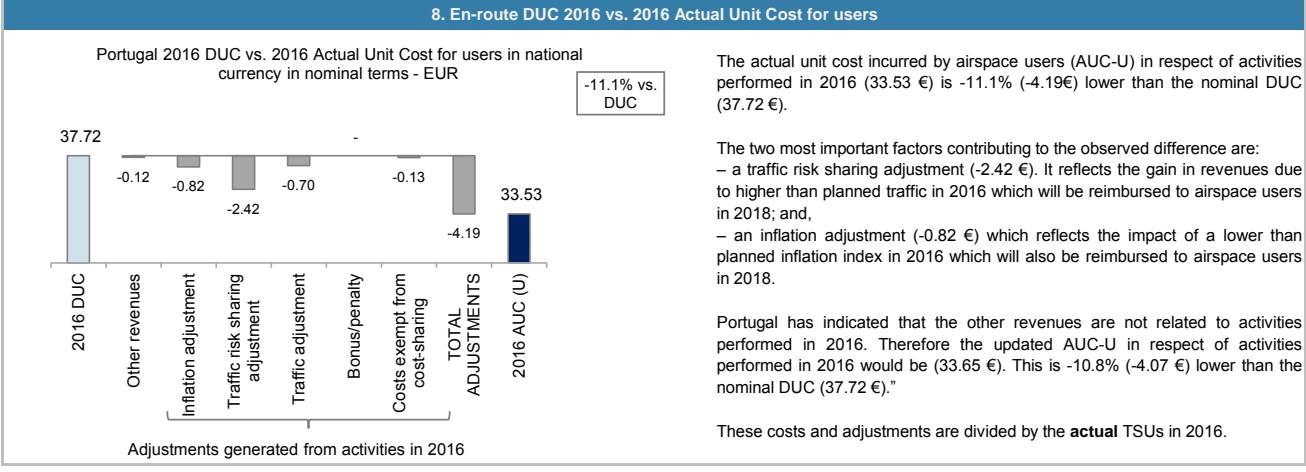
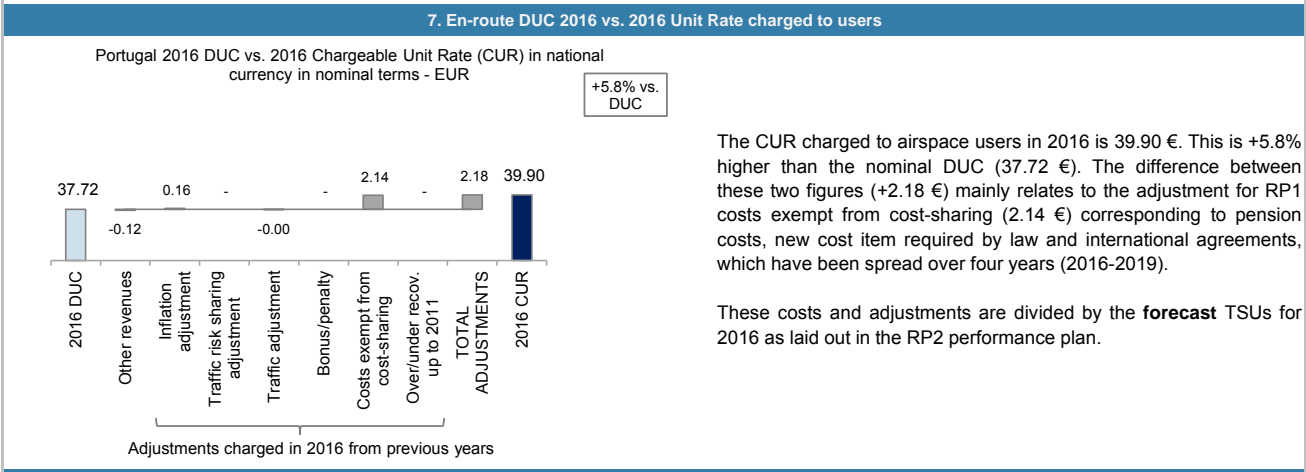
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-27	-418			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-27	-418			
Total costs exempt from cost sharing		-27	-418			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



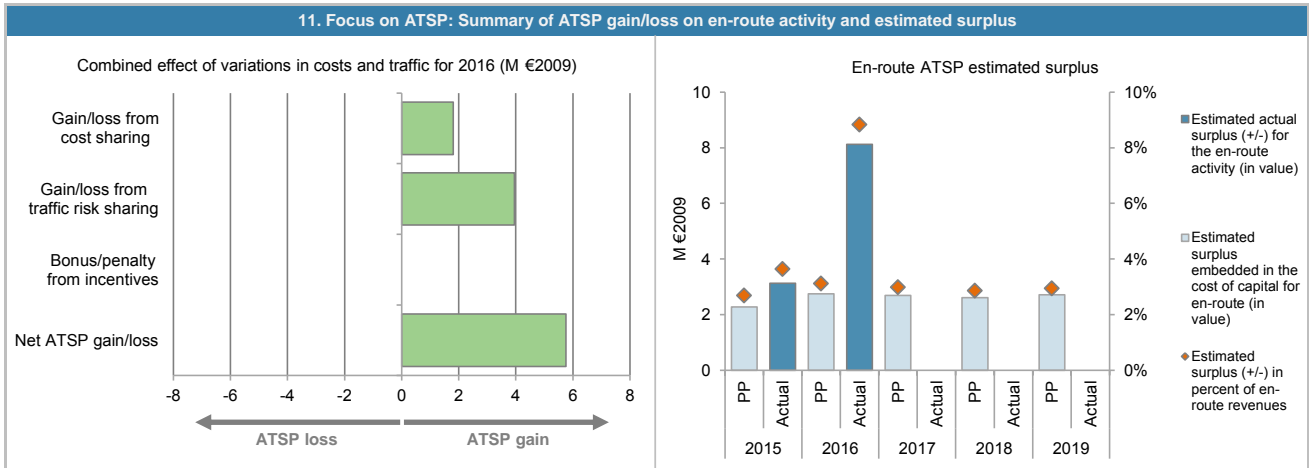
PORTUGAL: En-route ATSP (NAV Portugal)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	84 614	88 012			
Actual costs for the ATSP	85 438	86 201			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-825	1 811			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-825	1 811			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	1.8%	13.0%			
Determined costs for the ATSP (PP) - based on actual inflation	85 450	89 742			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	1 517	3 949			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	692	5 760			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	35 910	43 412	42 420	41 166	42 807
Estimated proportion of financing through equity (in %)	98.3%	98.3%	98.3%	98.3%	98.3%
Estimated proportion of financing through equity (in value)	35 310	42 687	41 711	40 479	42 092
Estimated proportion of financing through debt (in %)	1.7%	1.7%	1.7%	1.7%	1.7%
Estimated proportion of financing through debt (in value)	599	725	708	687	715
Cost of capital pre-tax (in value)	2 277	2 752	2 689	2 610	2 714
Average interest on debt (in %)	0.5%	0.5%	0.5%	0.5%	0.5%
Interest on debt (in value)	3	3	3	3	3
Determined RoE pre-tax rate (in %)	6.4%	6.4%	6.4%	6.4%	6.4%
Estimated surplus embedded in the cost of capital for en-route (in value)	2 274	2 749	2 686	2 607	2 711
Overall estimated surplus (+/-) for the en-route activity	2 274	2 749	2 686	2 607	2 711
Revenue/costs for the en-route activity	84 614	88 012	89 772	90 870	92 021
Estimated surplus (+/-) in percent of en-route revenues	2.7%	3.1%	3.0%	2.9%	2.9%
Estimated ex-ante RoE pre-tax rate (in %)	6.4%	6.4%	6.4%	6.4%	6.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	38 574	37 367			
Estimated proportion of financing through equity (in %)	98.3%	98.3%			
Estimated proportion of financing through equity (in value)	37 930	36 743			
Estimated proportion of financing through debt (in %)	1.7%	1.7%			
Estimated proportion of financing through debt (in value)	644	624			
Cost of capital pre-tax (in value)	2 446	2 369			
Average interest on debt (in %)	0.5%	0.5%			
Interest on debt (in value)	3	3			
Determined RoE pre-tax rate (in %)	6.4%	6.4%			
Estimated surplus embedded in the cost of capital for en-route (in value)	2 443	2 366			
Net ATSP gain(+)/loss(-) on en-route activity	692	5 760			
Overall estimated surplus (+/-) for the en-route activity	3 134	8 126			
Revenue/costs for the en-route activity	86 130	91 961			
Estimated surplus (+/-) in percent of en-route revenues	3.6%	8.8%			
Estimated ex-post RoE pre-tax rate (in %)	8.3%	22.1%			

PORTUGAL: En-route ATSP (NAV Portugal)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 NAV Portugal en-route costs vs. PP

In 2016, NAV Portugal actual en-route costs are -2.1% (-1.8 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided within the en-route Reporting Tables, the main drivers for this deviation are:

- slightly lower staff costs (-0.1% or -0.06 M€2009);
- lower other operating costs (-2.3% or -0.2 M€2009) mainly due to savings in travelling & living and specialised services expenditure;
- lower depreciation costs (-20.6% or -1.2 M€2009), mainly due to changes in the timing and cost of investment projects in relation with the modernisation of the Lisbon ATM system, infrastructure, electromechanical, surveillance and communication equipment; and,
- a lower cost of capital (-13.9% or -0.4 M€2009), due to a lower asset base resulting from a significant capex underspend in 2016 (-53.4%, or -7.9 M€2009).

NAV Portugal net gain/loss on en-route activity in 2016

As shown in box 9, NAV Portugal generated a net gain of +5.8 M€2009 on the en-route activity. This is a combination of two elements:

- a gain of +1.8 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +4.0 M€2009 arising from the traffic risk-sharing mechanism.

No bonuses or penalties relating to the incentives on en-route capacity were reported since actual performance in 2016 was within the dead band set in the RP2 PP.

NAV Portugal overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+5.8 M€2009) and the surplus embedded in the actual cost of capital (+2.4 M€2009) amounts to +8.1 M€2009 (8.8% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 22.1%, which is significantly higher than the 6.4% planned in the PP.

PORTUGAL: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Portugal TCZ represents 2.4% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP: NAV Portugal		· Airports with fewer than 70,000 IFRs ATMs:		9	
· National currency: EUR		· Airports with between 70,000 and 225,000 IFRs ATMs:		1	
· Number of airports in charging zone in 2016: 10, of which:		· Airports with more than 225,000 IFRs ATMs:		0	
2. Terminal DUC monitoring at Charging Zone level					
Portugal: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	27 415 133	30 183 378	31 371 504	32 242 701	34 274 163
Inflation %	1.2%	1.5%	1.5%	1.5%	1.5%
Inflation index (100 in 2009)	110.5	112.2	113.8	115.5	117.3
Real terminal costs (EUR2009)	24 811 661	26 913 320	27 559 335	27 906 076	29 225 918
Total terminal Service Units	196 700	200 022	200 922	202 522	204 222
Real terminal unit cost per Service Unit (EUR2009)	126.14	134.55	137.16	137.79	143.11
Portugal: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	28 136 876	28 465 925			
Inflation %	0.5%	0.6%			
Inflation index (100 in 2009)	108.7	109.4			
Real terminal costs (EUR2009)	25 873 474	26 019 933			
Total terminal Service Units	205 314	232 390			
Real terminal unit cost per Service Unit (EUR2009)	126.02	111.97			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value 721 744	-1 717 453			
	in % 2.6%	-5.7%			
Inflation %	in p.p. -0.7 p.p.	-0.9 p.p.			
Inflation index (100 in 2009)	in p.p. -1.7 p.p.	-2.7 p.p.			
Real terminal costs (EUR2009)	in value 1 061 813	-893 387			
	in % 4.3%	-3.3%			
Total terminal Service Units	in value 8 614	32 368			
	in % 4.4%	16.2%			
Real terminal unit cost per Service Unit (EUR2009)	in value -0.12	-22.58			
	in % -0.1%	-16.8%			
3. Focus on terminal at State/Charging Zone level					
<p>For the year 2016, Portugal reported only one TCZ comprising 10 airports: Lisboa, Porto, Faro, Madeira, Porto Santo, Ponta Delgada, Santa Maria, Horta, Flores and Cascais (which was not part of the TCZ in 2015).</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (111.97 €2009) is -16.8% lower than planned in the PP (134.55 €2009). This difference results from the combination of higher than planned TNSUs (+16.2%) and lower than planned terminal costs (-3.3%, or -0.9 ME2009).</p> <p>Terminal service units The difference between actual and planned TSUs (+16.2%) exceeds the +10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of en-route revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +1.2 ME2009.</p> <p>The two main factors explaining the relatively high deviation between actual and planned TNSUs are: i) the use of a rather prudent traffic forecast in the Portuguese PP (STATFOR February 2014 low scenario), and ii) a shift in traffic flows from Southeastern Europe to Southwestern Europe in 2016 reflecting changes in touristic flows in the aftermath of the terrorist attacks (see EUROCONTROL Annual Network Operations Report 2016). When considering the most recent STATFOR forecast (February 2017), it appears that traffic is likely to remain significantly higher than planned throughout RP2.</p> <p>Terminal costs In nominal terms, actual terminal costs are -5.7% lower than planned. However, since the actual inflation index is also lower than planned (-2.7 p.p.), the actual terminal costs are -3.3% below plans when expressed in €2009. NAV Portugal is the only reporting entity in the terminal cost base. A detailed analysis at ATSP level is provided in box 12. There are no costs exempt from cost-sharing reported for the TCZ.</p>					

PORTUGAL: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

Legend:
 - - - Revised TNSUs (STATFOR Feb 2017: High, Base, Low)
 -▲- PP TNSUs (+/- 2% deadband, +/- 10% threshold)
 -■- Actual TNSUs

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-3.3%
Other ANSPs	-
METSP	-
NSA	-
Total	-3.3%

Costs by nature at ATSP level:

Staff	-2.6%
Other operating costs	-1.4%
Depreciation	-
Cost of capital	-
Exceptional items	-
VFR exempted flights	-
Total	-3.3%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Portugal 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The CUR charged to airspace users in 2016 is 134.05 €. This is -11.2% lower than the nominal DUC (150.90 €).

The difference between these two figures (-16.85 €) reflects exclusively the adjustment for over-recoveries from 2014 reimbursed to airspace users in 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Portugal 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (132.38 €) is -12.3% lower than the nominal DUC (150.90 €).

The two most important factors contributing to the observed difference (-18.52 €) are:

- the traffic risk sharing adjustment (-15.21€), which reflects the gain in revenues due to higher than planned traffic in 2016, which will be reimbursed to airspace users in 2018; and,
- the inflation adjustment (-3.18 €), which corresponds to the impact of a lower than planned inflation index for the year 2016, which will also be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

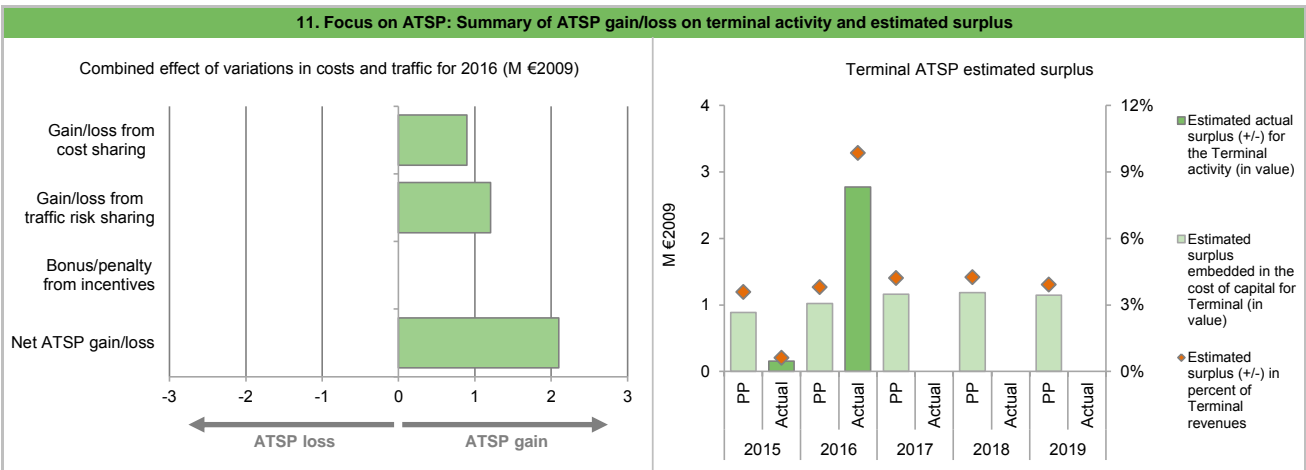
PORTUGAL: Terminal ATSP (NAV Portugal)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	24 812	26 913			
Actual costs for the ATSP	25 873	26 020			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-1 062	893			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-1 062	893			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	4.4%	16.2%			
Determined costs for the ATSP (PP) - based on actual inflation	25 052	27 429			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	680	1 207			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-382	2 100			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	14 035	16 139	18 345	18 767	18 091
Estimated proportion of financing through equity (in %)	98.3%	98.3%	98.3%	98.3%	98.3%
Estimated proportion of financing through equity (in value)	13 791	15 858	18 026	18 441	17 777
Estimated proportion of financing through debt (in %)	1.7%	1.7%	1.7%	1.7%	1.7%
Estimated proportion of financing through debt (in value)	244	280	319	326	314
Cost of capital pre-tax (in value)	889	1 023	1 162	1 189	1 146
Average interest on debt (in %)	0.4%	0.4%	0.4%	0.4%	0.4%
Interest on debt (in value)	1	1	1	1	1
Determined RoE pre-tax rate (in %)	6.4%	6.4%	6.4%	6.4%	6.4%
Estimated surplus embedded in the cost of capital for terminal (in value)	888	1 021	1 161	1 188	1 145
Overall estimated surplus (+/-) for the terminal activity	888	1 021	1 161	1 188	1 145
Revenue/costs for the terminal activity	24 812	26 913	27 559	27 906	29 226
Estimated surplus (+/-) in percent of terminal revenues	3.6%	3.8%	4.2%	4.3%	3.9%
Estimated ex-ante RoE pre-tax rate (in %)	6.4%	6.4%	6.4%	6.4%	6.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	8 541	10 585			
Estimated proportion of financing through equity (in %)	98.3%	98.3%			
Estimated proportion of financing through equity (in value)	8 393	10 409			
Estimated proportion of financing through debt (in %)	1.7%	1.7%			
Estimated proportion of financing through debt (in value)	148	177			
Cost of capital pre-tax (in value)	541	671			
Average interest on debt (in %)	0.4%	0.4%			
Interest on debt (in value)	1	1			
Determined RoE pre-tax rate (in %)	6.4%	6.4%			
Estimated surplus embedded in the cost of capital for terminal (in value)	541	670			
Net ATSP gain(+)/loss(-) on terminal activity	-382	2 100			
Overall estimated surplus (+/-) for the terminal activity	159	2 771			
Revenue/costs for the terminal activity	25 492	28 120			
Estimated surplus (+/-) in percent of terminal revenues	0.6%	9.9%			
Estimated ex-post RoE pre-tax rate (in %)	1.9%	26.6%			

PORTUGAL: Terminal ATSP (NAV Portugal)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 NAV Portugal terminal costs vs. PP

NAV Portugal actual terminal costs in the TCZ are -3.3% (-0.9 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided within the terminal Reporting Tables, the main drivers for this deviation are:

- lower staff costs (-2.6% or -0.6 M€2009), mainly due to delays in the recruitment plan of operational staff;
- lower other operating costs (-1.4% or -0.03 M€2009), mainly due to savings in travelling & living and specialised services expenditure;
- higher depreciation costs (+2.5% or +0.05 M€2009); and,
- a lower cost of capital (-34.4% or -0.4 M€2009) due to a lower asset base resulting from a significant capex underspend in 2016 (-53.4%, or -7.9 M€2009 at gate-to-gate level).

NAV Portugal 2016 net gain/loss on terminal activity

As shown in box 9, the terminal activity generated a net gain of +2.1 M€2009 in 2016. This amount is the combination of two elements:

- a gain of +0.9 M€2009 as a result of the cost sharing mechanism; and,
- a gain of +1.2 M€2009 as a result of traffic risk sharing mechanism.

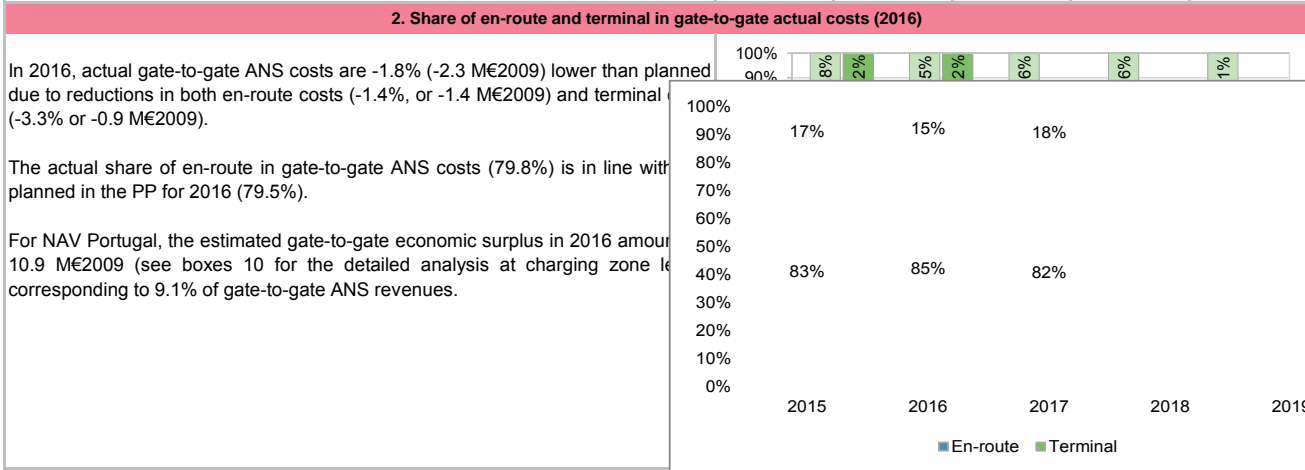
NAV Portugal 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+2.1 M€2009) and the surplus embedded in the cost of capital (+0.7 M€2009) amounts to +2.8 M€2009 (9.9% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 26.6%, which is significantly higher than the 6.4% planned in the PP.

PORTUGAL: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Portugal: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	100 758 704	104 424 905	106 399 345	107 692 336	109 037 112
Real terminal costs (EUR2009)	24 811 661	26 913 320	27 559 335	27 906 076	29 225 918
Real gate-to-gate costs (EUR2009)	125 570 365	131 338 226	133 958 680	135 598 412	138 263 031
En-route share (%)	80.2%	79.5%	79.4%	79.4%	78.9%
Portugal: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	102 048 433	102 996 411			
Real terminal costs (EUR2009)	25 873 474	26 019 933			
Real gate-to-gate costs (EUR2009)	127 921 907	129 016 344			
En-route share (%)	79.8%	79.8%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	2 351 543	-2 321 882			
in %	1.9%	-1.8%			
En-route share					
in p.p.	-0.5%	0.3%			



3. Technical notes on en-route and terminal information reported by Portugal

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Spain

Version: 1.1

Date: 9 October 2017

SPAIN

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	59	B	C	C	C	B
ENAIRE	92	D	E	D	D	C

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	47%
Runway Incursions (RIs)	100%	20%
ATM Specific Occurrences (ATM-S)		2%
Source of RAT data:	AESA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	6	1
Occurrence reporting and Investigation	2	0
TOTAL	17	1
ENAIRE	Number of questions answered	
	YES	NO
Policy and its implementation	11	2
Legal/Judiciary	2	1
Occurrence reporting and Investigation	6	2
TOTAL	19	5

Observations

One, Safety Policy and Objectives, out of the four reviewed EoSM Components/areas of the State does not meet the 2019 EoSM target level.

As a result of EASA verification activity:

- one answer was downgraded below the Level "C" in the area of safety policy

In addition, after verification some answers above the target level were also downgraded, but not below "C", either in order to correspond with EASA audit results to the end of 2015 or because the justification was not sufficient.

Out of 34 questions in Components 1-4 (not including Component - Safety Culture), only 3 are below Level C.

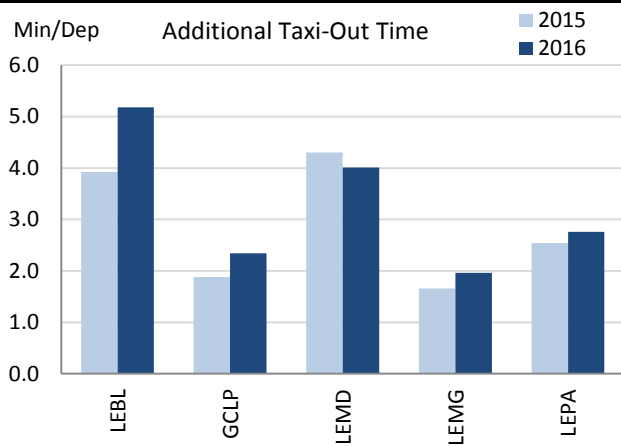
SPAIN

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

Spain included five airports under RP2 monitoring. All of them have successfully established the airport operator data flow, allowing a correct monitoring of both environment indicators.
 Despite a general increase in the additional times in the taxi-out and terminal phases with respect to 2015, the performance at Spanish airports is still in line with their number of movements and it contributes adequately to the European values.
 With a total increase in traffic at these airports around 7%, some of them are handling more than 10% more movements (LEMG, LEPA, GCLP) while Madrid (LEMD) registered a 3% increase with respect to 2015.

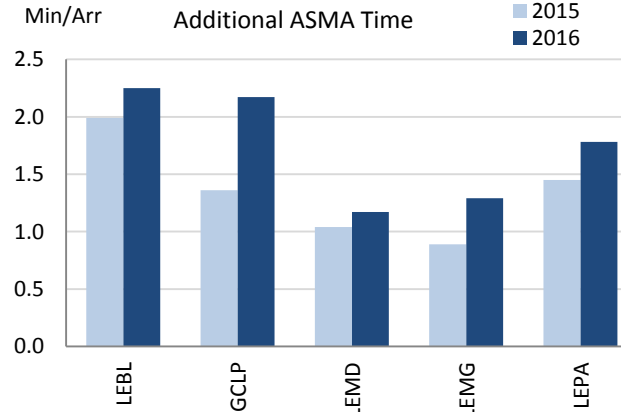
2. Additional Taxi-Out Time



There is an increase in the additional taxi-out time with respect to 2015 in all Spanish airports but Madrid (LEMD). As it is expected according to the evolution of traffic, the metric typically rises during high season (summer) except for Gran Canaria or Madrid that have a more stable profile.
 The increase with respect to 2015 is consistent throughout the year in GCLP and LEPA. Málaga (LEMG) actually has a better performance in the first half of the year, but it deteriorates later. Barcelona shows also higher values this year throughout the entire year, but that increase in ATXOT is drastic in the summer months, about 50% (~2.5 min/dep.) higher than last year.

According to the Spanish NSA, some specific issues like storms or runway limitations in Barcelona together with the new procedure for special situations related to bird strikes may have had an impact on the results.

3. Additional ASMA Time



Regarding additional time in terminal airspace, 2016 shows an increase in all Spanish airports.
 The trend is more or less the same for every month of the year, but particularly relevant in high season.
 The most striking case is Gran Canaria (GCLP) where the additional ASMA has increased almost 60% in average in 2016. Spanish NSA explains that military events had a considerable impact in the results, but allowed to enhance partially military mission effectiveness, as well as other special situations (runway availability, configurations use due to weather, etc.)

On the other side, and despite the slight increase in 2016, Madrid (LEMD) shows best in class behaviour with a remarkably low additional ASMA time (1.17 min/arr.) for an airport with more than 300.000 movements per year.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

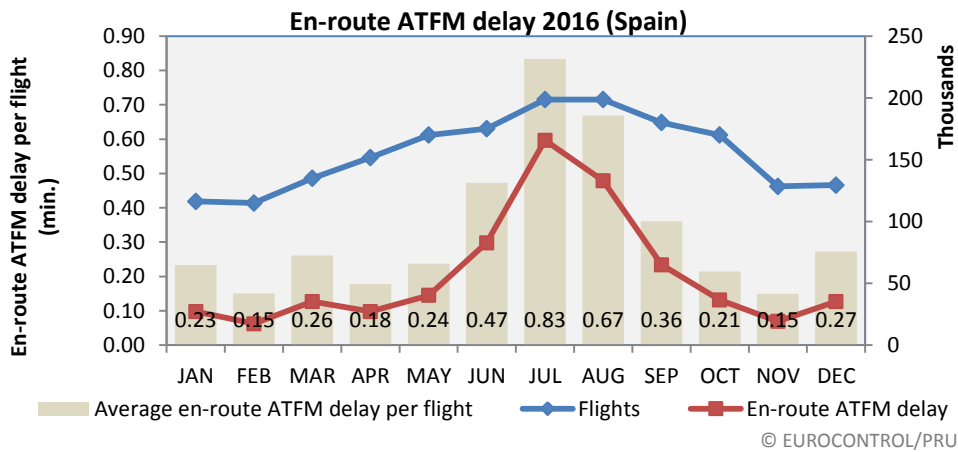
AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Barcelona	LEBL	3.92	5.18				1.99	2.25			
Gran Canaria	GCLP	1.88	2.34				1.36	2.17			
Madrid/ Barajas	LEMD	4.30	4.01				1.04	1.17			
Málaga	LEMG	1.66	1.96				0.89	1.29			
Palma de Mallorca	LEPA	2.54	2.76				1.45	1.78			

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.30	0.29	0.28	0.27	0.27	The value of actual performance published here for 2016 includes the results of the Post operations performance adjustment process, as notified by the Network Manager.
Deadband +/-	0.00	0.00	0.00	0.00	0.00	
Actual performance	0.33	0.37				

National capacity incentive scheme

Not applicable: Incentive scheme defined at FAB level.

Observations regarding national capacity performance



En-route ATFM delay per flight (Spain)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.57	0.78	1.93	1.56	0.48	0.41	0.30	0.33	0.37

The deterioration of en route capacity performance in Spain in 2016 (0,37 minutes delay per flight) in comparison to 2015 (0,33 minutes delay per flight) is noted. It is noted that the figure of 0,37 minutes per flight excludes 90k minutes of delay due to ATFM regulations applied in Spain but which has been re-attributed to industrial action in France, according to the Network Managers post operations performance adjustment process. equivalent to an additional 0,05 minutes of delay per flight in Spain or 0,42 overall. It is noted that Spain experienced a significant increase in traffic in 2016, approximately 8% on 2015 levels. It is noted that the Network Manager, according to the latest capacity plans, expects shortfalls in capacity in Barcelona ACC (2017) associated with high traffic growth.

Planning and Effective Use of CDRs					
Spain	2015 Value	2016 Value	2017 Value	2018 Value	2019 Value
Number of aircraft filing flight plans via CDRs		150.272			
Number of aircraft that could have planned CDRs		231.905			
Rate of planning		44%			
Additional comments					
<i>Rate of planning corresponds to the average value calculated for each CDR, and it is therefore not calculated from the two values reported above.</i>					
Spain	2015 Value	2016 Value	2017 Value	2018 Value	2019 Value
Number of aircraft using CDRs		110.960			
Number of aircraft that could have planned CDRs		231.905			
Effective use of CDRs		26%			
Additional comments					
<i>Effective use of CDRs corresponds to the average value calculated for each CDR, and it is therefore not calculated from the two values reported above.</i>					
Observations on Planning and effective Use of CDRs					
Spain provides values for the rate of planning of CDRs and the effective use of CDRs with the caveat that they are not calculated on the reported figures. Therefore it is impossible to draw any conclusions from these figures.					
Effective booking procedures					
<p>The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 47%.</p> <p>The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 1%</p> <p>Procedure 3 is applicable within the State. Spain reports 87 hours of ad hoc airspace reservations / segregation via the UUP process but does not provide any information about how many of those hours were actually used for the purposes requiring segregation or restriction.</p>					
Observations on Effective booking procedures					
No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.					

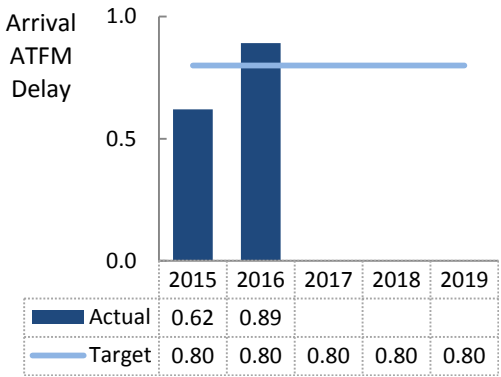
SPAIN

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Spain identifies 5 airports as subject to RP2 monitoring. The established national target on arrival ATFM delay has been exceeded in 2016 by 0.09 min/arr.
 Regarding the adherence to ATFM slots, the performance varies depending on the airport, being all of them over the critical 85% threshold.
 The reported pre-departure delay requires further validation due to the use of ambiguity codes.

2. Arrival ATFM Delay



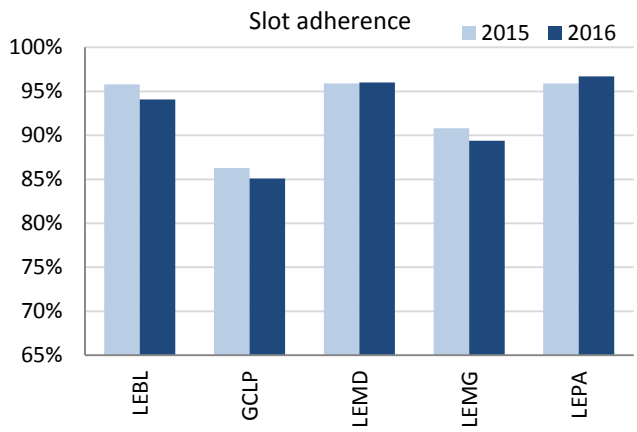
The national average of arrival ATFM delay in Spain reaches 0.89 min/arr. in 2016, which is a significant 44% increase with respect to the achieved delay in 2015.
 The main driver for this increase is Barcelona (LEBL) where the arrival ATFM delay reaches in 2016 1.62 min/arr., more than double of the delay in 2015. Most of this delay is accrued during the summer and allocated to a mix of aerodrome capacity, environmental issues and weather. Spanish NSA reports that a plan has been set up in order to adapt air navigation capacity to coordinated capacity requested by the airport manager. Approach capacity will be increased through the improvement of TMA design.

Gran Canaria (GCLP) also shows a drastic increase in the arrival ATFM delay, reaching 0.58 min/arr. This delay is mainly associated with aerodrome capacity, especially during the Summer Season, due to works on the taxiway that limited the capacity of the infrastructure. The predominant South configuration in December also had a negative impact. A plan has been set up in order to implement reduced separations between successive arrivals.
 Madrid (LEMD) reaches 0.51 min/arr., but still remains under its reference value according to SW FAB PP. Although the minutes of delay attributed to aerodrome capacity have significantly reduced, the weather related regulations have had a much bigger impact in 2016, especially in December due to low visibility procedures.

3. Arrival ATFM Delay – National Target and Incentive Scheme

The SW FAB performance plan sets a consistent national target on arrival ATFM delay with a breakdown per airport for each of the years of the reference period. The target is constant throughout RP2.
 Given the actual performance, the national target is not met in 2016, while the local reference values are met for Madrid, Málaga and Palma de Mallorca.
 The SW FAB performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Spain.

4. ATFM Slot Adherence



Adherence to ATFM slots at Spanish airports ranges between the best in class value of LEPA or LEMD (above 95%) and the performance at GCLP that is just above the 85% threshold.

5. Pre-departure Delay

The Airport Operator Data Flow is well established for all Spanish airports subject to RP2. The level of reporting ranges in the best of class across Europe. Nevertheless, further validation is required to address the share of delayed flights with no delay code attribution and/or the high share of ambiguity delay codes. According to the reported figures, the pre-departure delay due to capacity restrictions at the airport of departure has increased at the Spanish airports in 2016, with the exception of Madrid (LEMD) that shows a reduction of 20%.

6. Appendix

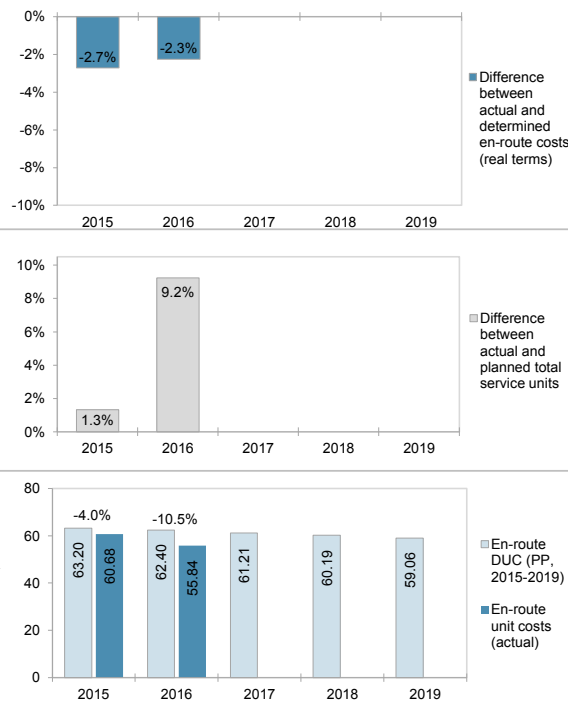
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Barcelona	LEBL	0.68	1.62				95.8%	94.1%				0.50	0.73			
Gran Canaria	GCLP	0.17	0.58				86.3%	85.1%				0.33	0.38			
Madrid/ Barajas	LEMD	0.34	0.51				95.9%	96.0%				0.61	0.48			
Málaga	LEMG	0.04	0.01				90.8%	89.4%				0.32	0.34			
Palma de Mallorca	LEPA	1.69	1.20				95.9%	96.7%				0.23	0.30			

SPAIN CONTINENTAL: En-route charging zone

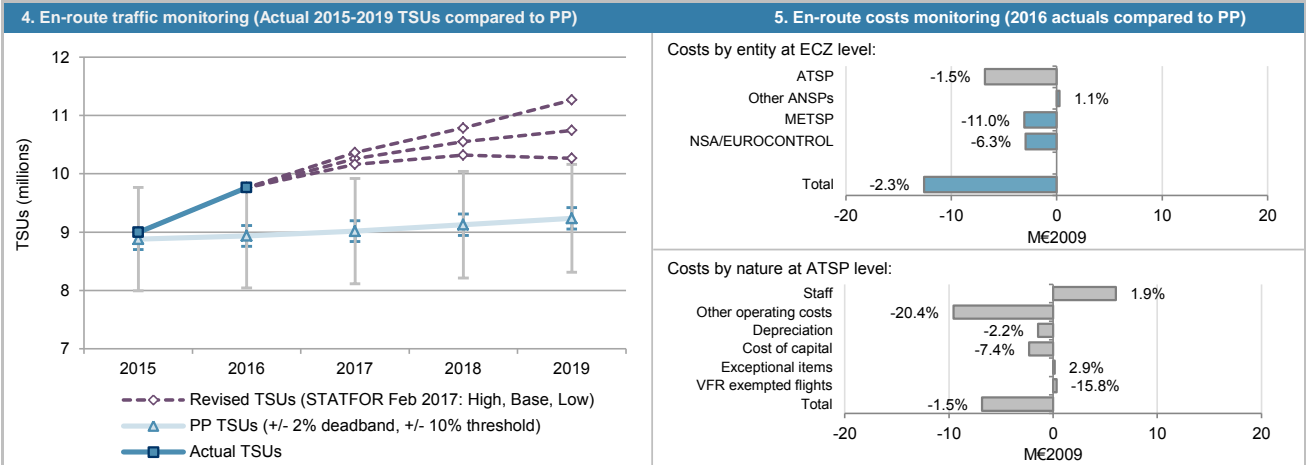
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
· Spain Continental ECZ represents 9.0% of the SES en-route ANS determined costs in 2016						
· ATSP: ENAIRE						
· FAB: SW FAB						
· National currency: EUR						
2. En-route DUC monitoring at Charging Zone level						
Spain Continental: Data from RP2 PP (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		620 443 569	622 072 583	622 240 962	625 580 952	627 777 294
Inflation %		0.8%	0.9%	1.0%	1.0%	1.1%
Inflation index (100 in 2009)		110.6	111.6	112.7	113.9	115.1
Real en-route costs (EUR2009)		561 172 369	557 638 172	552 025 959	549 379 889	545 563 910
Total en-route Service Units		8 880 000	8 936 000	9 018 000	9 128 000	9 238 000
Real en-route unit cost per Service Unit (EUR2009)		63.20	62.40	61.21	60.19	59.06
Spain Continental: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		592 195 475	589 457 700			
Inflation %		-0.6%	-0.3%			
Inflation index (100 in 2009)		108.5	108.1			
Real en-route costs (EUR2009)		545 935 983	545 047 211			
Total en-route Service Units		8 997 417	9 761 348			
Real en-route unit cost per Service Unit (EUR2009)		60.68	55.84			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-28 248 094	-32 614 884			
	in %	-4.6%	-5.2%			
Inflation %	in p.p.	-1.4 p.p.	-1.2 p.p.			
	in p.p.	-2.1 p.p.	-3.4 p.p.			
Real en-route costs (EUR2009)	in value	-15 236 386	-12 590 961			
	in %	-2.7%	-2.3%			
Total en-route Service Units	in value	117 417	825 348			
	in %	1.3%	9.2%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-2.52	-6.57			
	in %	-4.0%	-10.5%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
In 2016, the actual en-route unit cost for Spain Continental (55.84 €2009) is -10.5% lower than planned in the SW FAB PP (62.40 €2009). This difference results from the combination of higher than planned TSUs (+9.2%) and lower than planned en-route costs (-2.3%, or -12.6 M€2009). Lower than planned actual costs in real terms result from both lower than planned costs in nominal terms (-5.2%) and a lower actual inflation rate resulting in lower actual inflation index (-3.4 p.p. vs. plan).						
En-route service units						
The difference between actual and planned TSUs for Spain Continental (+9.2%) falls outside the ±2% dead-band, but remains inside the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting additional en-route revenues relating to the traffic risk sharing are therefore shared between the ATSP (ENAIRE) and airspace users with the gain to be retained by the ATSP amounting to +19.8 M€2009. Considering the latest STATFOR February 2017 TSUs forecasts, the traffic outlook for the rest of RP2 remains much more optimistic than presented in the SW PP for Spain Continental. Indeed, if any of the STATFOR February 2017 scenarios materialise, the traffic is likely to be substantially higher than planned, exceeding the +10% threshold for the rest of RP2. It is noteworthy that the traffic forecasts underpinning the en-route DUC targets were rather prudent since they were in line with the STATFOR February 2014 TSUs low case forecast scenario.						
En-route costs						
In nominal terms, actual en-route costs are -5.2% lower than planned for Spain Continental. However, since the actual inflation index is also lower than the forecast in the PP (-3.4 p.p.), actual en-route costs expressed in €2009 are -2.3% below the planned level. The overall difference (-12.6 M€2009) between actual and planned costs in 2016 for Spain Continental is primarily driven by ENAIRE (-1.5%, or -6.8 M€2009). AEMET (-11.0%, or -3.1 M€2009) and the NSAs/EUROCONTROL (-6.3%, or -3.0 M€2009) also recorded lower than planned costs, while actual costs were higher than planned for other ANSP (EA-Air Force) (+1.1%, or +0.3 M€2009). A detailed analysis of the main en-route ATSP (ENAIRE) costs is provided in box 12.						
Costs exempt from cost-sharing are reported for a total amount of -10.8 M€2009, primarily corresponding to the difference between the actual and planned operating costs as a result of unforeseen changes in the national taxation law (VAT) for ENAIRE (-8.4 M€2009). Other costs exempt from cost sharing include -2.3 M€2009 relating to EUROCONTROL costs and some -0.1 M€2009 relating to interest rates on loans for other ANSP. These costs (reimbursements to airspace users) will be eligible for carry-over to the following reference period(s), if deemed allowed by the European Commission.						



SPAIN CONTINENTAL: En-route charging zone

Monitoring of en-route COST-EFFICIENCY for 2016



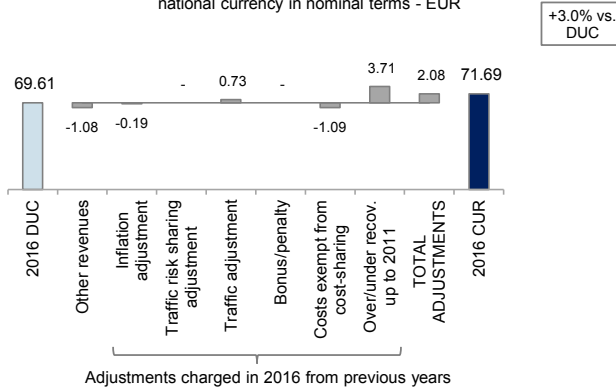
6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	-63	-130			
	Taxation law	-7 491	-8 361			
	New cost item required by law	0	0			
	International agreements	-163	-2 287			
by entity	ATSP	-7 491	-8 361			
	Other ANSP	-63	-130			
	METSP	0	0			
	NSA/EUROCONTROL	-163	-2 287			
Total costs exempt from cost sharing		-7 717	-10 777			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. En-route DUC 2016 vs. 2016 Unit Rate charged to users

Spain Continental 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

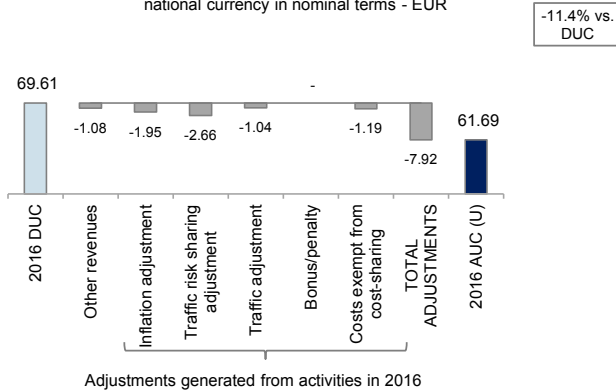


The CUR charged to airspace users in 2016 is 71.69 €, i.e. the same level as in 2015. This is +3.0% higher than the nominal DUC (69.61 €). The two most important factors contributing to the observed difference are the adjustment for under recoveries prior to the start of RP1 (+3.71 €) and the traffic adjustment (+0.73 €), which are partially offset by cost exempt from cost sharing (-1.09€) and the deduction of other revenues (-1.08 €).

These costs and adjustments are divided by the 2016 forecast TSUs.

8. En-route DUC 2016 vs. 2016 Actual Unit Cost for users

Spain Continental 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR



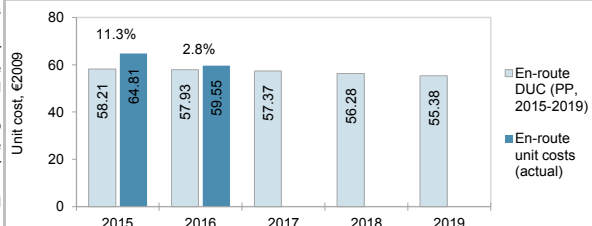
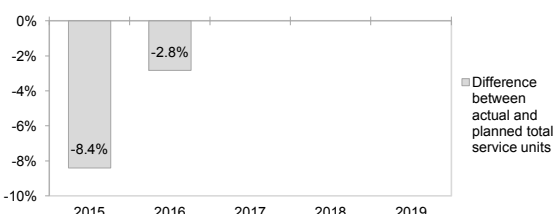
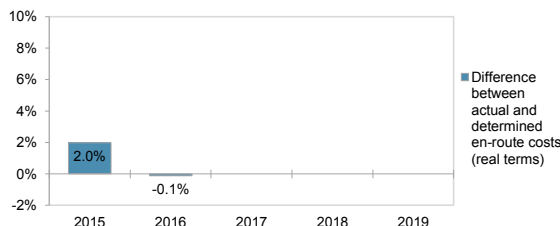
The actual unit cost (61.69 €) incurred by airspace users (AUC-U) in respect of activities performed in 2016 is -11.4% (-7.92 €) lower than the nominal DUC (69.61 €), as in addition to the other revenues, all the adjustments relating to 2016 are to be reimbursed to users through future unit rates (inflation, traffic and cost exempt from cost-sharing).

These costs and adjustments are divided by the 2016 actual TSUs.

SPAIN CANARIAS: En-route charging zone

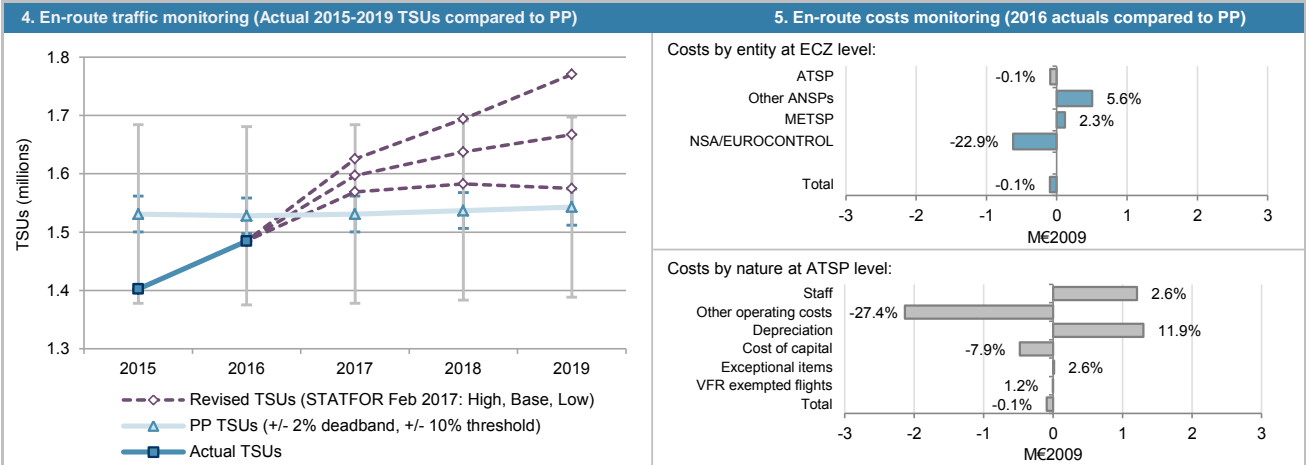
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> Spain Canarias ECZ represents 1.4% of the SES en-route ANS determined costs in 2016 ATSP: ENAIRE FAB: SW FAB National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Spain Canarias: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		98 528 223	98 750 683	99 003 882	98 495 359	98 326 935
Inflation %		0.8%	0.9%	1.0%	1.0%	1.1%
Inflation index (100 in 2009)		110.6	111.6	112.7	113.9	115.1
Real en-route costs (EUR2009)		89 115 786	88 522 066	87 832 072	86 497 790	85 450 091
Total en-route Service Units		1 531 000	1 528 000	1 531 000	1 537 000	1 543 000
Real en-route unit cost per Service Unit (EUR2009)		58.21	57.93	57.37	56.28	55.38
Spain Canarias: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		98 587 390	95 626 804			
Inflation %		-0.6%	-0.3%			
Inflation index (100 in 2009)		108.5	108.1			
Real en-route costs (EUR2009)		90 886 212	88 422 160			
Total en-route Service Units		1 402 349	1 484 755			
Real en-route unit cost per Service Unit (EUR2009)		64.81	59.55			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	59 166	-3 123 879			
	in %	0.1%	-3.2%			
Inflation %	in p.p.	-1.4 p.p.	-1.2 p.p.			
	inflation index (100 in 2009)	-2.1 p.p.	-3.4 p.p.			
Real en-route costs (EUR2009)	in value	1 770 426	-99 906			
	in %	2.0%	-0.1%			
Total en-route Service Units	in value	-128 651	-43 245			
	in %	-8.4%	-2.8%			
Real en-route unit cost per Service Unit (EUR2009)	in value	6.60	1.62			
	in %	11.3%	2.8%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost for Spain Canarias (59.55 €2009) is +2.8% higher than planned (57.93 €2009). In line with Art. 18 of Regulation (EU) No 390/2013, if the target is not met the State should define "corrective measures". Although there is no explicit mention of "corrective measures" per se in the SW FAB 2016 Monitoring Report, in a context of lower than expected traffic (TSUs) for Spain Canarias (-2.8%), Spain managed to keep actual costs lower than planned in nominal terms (-3.2%), the latter being neutralised by a lower actual inflation rate and inflation index (-3.4 p.p.). Overall, the 2016 en-route costs in real terms is roughly equivalent to the level underpinning the en-route DUC targets (-0.1%, or -0.1 ME2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs for Spain Canarias (-2.8%) falls outside the ±2% dead-band, but is inside the ±10% alert threshold foreseen in the traffic risk-sharing mechanism. The resulting loss of en-route revenues is therefore shared between the ATSP (ENAIRE) and airspace users, with the loss borne by ENAIRE amounting to -1.7 ME2009.</p> <p>Looking forward, based on the latest STATFOR February 2017 TSUs forecasts, the actual traffic in 2017 is likely to be higher than planned for Spain Canarias en-route charging zone. Moreover, in all scenarios of the STATFOR February 2017 TSUs forecast, the traffic is expected to remain higher than planned for the rest of RP2. It is noteworthy that the traffic forecasts underpinning the en-route DUC targets for Spain Canarias were rather prudent since they were in line with the low case scenario of the STATFOR September 2014 TSUs forecast.</p>						
En-route costs						
<p>The 2016 actual en-route costs in nominal terms are below plans (-3.2%) for Spain Canarias. However, the actual inflation (-1.2 p.p.) and the resulting inflation index for 2016 (-3.4 p.p.) are lower than planned and this has a counterbalancing effect since the actual en-route costs in real terms end up just below plans (-0.1%). The overall difference (-0.1 ME2009) between the 2016 actual and planned en-route costs in real terms for Spain Canarias is driven mainly by lower NSA/EUROCONTROL costs (-22.9%, or -0.6 ME2009), which are counterbalanced by higher actual costs for the other ANSP (EA-Air Force) (+5.6%, or +0.5 ME2009) and AEMET (+2.3%, or +0.1 ME2009), mainly due to the higher than planned staff costs for both entities. Costs exempt from cost-sharing are reported for a total amount of -0.8 ME2009, primarily corresponding to the difference between the actual and planned operating costs resulting from unforeseen changes in the national taxation law (VAT) for ENAIRE (-0.6 ME2009). Other costs exempt from cost sharing include smaller amounts relating to interest rates on loans for other ANSP (-0.04 ME2009) and EUROCONTROL costs (-0.1 ME2009). These amounts will be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission.</p>						



SPAIN CANARIAS: En-route charging zone

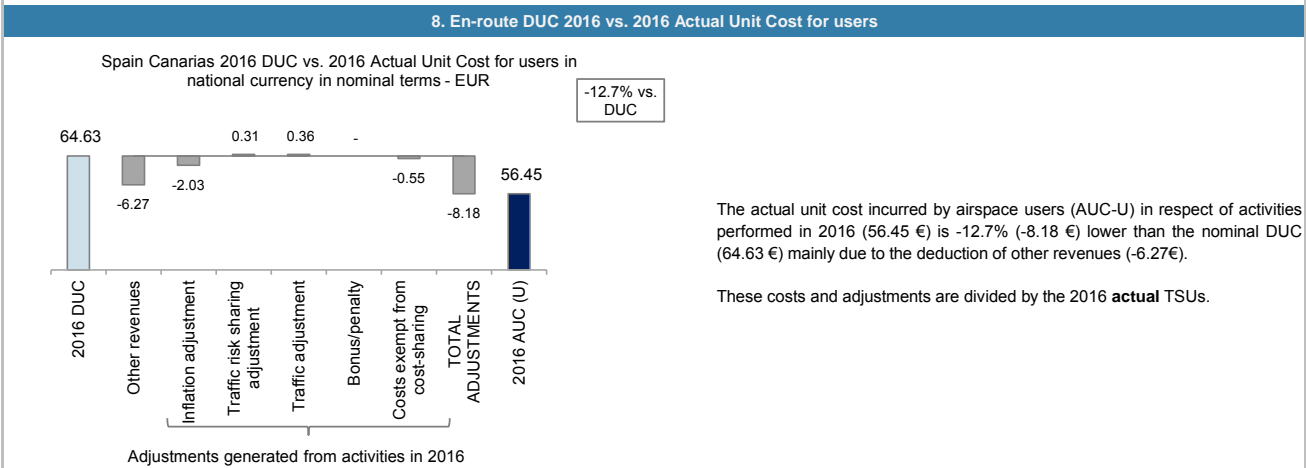
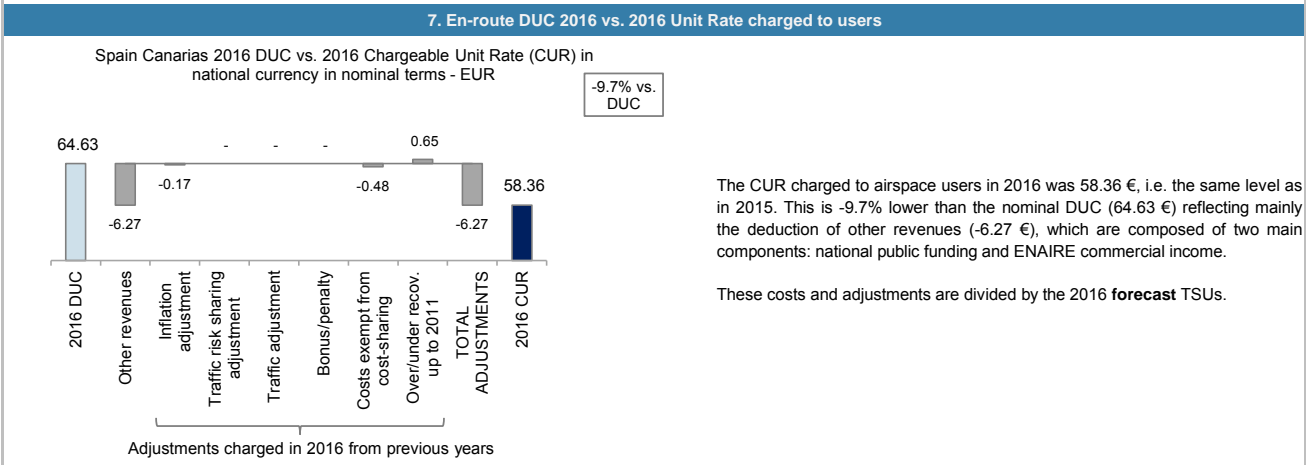
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	-17	-37			
	Taxation law	-469	-619			
	New cost item required by law	0	0			
	International agreements	-7	-95			
by entity	ATSP	-469	-619			
	Other ANSP	-17	-37			
	METSP	0	0			
	NSA/EUROCONTROL	-7	-95			
Total costs exempt from cost sharing		-493	-751			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



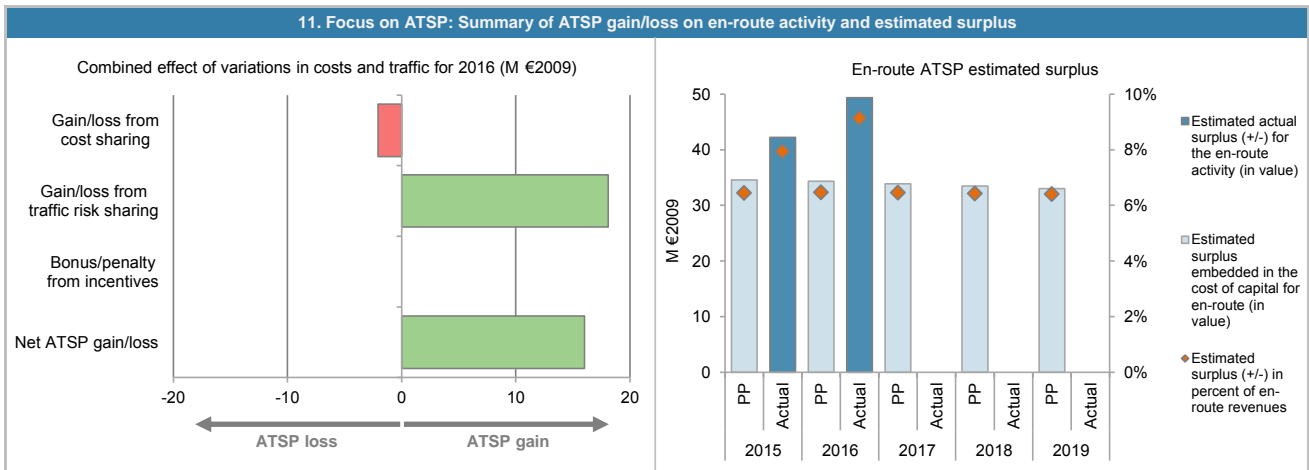
SPAIN: En-route ATSP (ENAIRE)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	536 016	531 160			
Actual costs for the ATSP	525 448	524 252			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	10 568	6 908			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-7 960	-8 979			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	2 608	-2 071			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.1%	7.5%			
Determined costs for the ATSP (PP) - based on actual inflation	546 337	547 892			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	3 344	18 098			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	5 952	16 026			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	662 856	653 138	639 297	625 967	612 676
Estimated proportion of financing through equity (in %)	76.1%	76.9%	77.8%	78.7%	79.7%
Estimated proportion of financing through equity (in value)	504 175	502 502	497 579	492 931	488 193
Estimated proportion of financing through debt (in %)	23.9%	23.1%	22.2%	21.3%	20.3%
Estimated proportion of financing through debt (in value)	158 680	150 635	141 718	133 036	124 483
Cost of capital pre-tax (in value)	37 615	37 382	36 908	36 455	35 998
Average interest on debt (in %)	1.9%	2.0%	2.1%	2.2%	2.4%
Interest on debt (in value)	3 057	3 049	3 020	2 993	2 964
Determined RoE pre-tax rate (in %)	6.9%	6.8%	6.8%	6.8%	6.8%
Estimated surplus embedded in the cost of capital for en-route (in value)	34 559	34 333	33 887	33 462	33 033
Overall estimated surplus (+/-) for the en-route activity	34 559	34 333	33 887	33 462	33 033
Revenue/costs for the en-route activity	536 016	531 160	524 599	520 447	515 378
Estimated surplus (+/-) in percent of en-route revenues	6.4%	6.5%	6.5%	6.4%	6.4%
Estimated ex-ante RoE pre-tax rate (in %)	6.9%	6.8%	6.8%	6.8%	6.8%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	683 007	646 922			
Estimated proportion of financing through equity (in %)	77.4%	75.4%			
Estimated proportion of financing through equity (in value)	528 950	487 988			
Estimated proportion of financing through debt (in %)	22.6%	24.6%			
Estimated proportion of financing through debt (in value)	154 057	158 934			
Cost of capital pre-tax (in value)	37 613	34 589			
Average interest on debt (in %)	0.9%	0.8%			
Interest on debt (in value)	1 356	1 248			
Determined RoE pre-tax rate (in %)	6.9%	6.8%			
Estimated surplus embedded in the cost of capital for en-route (in value)	36 257	33 341			
Net ATSP gain(+)/loss(-) on en-route activity	5 952	16 026			
Overall estimated surplus (+/-) for the en-route activity	42 209	49 368			
Revenue/costs for the en-route activity	531 400	540 278			
Estimated surplus (+/-) in percent of en-route revenues	7.9%	9.1%			
Estimated ex-post RoE pre-tax rate (in %)	8.0%	10.1%			

SPAIN: En-route ATSP (ENAIRE)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 ENAIRE en-route costs vs. PP

SPAIN CONTINENTAL

In 2016, ENAIRE actual en-route costs for Spain Continental are -1.5% (-6.8 M€2009) lower than planned, in real terms. Based on the June 2017 Reporting Tables, this results from the combination of:

- Higher than planned staff costs in real terms (+1.9%, or +6.0 M€2009). However, as highlighted in box 3, the lower than planned inflation index (-3.4 p.p.) is affecting the comparison of costs. When considering costs in nominal terms, actual staff costs are -1.2% lower than planned.
 - Significantly lower other operating costs in real terms (-20.4%, or -9.6 M€2009), mainly due to changes in the VAT legislation, which will result in a reimbursement of costs to the users, and reductions reflecting the austerity policy introduced by ENAIRE in previous years.
 - Lower than planned cost of capital in real terms (-7.4%, or -2.3 M€2009) due to lower actual average interest rate on debts (0.8% instead of 2.0%) and also "the above mentioned effects related to VAT [which] has still a small influence on costs".
 - Lower than planned depreciation costs in real terms (-2.2%, or -1.4 M€2009) due to "the above mentioned effects related to VAT [which] has still a small influence on costs".
- Smaller deviation is observed for exceptional costs (+2.9%, or +0.2 M€2009). However, considering nominal terms, the exceptional costs are lower than planned (-0.3%).

SPAIN CANARIAS

In 2016, ENAIRE actual en-route costs in real terms for Spain Canarias are slightly lower (-0.1%, or -0.1 M€2009) than planned. However, as highlighted in box 3 above, in nominal terms, actual en-route costs are lower (-3.2%, or -2.5 M€) than planned. This results from the combination of:

- Higher staff costs in real terms (+2.6%, or +1.2 M€2009), but slightly lower staff costs in nominal terms (-0.5%, or -0.3 M€).
 - Significantly lower other operating costs in real terms (-27.4%, or -2.1 M€2009). The main drivers of these reductions are the same as for Spain Continental (change in VAT legislation and ENAIRE austerity policy).
 - Higher depreciation costs in real terms (+11.9%, or +1.3 M€2009). "In 2016 the above mentioned effect related to indirect taxes has still a small influence on costs."
 - Lower cost of capital in real terms (-7.9%, or -0.5 M€2009) mainly reflecting lower actual average interest on debts (0.8%, instead of 2.0%) and "the above mentioned effects related to VAT [which] has still a small influence on costs".
- Smaller deviation in real terms is observed for exceptional costs (+2.6%, or +0.01 M€2009).

ENAIRE net gain/loss on en-route activity in 2016

As shown in box 9, ENAIRE generated an overall net gain of +16.0 M€2009 from en-route activity in Spain Continental and Spain Canarias en-route Charging Zones. This is a combination of two separate elements:

- a loss of -2.1 M€2009 arising from the cost-sharing mechanism (-1.6 M€2009 loss for Spain Continental and -0.5 M€2009 loss for Spain Canarias); and,
- a gain of +18.1 M€2009 arising from the traffic risk-sharing mechanism (+19.8 M€2009 gain for Spain Continental and -1.7 M€2009 loss for Spain Canarias).

No bonuses or penalties relating to the incentives on en-route capacity were reported since actual performance in 2016 was within the dead-band set in the PP for RP2.

ENAIRE overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus for en-route taking into account the net gain from the en-route activity mentioned above (+16.0 M€2009) and the surplus embedded in the actual cost of capital of both en-route charging zones (+33.3 M€2009) amounts to +49.3 M€2009 (9.1% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 10.1%, which is higher than the 6.8% planned in the PP.

Spain points out that, as part of the State charging policy, the unit rates for Spain Canarias are artificially reduced by other revenues, recorded under item 5.4 - National public funding in the en-route reporting tables (Route Table 2 ANSP), which ENAIRE does not receive. These "revenues" (i.e. reductions of the unit rates) are therefore financed by (or reducing) the ENAIRE overall surplus for en-route.

Considering the relevant amount of these "revenues" for 2016 (6.3 M€ or 5.8 M€2009), the overall estimated surplus for en-route amounts to +43.5 M€2009 (8.1% of the 2016 en-route revenues) and the resulting ex-post rate of return on equity is 8.9%.

SPAIN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Spain TCZ represents 08% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	ENAIRES	· Airports with fewer than 70,000 IFRs ATMs:		0	
· National currency:	EUR	· Airports with between 70,000 and 225,000 IFRs ATMs:		3	
· Number of airports in charging zone in 2016:	5,	of which:	· Airports with more than 225,000 IFRs ATMs:	2	
2. Terminal DUC monitoring at Charging Zone level					
Spain: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	99 791 938	99 110 291	97 634 776	96 511 608	95 268 935
Inflation %	0.8%	0.9%	1.0%	1.0%	1.1%
Inflation index (100 in 2009)	110.6	111.6	112.7	113.9	115.1
Real terminal costs (EUR2009)	90 258 778	88 844 426	86 617 459	84 755 676	82 792 565
Total terminal Service Units	641 951	646 445	653 556	663 359	671 983
Real terminal unit cost per Service Unit (EUR2009)	140.60	137.44	132.53	127.77	123.21
Spain: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	104 648 408	107 715 681			
Inflation %	-0.6%	-0.3%			
Inflation index (100 in 2009)	108.5	108.1			
Real terminal costs (EUR2009)	96 473 772	99 600 245			
Total terminal Service Units	680 549	741 105			
Real terminal unit cost per Service Unit (EUR2009)	141.76	134.39			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value	4 856 470	8 605 390		
	in %	4.9%	8.7%		
Inflation %	in p.p.	-1.4 p.p.	-1.2 p.p.		
Inflation index (100 in 2009)	in p.p.	-2.1 p.p.	-3.4 p.p.		
Real terminal costs (EUR2009)	in value	6 214 994	10 755 819		
	in %	6.9%	12.1%		
Total terminal Service Units	in value	38 598	94 660		
	in %	6.0%	14.6%		
Real terminal unit cost per Service Unit (EUR2009)	in value	1.16	-3.04		
	in %	0.8%	-2.2%		
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on Spain Terminal Charging Zone (TCZ) comprising 5 airports: Barcelona, Gran Canaria, Madrid Barajas, Malaga and Palma de Mallorca.</p> <p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (134.39 €2009) is lower (-2.2%) than the terminal DUC reported in the PP (137.44 €2009). This reflects the combination of higher than planned TNSUs (+14.6%) and higher than planned terminal costs in real terms (+12.1%, or +10.8 M€2009).</p> <p>Terminal service units Traffic risk sharing applies in "Spain terminal Charging Zone". The difference between actual and planned TNSUs (+14.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting additional terminal revenues are therefore shared between ENAIRES and the airspace users, with the gain retained by ENAIRES amounting to +3.8 M€2009. Considering the most recent STATFOR TNSUs forecasts (February 2017), it appears that the TNSUs are very likely to remain significantly higher than planned throughout RP2, under all STATFOR forecast scenarios. Indeed, if these forecasts materialise, the TNSUs will remain above the +10% threshold over 2017-2019. It is noteworthy that the traffic forecast used in the RP2 PP was rather cautious since it was below the STATFOR February 2014 low case scenario.</p> <p>Terminal costs In nominal terms, the 2016 actual terminal costs are +8.7% higher than planned. Since the actual inflation index is lower than planned (-3.4 p.p.), the actual terminal costs expressed in €2009 are +12.1% above the planned level. The overall difference between actual and planned costs for 2016 (+10.8 M€2009) is primarily driven by the higher than planned actual costs for ENAIRES (+14.3%, or +12.1 M€2009), as other entities achieved lower than planned costs, including AEMET (-17.4%, or -0.5 M€2009) and NSAs (-60.5%, or -0.9 M€2009). A detailed analysis of ENAIRES costs is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of -0.8 M€2009 to be reimbursed to airspace users in the following reference period(s), if deemed allowed by the European Commission. This corresponds to a reimbursement to users resulting from unforeseen changes in the national taxation (VAT) law.</p>					

SPAIN: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	14.3%
Other ANSPs	-
METSP	-17.4%
NSA	-60.5%
Total	12.1%

Costs by nature at ATSP level:

Staff	11.8%
Other operating costs	14.4%
Depreciation	35.8%
Cost of capital	30.2%
Exceptional items	4.0%
VFR exempted flights	-
Total	14.3%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	-747	-820			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	-747	-820			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		-747	-820			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Spain 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The CUR charged to airspace users in 2016 is 18.72 €. This is -87.8% lower than the nominal DUC (153.32 €) reflecting exclusively a deduction of other revenues (-134.60 €), which are composed of two main components: revenues from agreements with the airport manager regarding aerodromes service provisions for all airports in the charging zone and ENAIRE commercial income (publications, and minor technical and consulting activities).

These costs and adjustments are divided by the 2016 **forecast** TNSUs.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Spain 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

The actual unit cost incurred by airspace users (AUC-U) in respect of terminal activities performed in 2016 is negative (-0.53 €), as in addition to the significant deduction of other revenues (-134.60 €), all adjustments relating to 2016 are to be reimbursed to users through future unit rates (inflation, traffic and cost exempt from cost-sharing), and in total (-153.84 €) are greater than the 2016 DUC (153.32 €).

These costs and adjustments are divided by the 2016 **actual** TNSUs.

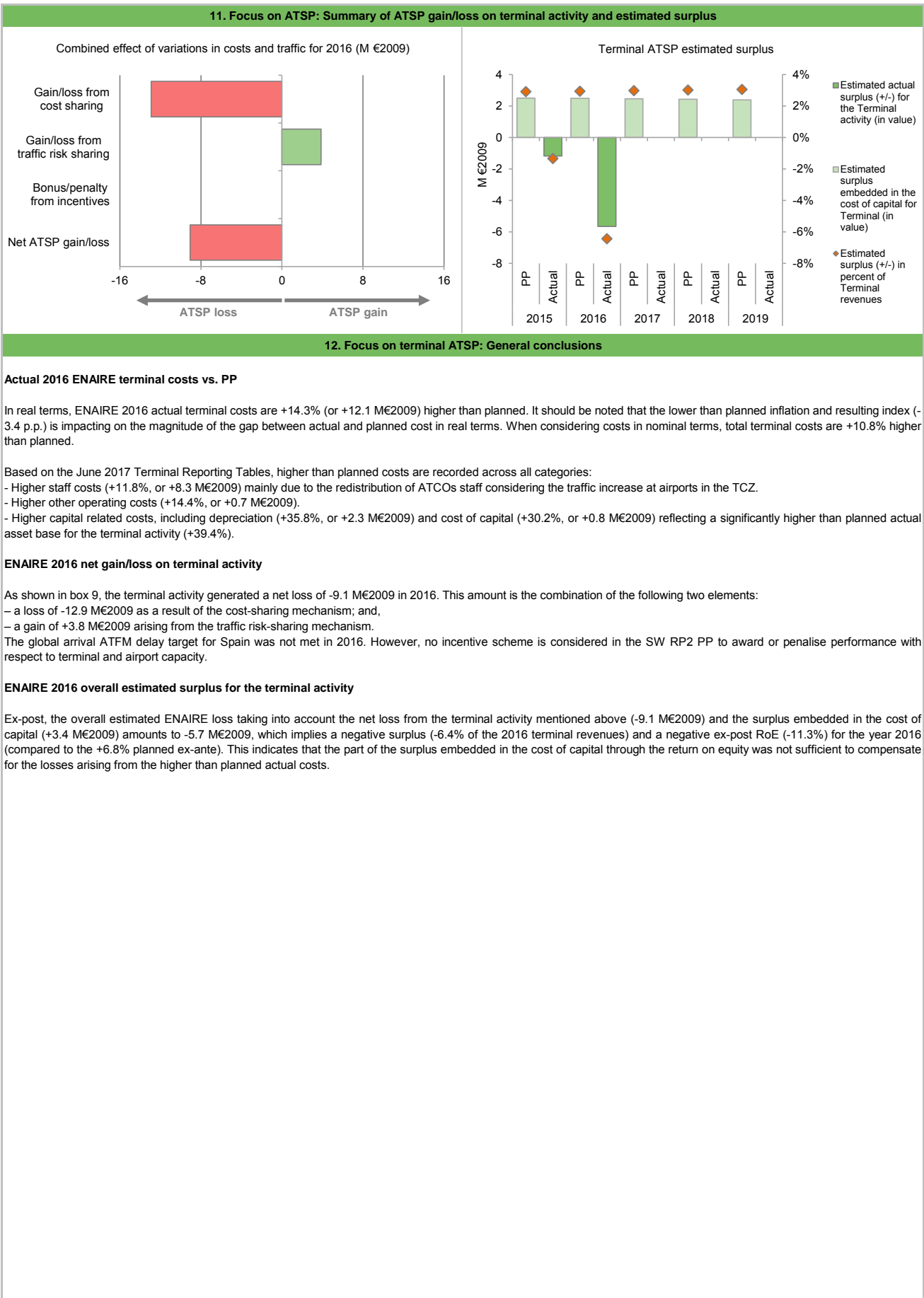
SPAIN: Terminal ATSP (ENAIRE)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	86 182	84 779			
Actual costs for the ATSP	92 985	96 876			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-6 803	-12 097			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	-747	-820			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-7 551	-12 917			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	6.0%	14.6%			
Determined costs for the ATSP (PP) - based on actual inflation	87 841	87 449			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	2 814	3 848			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-4 737	-9 069			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	48 175	47 460	46 439	45 463	44 494
Estimated proportion of financing through equity (in %)	76.1%	76.9%	77.8%	78.7%	79.7%
Estimated proportion of financing through equity (in value)	36 642	36 514	36 145	35 801	35 454
Estimated proportion of financing through debt (in %)	23.9%	23.1%	22.2%	21.3%	20.3%
Estimated proportion of financing through debt (in value)	11 533	10 946	10 295	9 662	9 040
Cost of capital pre-tax (in value)	2 734	2 716	2 681	2 648	2 614
Average interest on debt (in %)	1.9%	2.0%	2.1%	2.2%	2.4%
Interest on debt (in value)	222	222	219	217	215
Determined RoE pre-tax rate (in %)	6.9%	6.8%	6.8%	6.8%	6.8%
Estimated surplus embedded in the cost of capital for terminal (in value)	2 512	2 495	2 462	2 430	2 399
Overall estimated surplus (+/-) for the terminal activity	2 512	2 495	2 462	2 430	2 399
Revenue/costs for the terminal activity	86 182	84 779	82 555	80 710	78 746
Estimated surplus (+/-) in percent of terminal revenues	2.9%	2.9%	3.0%	3.0%	3.0%
Estimated ex-ante RoE pre-tax rate (in %)	6.9%	6.8%	6.8%	6.8%	6.8%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	67 014	66 165			
Estimated proportion of financing through equity (in %)	77.4%	75.4%			
Estimated proportion of financing through equity (in value)	51 898	49 910			
Estimated proportion of financing through debt (in %)	22.6%	24.6%			
Estimated proportion of financing through debt (in value)	15 115	16 255			
Cost of capital pre-tax (in value)	3 690	3 538			
Average interest on debt (in %)	0.9%	0.8%			
Interest on debt (in value)	133	128			
Determined RoE pre-tax rate (in %)	6.9%	6.8%			
Estimated surplus embedded in the cost of capital for terminal (in value)	3 557	3 410			
Net ATSP gain(+)/loss(-) on terminal activity	-4 737	-9 069			
Overall estimated surplus (+/-) for the terminal activity	-1 179	-5 659			
Revenue/costs for the terminal activity	88 249	87 807			
Estimated surplus (+/-) in percent of terminal revenues	-1.3%	-6.4%			
Estimated ex-post RoE pre-tax rate (in %)	-2.3%	-11.3%			

SPAIN: Terminal ATSP (ENAIRES)

Monitoring of terminal COST-EFFICIENCY for 2016



SPAIN: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs																							
Spain Continental: Data from RP2 Performance Plan																							
	2015D	2016D	2017D	2018D	2019D																		
Real en-route costs (EUR2009)	650 288 155	646 160 238	639 858 031	635 877 678	631 014 001																		
Real terminal costs (EUR2009)	90 258 778	88 844 426	86 617 459	84 755 676	82 792 565																		
Real gate-to-gate costs (EUR2009)	740 546 933	735 004 664	726 475 490	720 633 354	713 806 566																		
En-route share (%)	87.8%	87.9%	88.1%	88.2%	88.4%																		
Spain Continental: Actual data from Reporting Tables																							
	2015A	2016A	2017A	2018A	2019A																		
Real en-route costs (EUR2009)	636 822 195	633 469 371																					
Real terminal costs (EUR2009)	96 473 772	99 600 245																					
Real gate-to-gate costs (EUR2009)	733 295 967	733 069 616																					
En-route share (%)	86.8%	86.4%																					
Difference between Actuals and Planned (Actuals vs. PP)																							
	2015	2016	2017	2018	2019																		
Real gate-to-gate costs (EUR2009)																							
in value	-7 250 966	-1 935 048																					
in %	-1.0%	-0.3%																					
En-route share																							
in p.p.	-1.0%	-1.5%																					
2. Share of en-route and terminal in gate-to-gate actual costs (2016)																							
<p>In 2016, actual gate-to-gate ANS costs are -0.3% (-1.9 M€2009) lower than planned due to the combination of overall lower en-route costs (-2.0%, or -12.7 M€2009) shared between Continental (-12.6 M€2009) and Spain Canarias (-0.1 M€2009) charging zones, but higher terminal costs (+12.1%, or +10.8 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (86.4%) is 1.5 p.p. lower than planned in 2016 (87.9%), resulting from both lower than planned en-route costs and higher than planned terminal costs.</p> <p>For ENAIRE, the estimated "gate-to-gate" economic surplus in 2016 amounts to +43.7 M€ (see boxes 10 for the detailed analysis at charging zone level), corresponding to 7.0% of gate-to-gate ANS revenues.</p> <p>As explained in box 12 (ENAIRE overall estimated surplus for the en-route activity), considering other revenues that artificially reduced the en-route unit rate for Spain Canarias in 2016 (6.1% or 5.8 M€2009), the estimated "gate-to-gate" economic surplus in 2016 amounts to +49.5 M€2009, corresponding to 6.1% of gate-to-gate ANS revenues.</p>																							
<table border="1"> <caption>Share of en-route and terminal in gate-to-gate actual costs (2016)</caption> <thead> <tr> <th>Year</th> <th>En-route (%)</th> <th>Terminal (%)</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>83%</td> <td>17%</td> </tr> <tr> <td>2016</td> <td>85%</td> <td>15%</td> </tr> <tr> <td>2017</td> <td>82%</td> <td>18%</td> </tr> <tr> <td>2018</td> <td></td> <td></td> </tr> <tr> <td>2019</td> <td></td> <td></td> </tr> </tbody> </table>						Year	En-route (%)	Terminal (%)	2015	83%	17%	2016	85%	15%	2017	82%	18%	2018			2019		
Year	En-route (%)	Terminal (%)																					
2015	83%	17%																					
2016	85%	15%																					
2017	82%	18%																					
2018																							
2019																							
3. Technical notes on en-route and terminal information reported by Spain Continental																							

PRB Annual monitoring report 2016

Volume 2 – Local Overview

FAB UK IRELAND

Version: 1.1

Date: 9 October 2017

Effectiveness of Safety Management							
			2015 Value	2016 Value	2017 Value	2018 Value	2019 Target
Union-wide targets	at State level	For all MOs					C
	at ANSP level	For Safety Culture MO					C
		For all other MOs					D
FAB level	States / Regulatory authorities	For all MOs	B	B			
	ANSPs	For Safety Culture MO	D	D			
	ANSPs	For all other MOs	C	D			

Application of the severity classification of the Risk Analysis Tool (RAT)							
Ground Score			2015 Value	2016 Value	2017 Target	2018 Value	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%		100%
	Runway Incursions (RIs)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	100%			
Overall Score			2015 Value	2016 Value	2017 Target	2018 Target	2019 Target
Union-wide targets	Separation Minima Infringements (SMIs)				>= 80%	>= 80%	>= 80%
	Runway Incursions (RIs)				>= 80%	>= 80%	>= 80%
	ATM Specific Occurences (ATM-S)				>= 80%		100%
FAB level	Separation Minima Infringements (SMIs)		100%	100%			
	Runway Incursions (RIs)		100%	100%			
	ATM Specific Occurences (ATM-S)		100%	100%			

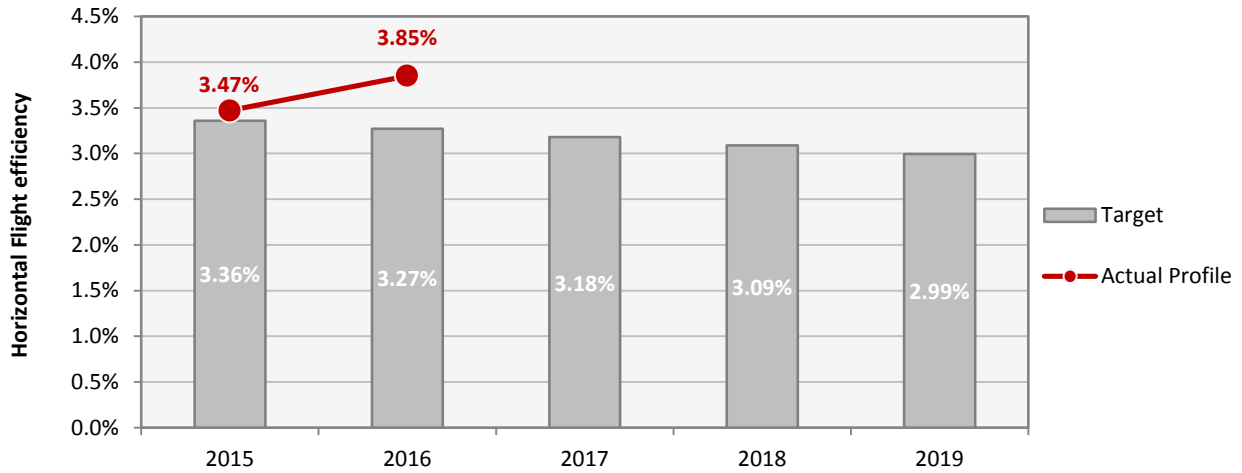
Observations

The 2019 EoSM target level is met in all EoSM Components/areas of the States with the exception of Safety Culture, where the lowest answer is Level "B". Note that Safety Culture is not verified by EASA.

UK-IRELAND FAB

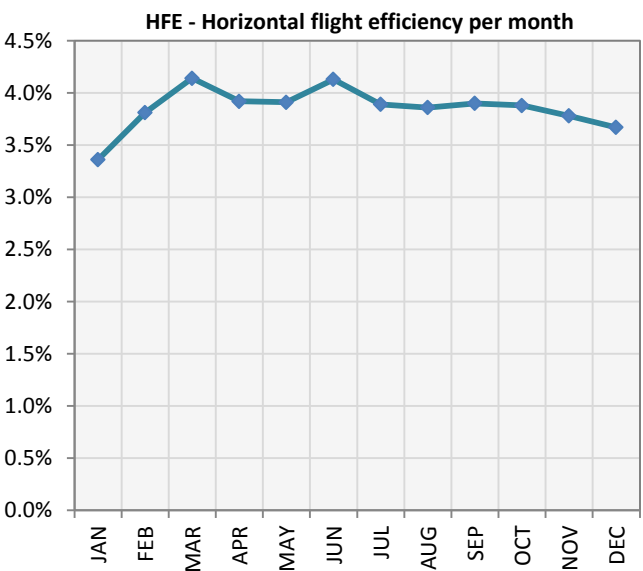
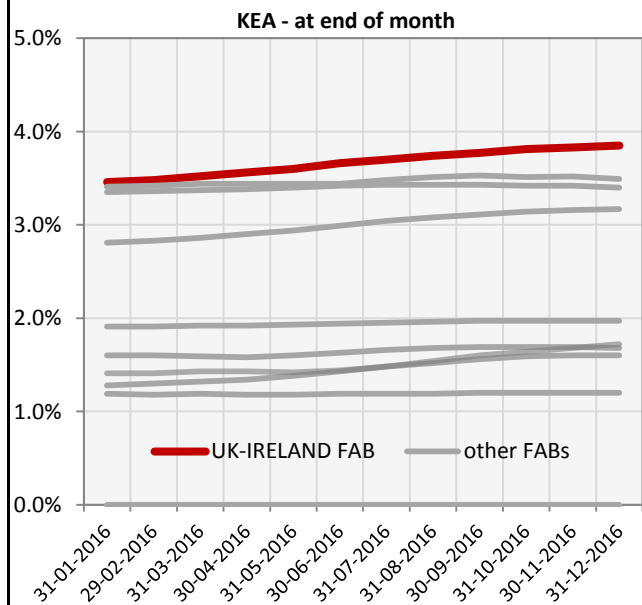
Monitoring of ENVIRONMENT for 2016

KEA					
	2015	2016	2017	2018	2019
FAB Target	3.36%	3.27%	3.18%	3.09%	2.99%
Actual performance	3.47%	3.85%			



Monthly KEA and HFE evolution in 2016

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA (at end of month)	3.46%	3.48%	3.52%	3.56%	3.60%	3.66%	3.70%	3.74%	3.77%	3.81%	3.83%	3.85%
HFE	3.36%	3.81%	4.14%	3.92%	3.91%	4.13%	3.89%	3.86%	3.90%	3.88%	3.78%	3.67%



HFE refers to the ratio of flown distance and achieved distance over all (portions of) trajectories in the month, while KEA is the ratio over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

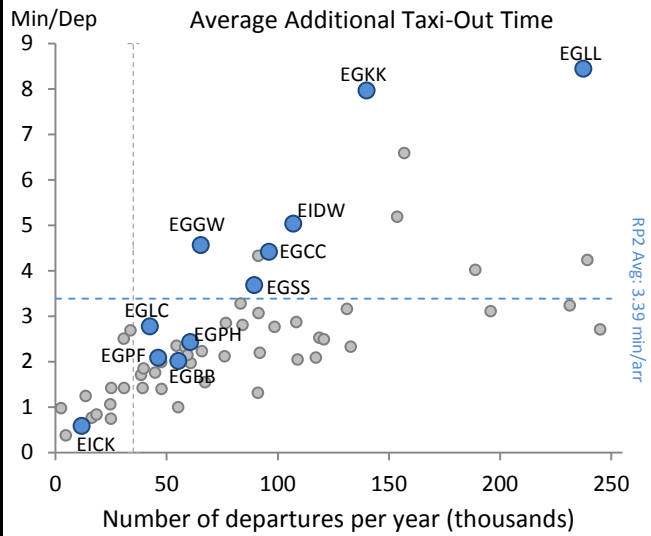
Observations

Cross border FRA projects implementation must be considered for the entire UK/IE FAB, together with cross-border operations with neighbouring FABs (FABEC, DK/SWE FAB and NEFAB).

1. Overview

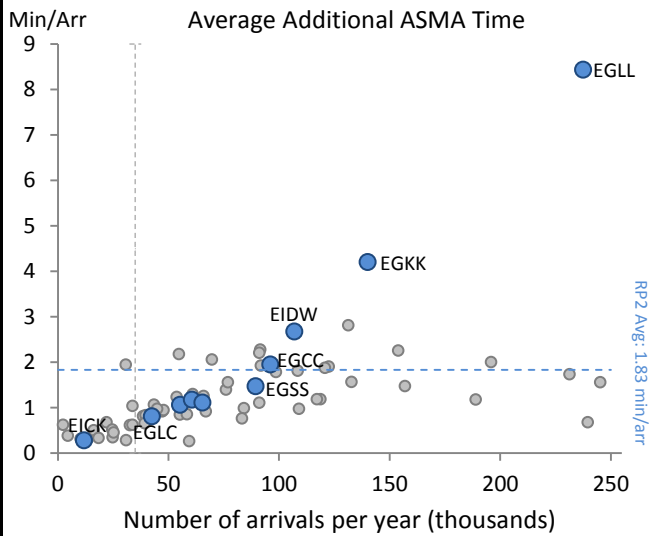
UK-Ireland FAB identifies 12 airports as subject to RP2 monitoring. Most of them have correctly established the Airport Data Flow, and only Shannon (EINN) is not providing any data yet. While the high level of capacity utilisation at some of these airports is recognised, the level of inefficiencies across UK-Ireland FAB negatively impacts the ANS contribution to the KPA Environment.

2. Additional Taxi-Out Time



In general the airports in the UK-Ireland FAB sit in the higher part of the scatter plot that relate the performance regarding additional taxi-out time to the traffic levels for all airports in RP2. This shows how, in terms of TXOT, the UK-Ireland FAB does not contribute adequately to the European performance.

3. Additional ASMA Time



Regarding additional time in terminal airspace, the airports within UK-Ireland FAB show a performance commensurate with their levels of traffic with the exception of London Gatwick (EGKK) and London Heathrow (EGLL) where the additional ASMA time is much higher than the values for similar airports in terms of movements, which shows the significant capacity constraints at these two airports.

UK-IRELAND FAB

Monitoring of CAPACITY for 2016

Minutes of ATFM en-route delay						
	2015	2016	2017	2018	2019	Observations
FAB Reference Value	0.25	0.26	0.26	0.26	0.26	
FAB Target	0.25	0.26	0.26	0.26	0.26	
Actual performance	0.08	0.30				

UK-Ireland FAB assessment of capacity performance

Target has not been achieved. ATFM delay per flight within Irish airspace was 0 mins; however capacity performance has degraded in UK airspace due to a number of factors including technical deployment programmes and unforeseen weather delay.

Two major projects were delivered into operational service in 2016: iTEC FDP into Prestwick Centre (a major system change to the operational platform), and LAMP 1A airspace development (the first deployment of a major airspace change programme in the South East of England). Both of these projects accrued significant delay during the implementation phase of the projects which were higher than anticipated.

A detailed transition plan for LAMP 1A was submitted to the Network Manager and updated as the project matured. Estimated delay was 10 000 minutes, however actual delay was c57 000 minutes, due to unforeseen issues in implementation concerning airspace complexities.

An initial estimate of the delay associated with the introduction of iTEC was c40 000 - c50000 minutes. This forecast was based on completing the transition within one month. Actual delay was c150 000 minutes due to a combination of technical (complexity) and timing (implementation) issues, which resulted in unplanned additional delay with the transition taking place during the peak summer period.

The delay associated with both of these projects (including staffing delays accrued during the required training elements, combined with normal capacity delays experienced during peak demand periods), and a record amount of (unforeseen) adverse weather delay in the reporting period, meant the 2016 reference value was not met. With further major technology programmes planned, it is possible that reference values going forward may also be at risk if additional unforeseen adverse weather delays continue during peak summer periods (as in 2016).

The current process for the attribution of A-CDM delay also adversely contributed to the UK's capacity performance. The UK-IRL FAB report that "The NM has concluded that A-CDM delay should not be attributed to ANSPs. However since no suitable mechanism currently exists to re-attribute the delay, it contributed 24,177 minutes of delay for NERL in 2016. Removing this delay would result in the 2016 score being reduced from 0.30 to 0.29 minutes of delay per flight."

Monitoring process for capacity performance

As part of the annual monitoring process, the NSAs monitor FAB capacity performance to inform whether financial incentives will be triggered.

The CAA monitors NATS' performance against en route delay targets (C1, C2, C3, C4) through a series of reporting requirements embedded in NERL's Licence. This includes:

- Condition 11 reports, submitted on a quarterly basis
- Service and Investment Plan, submitted on a twice yearly basis
- Annual Business Report, submitted once per year.

Within NATS there are detailed audited processes for monitoring and reporting delay in place, which are scrutinised at various levels. Additionally, NATS undertakes significant planning and modelling activity with regard to major project delivery and engages regularly with customers.

NATS advises that it has also established a new group that examines each applied ATFCM regulation during the preceding calendar month for both effectiveness and attribution, and identified improvement actions from this meeting are implemented locally.

Application of Corrective Measures for Capacity

No corrective actions have been required in Ireland. In the UK, a penalty of £423,000 will be applied due to underperformance in 2016, in accordance with the financial incentives for NERL performance/service quality relating to the capacity measures C2, C3 and C4.

During 2016 the UK NSA implemented an independent reviewer to monitor the implementation of NERL's technology and airspace programmes, who we expect to report throughout 2017 to the end of RP2. It is our expectation that the additional scrutiny of the independent reviewed will create more transparency and make NERL more accountable for delivery.

Capacity Planning

UK-Ireland FAB capacity reference values are based on the capacity plans of the ANSPs. Those reference values have been adopted as the UK-Ireland FAB targets, meaning that capacity planning and performance values are consistent.

Annual ANSP capacity planning with the Network Manager continues to mature and has improved significantly over the past few years. Additionally, NATS has developed a Strategic Capacity Model for remainder of RP2 with an RP3 model under development to address problematic airspace volumes.

Assessment of capacity performance

The deterioration of en route capacity performance in the UK Ireland FAB during 2016, to the extent that the FAB target was not achieved, is noted. It is noted that, in comparison to 2015 results, weather related delays increased by 95% to 185k minutes; delays attributed to ATC capacity increased by more than 400% to 178k; delays attributed to ATC staffing increased by 166% to 135k minutes, impacting FAB wide en route capacity performance by 0,07; 0,07; and 0,05 minutes respectively. It is noted that more than 110k minutes of delay (0,04 minutes per flight at FAB level) were attributed to the implementation and testing of a new FDP system, iTEC, and 63k minutes of delay (0,02 at FAB level) for the implementation of the LAMP airspace project. The Network Manager, based on the ANSP capacity plans contained within the NOP 2015-2019 and NOP 2016-2020 (which included iTEC and LAMP) did not expect any capacity shortfalls within UK Ireland FAB during RP2. It is noted that no corrective measures were listed in the UK Ireland FAB monitoring report to address the significant increase in delays attributed to ATC capacity nor the increase in delays due to ATC staffing issues. Finally, it is noted that the Network Manager, according to the latest ANSP capacity plans in NOP 2017-2021 does not expect any capacity shortfalls in UK Ireland FAB for the remainder of RP2.

En route Capacity Incentive Scheme

The UK Ireland FAB applied a common FAB wide en route capacity incentive scheme, described in Chapter 4 of the UK Ireland FAB performance plan, submitted in July 2015.

The incentive on each ANSP common to UK and Ireland would have the following characteristics:

- incentives calculated on a calendar year basis for and by paid in year n+2;
- no bonus payable to either NERL or the IAA for a relevant year unless the FAB target for that year had been met and similarly no penalty would be payable unless the FAB target for that year had been missed;
- the calculation of performance as for the KPI target for capacity except that it would only be for those causes listed in article 15(g) of the Charging Regulation;
- subject to the FAB performance being above or below target, any bonus or penalty would be then applied to each of the en route ANSPs based on their performance;
- there will be a par value for this measure for each ANSP consistent with the annual KPI values but adjusted to take account of the fact that it is limited to the causes listed in article 15(g) of the Charging Regulation;
- there will be a dead-band of -20% to +10% around the par value (so bonuses would only start to be paid when the delay was less than 80% of the par values and penalties when the delay was more than 110% of the par value);
- there would be a smooth sliding scale with the maximum penalty to be paid where delay is at 150% and a maximum bonus at 40% of the par value.

The FAB target for the incentive scheme was set as 0.26 minutes per flight.

Result of FAB Capacity Incentive Scheme

FAB target for en route capacity 0,26 minutes per flight.
Actual FAB value was 0,30 minutes per flight.

Ireland

1% of 2015 en route revenue, in the event the bonus/penalty was payable. However, the incentive mechanism provided that no bonus will be payable to either NERL or the IAA for a relevant year unless the FAB target for that year has been met and similarly no penalty will be payable unless the FAB target for that year has been missed.

Overall FAB performance, as indicated by scores above, does not allow for a bonus to be granted for 2016. In respect of Ireland, there is no penalty to be calculated.

United Kingdom

No more than 0.25% of ANSP en route revenue; for 2016 the actual penalty applied was 0.05% of ANSP revenue. (See specific section on UK for further details.)

Update on Military dimension of the plan

The only updated information regarding the Military Dimension of the plan is a statement that "... underpinning J&I [Joint and Integrated Concept] at the regulatory level, the Ministry of Defence also seconds staff to the CAA, in addition to embedding its Airspace and ATM team within CAA offices to ensure maximum cooperation.

Observations on Military dimension of the plan

The PRB notes that no information has been provided on how closer civil and military cooperation and coordination has led to greater capacity for general air traffic.

Application of FUA

Ireland

FUA has been fully implemented in Irish airspace since 2010. The concept of FUA in Ireland is governed by the following principles:

- (a) The Application of Flexible Use of Airspace (FUA) in Ireland Policy Document. The purpose of this document is to describe how FUA will be implemented effectively in Ireland in accordance with international and national requirements and structures.
- (b) Coordination between Civil and Military authorities is organised at strategic, pre-tactical and tactical levels of airspace management through established agreements (Irish Civil/Military Letter of Agreement [LoA]) and procedures to increase safety, airspace capacity and to improve the efficiency and flexibility of aircraft operations
- (c) Ireland has established the National Airspace Policy Body (NAPB) which is a permanent body for Strategic Airspace Management policy, planning and co-ordination. The NAPB consists of the Chief Executive, Irish Aviation Authority (CX IAA), the General Officer Commanding Air Corps (GOC Air Corps) and representatives of the Secretaries General of Department of Transport, Tourism and Sport (DTTAS) & Department of Defence (DoD). The NAPB meets annually or more frequently if deemed necessary, and is supported by the Standing Civil Military Air Navigation Committee (StaCMAN) which will provide expert advice to the NAPB, develop the necessary procedures and practices and implement decisions made by the NAPB. NAPB may delegate certain tasks and responsibilities to StaCMAN as appropriate.
- (d) The Standing Civil Military Air Navigation Committee (StaCMAN) meets at least four times per year. StaCMAN consists of representatives from Safety Regulation Authority (SRD), National Supervisory Authority (NSA), Air Navigation Services (IAA ANS), Irish Air Corps (Mil - regulatory, flight operations, army and naval service activity) and any others as appropriate.
- (e) NAPB establishes and authorises joint civil/military Airspace Management Cells (AMCs) to conduct day-to-day airspace allocation and management. Procedures are established through Signed Letter of Agreement on Coordination Procedures between Airspace Management Cells (AMCs) between UK NATS Ltd, Airspace management Cell UK and Irish Aviation Control Centres in respect of cross-border/FIR airspace structures and promulgation of information.
- (f) Level III, roles, responsibilities, policies and procedures are part of separate Civil Military LOA's as approved by NAPB. Consistency between airspace management, air traffic flow management (ATFM) and air traffic services is established and maintained at the 3 levels of airspace management listed in point (b) above, in order to ensure efficiency in airspace planning, allocation and use, for the benefit of all airspace users.
- (g) An airspace reservation for exclusive or specific use by categories of users is of a temporary nature and is applied only for limited periods of time which are based on actual use and which are released as soon as the activity that caused its establishment ceases. Here Ireland applies the Irish Danger Areas LoA and Temporary Airspace. The LoA provides for the earlier than planned release of this airspace on occasions when the military activity ends earlier than planned. While the Temporary Airspace outlines the specific conditions that airspace may be designated as TRA/TSA:
- In the interest of safety within the Irish Aviation system; or
 - In the interest of national security; or
 - For any other reason in the public interest
- (h) Ireland cooperates as is appropriate for the efficient and consistent application of the concept of FUA across National borders and/or the boundaries of Flight Information Regions (FIRs) and in particular, addresses cross border activities. This cooperation covers all relevant legal, operational and technical issues
- (i) Air Traffic Service units and airspace users collaborate to make the best use of available airspace.

United Kingdom

The UK fully embraces the FUA concept, and applies it in accordance with the European Route Network Improvement Plan Airspace Management Handbook. This and other European Commission Regulations are incorporated into the UK Airspace Management Manual (CAP740), where in concert with the AMC a fully joint and integrated approach is undertaken. The current focus is on incorporating Special Use Airspace (an overarching term incorporating all types of airspace that could be used for military purposes) into AMC Managed Areas for maximum impact and efficiency. The AMC UK is looking to take responsibility for more Non-AMC Managed Areas, incorporating them into the system. Coupled with robustly investigative ASM Tools (such as LARA) to assist in the application of FUA, this creates the most efficient use of the airspace through dynamic time-sharing. This flexible approach looks to minimise the periods when airspace is required to be segregated. The UK High Level Airspace Policy Body (HLAPB) has a constant dialogue and excellent working relationship with MoD, where DA usage and handbacks are monitored on a monthly basis with feedback constantly given to military users with a vision to maximise the use of booked segregated airspace, or to ensure it is handed back in a timely manner to allow it to be reallocated via UUP rather than purely tactically. This joint and integrated approach is prevalent throughout all 3 levels of UK ASM, and applied in national and FAB LoAs.

Observations of the Application of FUA

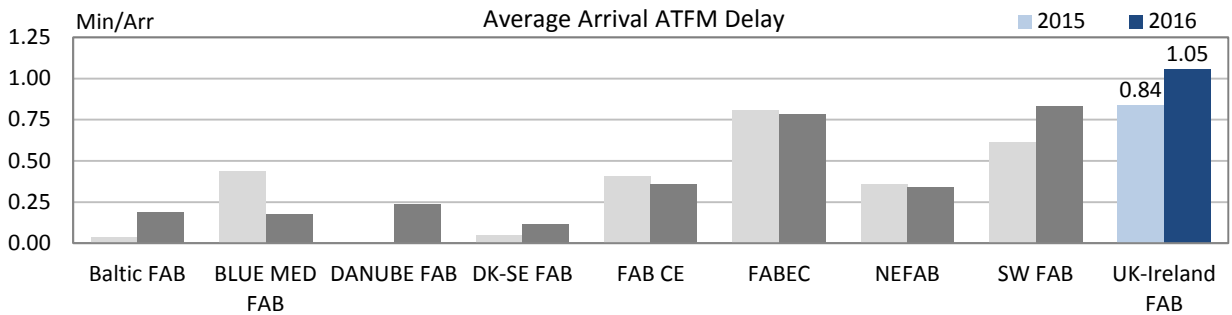
The update of information from the UK Ireland FAB is appreciated, and in particular the UK explanation of the feedback loop between civil and military stakeholders to provide the optimum benefit for airspace users.

1. Overview

UK-Ireland FAB exceeds the European the average on arrival ATFM delay of 0.67 min/arr. by more than 56% resulting in 1.05 min/arr.

Next to FABEC and SW FAB, UK-Ireland FAB performance influences the European average significantly. Efforts are required to reduce the high level of arrival ATFM delay.

2. Arrival ATFM Delay



Across Europe, UK-Ireland FAB achieves the worst performance in terms of arrival ATFM delay (i.e. 1.05 min/arr.). This is strongly driven by the performance at London airports.

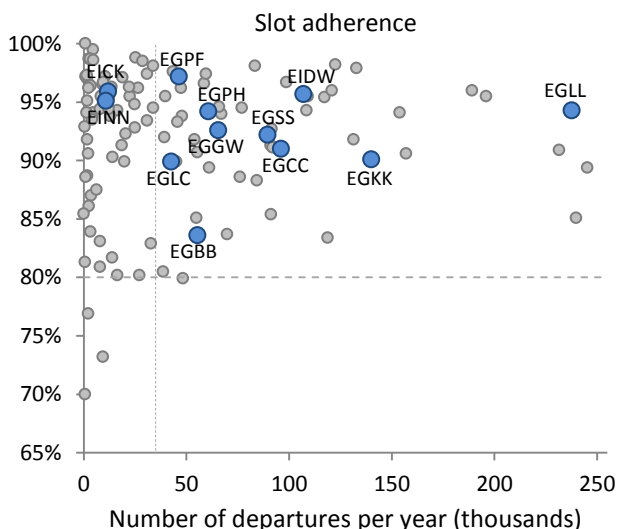
3. Arrival ATFM Delay – National Targets and Incentive Schemes

The UK-Ireland FAB performance plan establishes a national target on arrival ATFM delay for the United Kingdom and Ireland. The targets are consistent with the observed historic performance / performance at the beginning of the reference period. The United Kingdom established a stepwise decreasing target to induce high performance vis-à-vis the expected traffic growth. Ireland works with a stepwise increasing target to balance limitations due to the absence of airport infrastructure related enhancements with the expected traffic growth.

While Ireland meets the national target on arrival ATFM delay in 2016, United Kingdom shows a delay 0.46 min/arr. higher than its target.

The UK-Ireland FAB performance plan presents no incentive scheme for the national target on arrival ATFM delay.

4. ATFM Slot Adherence



Airports in the UK-Ireland FAB show very good performance regarding the adherence to ATFM slots, with values at or 90% and even above 95% in several cases. The only exception is Birmingham that ranges well below the 85% threshold.

5. Pre-departure Delay

The Airport Operator Data Flow is implemented at 9 of the 12 airports subject to RP2 monitoring in the UK-Ireland FAB. However the number of delayed flights with no attributed delay causes, and/or the use of ambiguity codes vary widely. Accordingly in some cases the indicator is not representative and is disregarded (i.e. n/a label in the table in the appendix) and in the rest of airports the presented value should be further validated.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

Ireland

Version: 1.1

Date: 9 October 2017

IRELAND

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	79	C	D	D	C	B
IAA	92	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	IAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	7	0
Occurrence reporting and Investigation	2	0
TOTAL	18	0
IAA	Number of questions answered	
	YES	NO
Policy and its implementation	13	0
Legal/Judiciary	3	0
Occurrence reporting and Investigation	7	1
TOTAL	23	1

Observations
<p>The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.</p> <p>All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.</p>

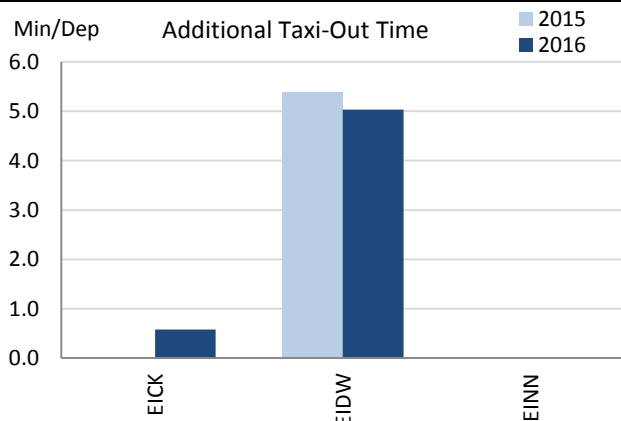
IRELAND

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

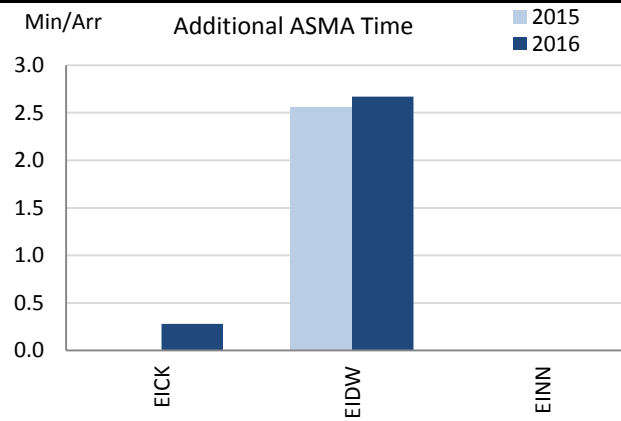
Ireland includes 3 airports under RP2 Monitoring. After the successful implementation of the Airport Operator Data Flow at Cork airport, Shannon is the only remaining airport that does not provide the required data for the monitoring. Ireland shall empower the airport reporting entity at Shannon (EINN) to establish the Airport Operator Data Flow and/or address the remaining data issues. Both Dublin and Cork have experienced a significant increase in traffic in 2016, especially Dublin with 8.5% more traffic than in 2015.

2. Additional Taxi-Out Time



Despite the increase in traffic, a half a minute reduction in additional taxi-out times can be observed at Dublin airport in 2016, driven by a significant reduction of these times in the last 3 months of the year compared to 2015. Nevertheless, this value of ATXOT at EIDW is still the highest amongst European airports with similar share of traffic. The Irish NSA reports that this is the result of infrastructure deficiencies at the aerodrome, with several bottlenecks in the manoeuvring area which restrict the service providers' ability to deal efficiently with departure peaks. The lack of a second runway and the lack of rapid exit taxiways on the existing runway also contribute.

3. Additional ASMA Time



Regarding additional time in the terminal airspace, Dublin shows slightly higher value than in 2015 and also half a minute above similar airports in terms of movements. According to the Irish NSA, any arrival congestion at EIDW is a result of the airport operating at or close to capacity for long periods, infrastructure deficiencies, potentially inefficient slot allocation and weather related factors. The additional time may also be related to the use of Point Merge, which has shown benefits reducing fuel consumption and Co2 emissions. Irish NSA also estimates ASMA will increase with the increase in traffic.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Cork	EICK	n/a	0.58				n/a	0.28			
Dublin	EIDW	5.39	5.03				2.56	2.67			
Shannon	EINN	n/a	n/a				n/a	n/a			

IRELAND

Monitoring of CAPACITY for 2016

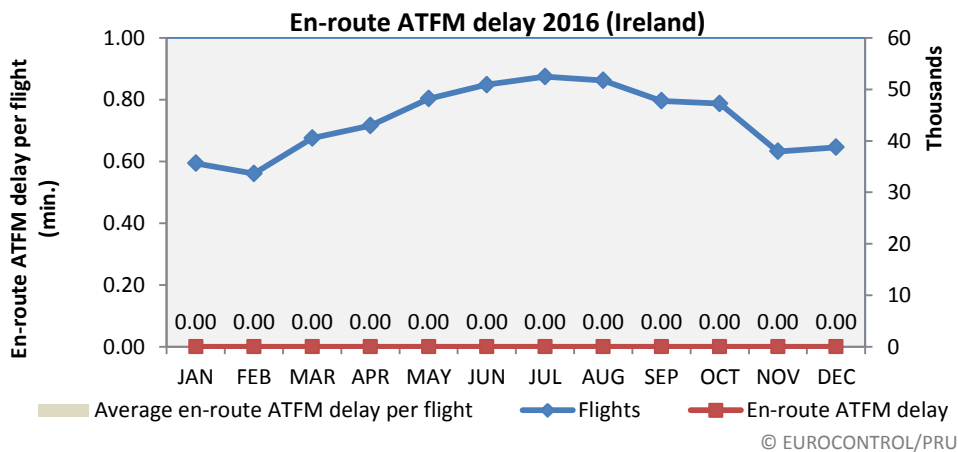
En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.13	0.13	0.14	0.14	0.14	Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-						
Actual performance	0.00	0.00				

National capacity incentive scheme

1% of 2015 en route revenue, in the event the bonus/penalty was payable. However, the incentive mechanism provided that no bonus will be payable to either NERL or the IAA for a relevant year unless the FAB target for that year has been met and similarly no penalty will be payable unless the FAB target for that year has been missed.

The overall FAB performance 0,30 minutes per flight instead of 0,26, does not allow for a bonus to be granted for 2016 - but penalties may be due for the ANSPs not achieving their respective target. In respect of Ireland, even though it achieved zero delay for airspace users, there is no bonus to be calculated. However, by achieving or surpassing the national target, Ireland is not liable for any penalties in 2016.

Observations regarding national capacity performance



En-route ATFM delay per flight (Ireland)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The excellent en route capacity performance in Ireland during 2016, and the positive contribution both to the UK - Ireland FAB and the Union-wide target for en route capacity is noted. It is noted that the Network Manager does not expect any capacity problems in Ireland for the remainder of RP2.

Planning and Effective Use of CDRs

Ireland did not provide any data. There are no CDRs in Ireland.

Observations on Planning and effective Use of CDRs

The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

Ireland did not provide any data on this indicator for airspace allocated via the AUP process. Ireland did allocate airspace via the UUP process with an effective usage of 88%.

Observations on Effective booking procedures

Historically, Ireland has stated that military operations and training does not impact either ATC capacity or available route options for GAT traffic.

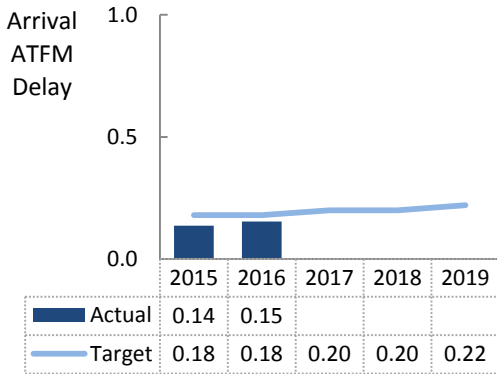
IRELAND

Monitoring of Airports Contribution to CAPACITY for 2016

1. Overview

Ireland achieves a remarkable performance in terms of ANS contributions to capacity at airports. Ireland identifies 3 airports as subject to RP2. The national target on arrival ATFM delay is fully met by the Irish airports for the second year in a row and all 3 airports show best-in-class performance concerning the adherence to ATFM slots. At the time being, the Airport Operator Data Flow is implemented at 2 airports in Ireland (EIDW and EICK). Nonetheless, validation of the reported delay is required due to the high share of unexplained delay.

2. Arrival ATFM Delay



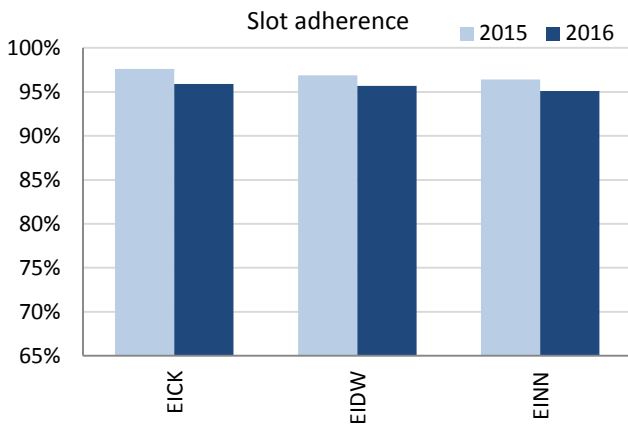
In Ireland, only Dublin presents arrival ATFM delay, mainly attributed to weather. There is a slight increase with respect to 2015 at EIDW (2015: 0.17 min/arr. vs 2016: 0.19 min/arr.) which has a marginal impact on the national average evolution.

3. Arrival ATFM Delay – National Target and Incentive Scheme

Although the target is met at national level, the actual arrival ATFM delay at Dublin in 2016 is just above the reference value according to the breakdown per airport in the PP.

The UK-Ireland FAB performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for Ireland.

4. ATFM Slot Adherence



The performance regarding ATFM slot adherence at the 3 Irish airports under RP2 monitoring has decreased by an average 1%. Despite this, these airports still best-in-class performance with values above the 95% threshold.

5. Pre-departure Delay

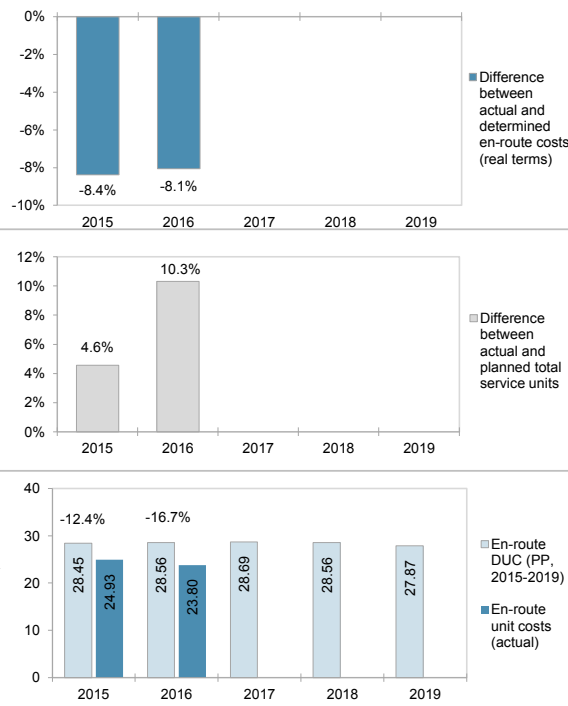
The high share of pre-departure delay attributed to ambiguity codes does not allow for the calculation of the indicator at Cork (EICK). At Dublin this share is lower, but the presented ATC pre-departure delay (0.66 min/dep.) also requires further validation.

6. Appendix																
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data																
AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Cork	EICK	0.00	0.00				97.6%	95.9%				n/a	n/a			
Dublin	EIDW	0.17	0.19				96.9%	95.7%				0.53	0.66			
Shannon	EINN	0.00	0.00				96.4%	95.1%				n/a	n/a			

IRELAND: En-route charging zone

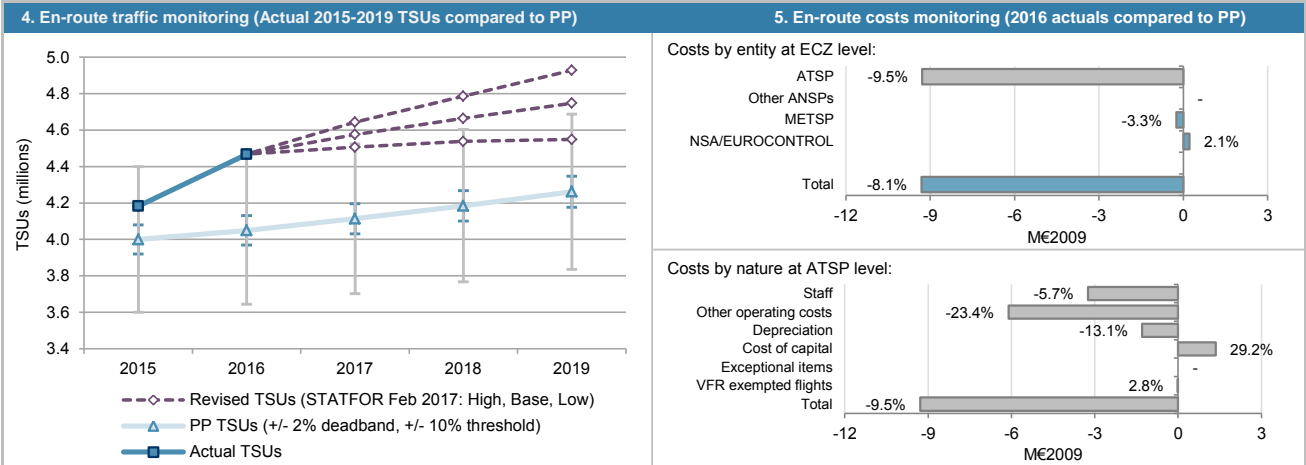
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> · Ireland ECZ represents 1.9% of the SES en-route ANS determined costs in 2016 · ATSP: IAA · FAB: UK-Ireland FAB · National currency: EUR 						
2. En-route DUC monitoring at Charging Zone level						
Ireland: Data from RP2 Performance Plan (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal EUR)		118 046 200	121 386 700	125 595 100	129 364 400	130 778 800
Inflation %		1.1%	1.2%	1.4%	1.7%	1.7%
Inflation index (100 in 2009)		103.7	105.0	106.4	108.2	110.1
Real en-route costs (EUR2009)		113 811 728	115 644 664	118 001 964	119 511 684	118 798 780
Total en-route Service Units		4 000 000	4 049 624	4 113 288	4 184 878	4 262 135
Real en-route unit cost per Service Unit (EUR2009)		28.45	28.56	28.69	28.56	27.87
Ireland: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal EUR)		106 657 766	108 543 638			
Inflation %		0.0%	-0.2%			
Inflation index (100 in 2009)		102.3	102.1			
Real en-route costs (EUR2009)		104 273 918	106 330 301			
Total en-route Service Units		4 182 450	4 467 595			
Real en-route unit cost per Service Unit (EUR2009)		24.93	23.80			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal EUR)	in value	-11 388 434	-12 843 062			
	in %	-9.6%	-10.6%			
Inflation %	in p.p.	-1.1 p.p.	-1.4 p.p.			
	in p.p.	-1.4 p.p.	-2.9 p.p.			
Real en-route costs (EUR2009)	in value	-9 537 810	-9 314 363			
	in %	-8.4%	-8.1%			
Total en-route Service Units	in value	182 450	417 971			
	in %	4.6%	10.3%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-3.52	-4.76			
	in %	-12.4%	-16.7%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (23.80 €2009) is -16.7% lower than planned in the PP (28.56 €2009). This difference results from the combination of higher than planned TSUs (+10.3%) and lower than planned en-route costs (-8.1%, or -9.3 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (+10.3%) exceeds the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of en-route revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +4.4 M€2009.</p> <p>It is noteworthy that the traffic forecast used in the Irish PP for RP2 was rather prudent since it was between STATFOR (February 2014) low and base scenarios. When considering the most recent STATFOR forecast (February 2017), it appears that traffic is likely to remain significantly higher than planned throughout RP2.</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -10.6% lower than planned. However, since the actual inflation index is also lower than planned (-2.9 p.p.), actual en-route costs are -8.1% below plans when expressed in €2009.</p> <p>The lower than planned en-route costs in real terms are driven by reductions for the IAA (-9.5% or -9.3 M€2009). Smaller deviations are observed for the MET Service Provider (-3.3% or -0.3 M€2009) and the NSAEUROCONTROL (+2.1% or +0.2 M€2009). The IAA being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.</p> <p>Costs exempt from cost-sharing are reported for a total amount of -0.6 M€2009 and correspond to lower than planned EUROCONTROL costs. These costs will be eligible for carry-over (reimbursed to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						



IRELAND: En-route charging zone

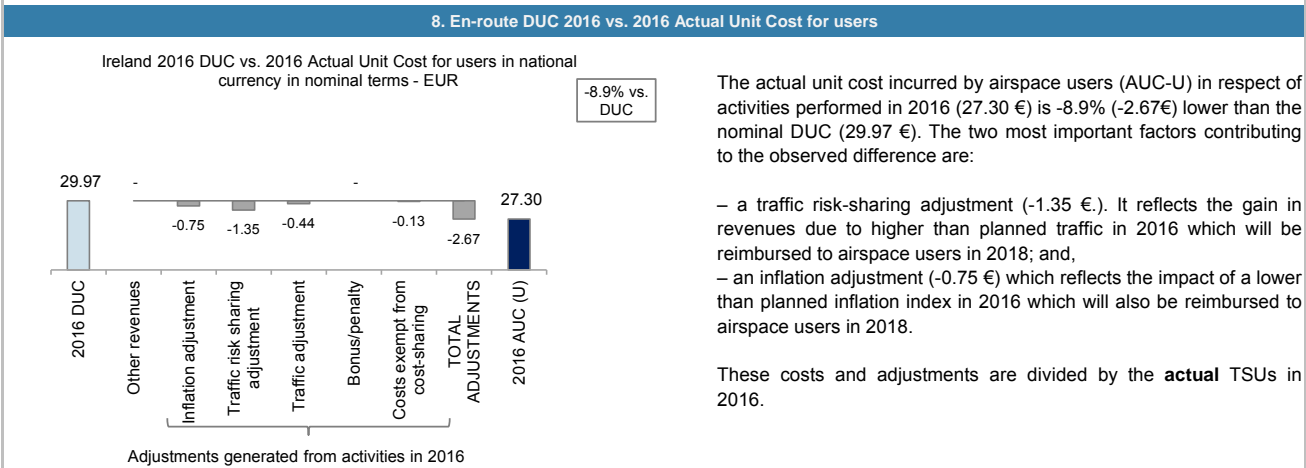
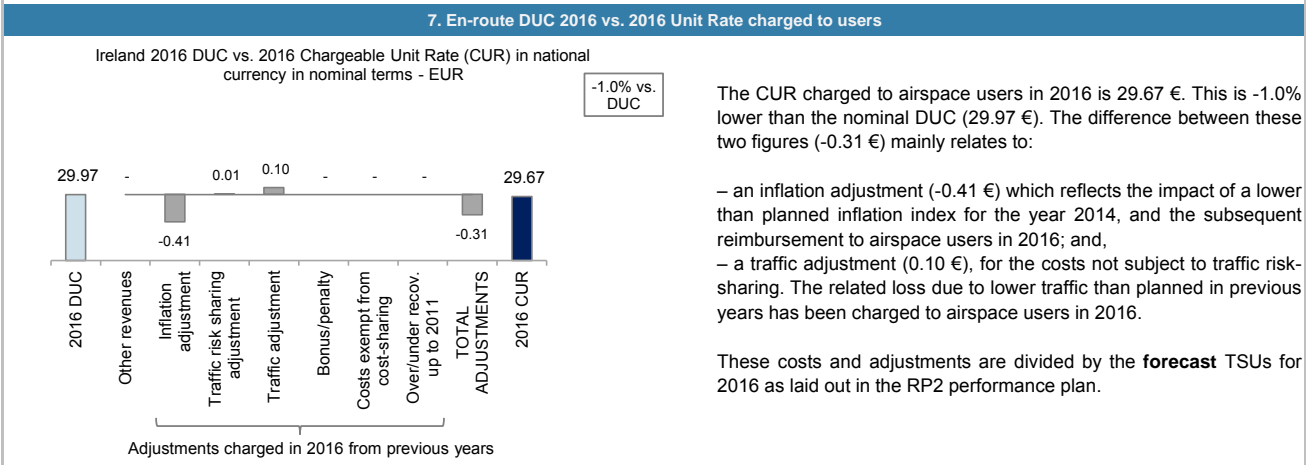
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-247	-567			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-247	-567			
Total costs exempt from cost sharing		-247	-567			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



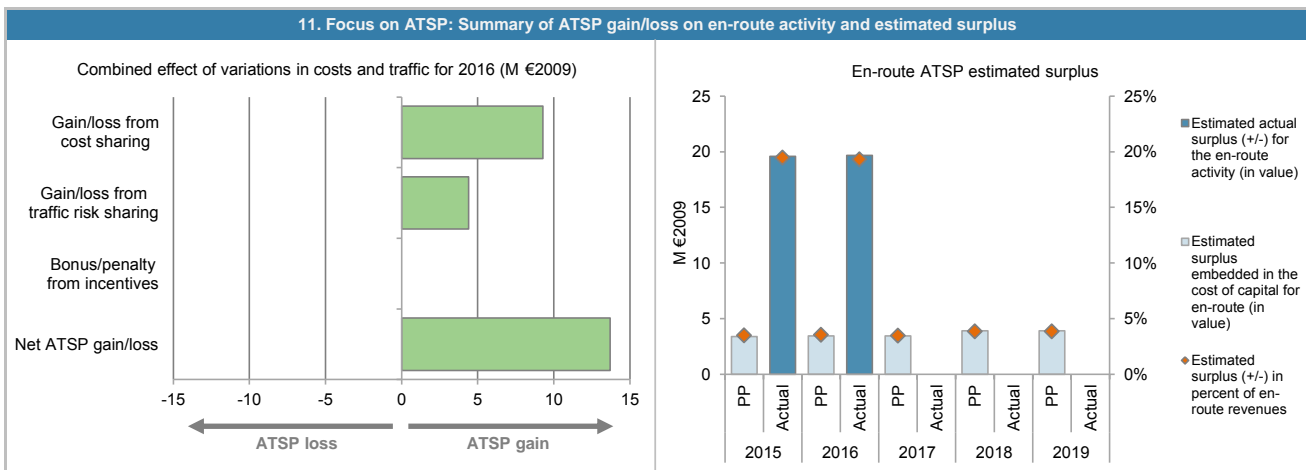
IRELAND: En-route ATSP (IAA)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	96 844	97 378			
Actual costs for the ATSP	87 495	88 091			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	9 349	9 287			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	9 349	9 287			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	4.6%	10.3%			
Determined costs for the ATSP (PP) - based on actual inflation	98 202	100 129			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	2 719	4 406			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	1 014	0			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	13 081	13 693			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	63 266	64 174	63 062	69 602	69 651
Estimated proportion of financing through equity (in %)	50.1%	49.9%	49.7%	49.4%	49.5%
Estimated proportion of financing through equity (in value)	31 674	32 047	31 358	34 418	34 444
Estimated proportion of financing through debt (in %)	49.9%	50.1%	50.3%	50.6%	50.5%
Estimated proportion of financing through debt (in value)	31 592	32 126	31 704	35 184	35 207
Cost of capital pre-tax (in value)	4 492	4 621	4 667	5 359	5 363
Average interest on debt (in %)	3.5%	3.6%	3.8%	4.1%	4.1%
Interest on debt (in value)	1 106	1 157	1 205	1 443	1 443
Determined RoE pre-tax rate (in %)	10.7%	10.8%	11.0%	11.4%	11.4%
Estimated surplus embedded in the cost of capital for en-route (in value)	3 386	3 464	3 462	3 917	3 920
Overall estimated surplus (+/-) for the en-route activity	3 386	3 464	3 462	3 917	3 920
Revenue/costs for the en-route activity	96 844	97 378	99 417	101 495	101 272
Estimated surplus (+/-) in percent of en-route revenues	3.5%	3.6%	3.5%	3.9%	3.9%
Estimated ex-ante RoE pre-tax rate (in %)	10.7%	10.8%	11.0%	11.4%	11.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	60 751	55 239			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	60 751	55 239			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	6 494	5 971			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	10.7%	10.8%			
Estimated surplus embedded in the cost of capital for en-route (in value)	6 494	5 971			
Net ATSP gain(+)/loss(-) on en-route activity	13 081	13 693			
Overall estimated surplus (+/-) for the en-route activity	19 575	19 664			
Revenue/costs for the en-route activity	100 576	101 784			
Estimated surplus (+/-) in percent of en-route revenues	19.5%	19.3%			
Estimated ex-post RoE pre-tax rate (in %)	32.2%	35.6%			

IRELAND: En-route ATSP (IAA)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 IAA en-route costs vs. PP

In 2016, IAA actual en-route costs are -9.5% (-9.3 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided with the en-route Reporting Tables, the main drivers for the observed difference are:

- lower staff costs (-5.7% or -3.2 M€2009), mainly due to higher than expected number of departures, retirements and recruitment occurring later than expected;
- lower other operating costs (-23.4% or -6.1 M€2009), mainly due to savings across a range of technical and administrative expenses;
- lower depreciation costs (-13.1% or -1.3 M€2009), mainly due to changes in the timing of investment projects; and,
- a higher cost of capital (+29.2% or +1.4 M€2009) resulting from a combination of a lower asset base with a higher weighted average cost of capital (since the IAA had no debt in 2016).

The lower than planned depreciation costs and asset base are the consequence of a significant capex underspend in 2016 (-68.6%, or -11.8 M€2009).

It is also noteworthy that, as for 2015, the significant increase in other operating costs that was foreseen in the PP (+11.1% in real terms between 2014D and 2016D) did not materialise. No information on the drivers of the planned increase was provided in the PP. It is therefore difficult to interpret whether the observed deviation between planned and actual costs only reflects genuine savings or also corresponds to the postponement or the cancellation of a large project foreseen in the PP.

IAA net gain/loss on en-route activity in 2016

As shown in box 9, IAA generated a net gain of +13.7 M€2009 on the en-route activity. This is a combination of the following elements:

- a gain of +9.3 M€2009 arising from the cost-sharing mechanism; and,
- a gain of +4.4 M€2009 arising from the traffic risk-sharing mechanism.

In 2016, IAA earned no bonus in respect of incentives as the capacity target was not met at FAB level.

IAA overall estimated surplus for the en-route activity

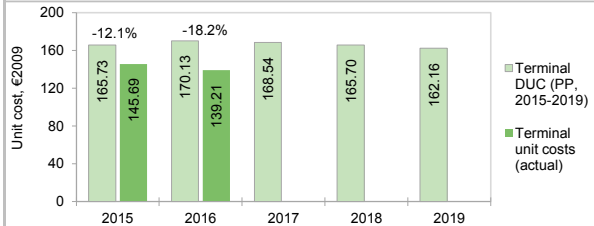
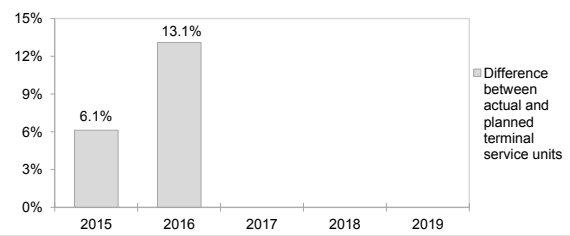
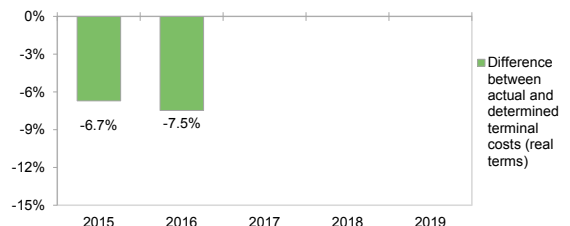
Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+13.7 M€2009) and the surplus embedded in the actual cost of capital (+6.0 M€2009) amounts to +19.7 M€2009 (19.3% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 35.6%, which is higher than the 10.8% planned in the PP.

However, it is worthwhile to note that the IAA has a relatively small asset base (the fourth lowest among SES states when expressed in € per TSU), which means that the gains from the en-route activity have a large impact on the RoE when expressed in percentage.

IRELAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· Ireland TCZ represents 2.2% of the SES terminal ANS determined costs in 2016		· Is this TCZ applying traffic risk sharing?		Yes	
· ATSP:	IAA	· Airports with fewer than 70,000 IFRs ATMs:	2		
· National currency:	EUR		· Airports with between 70,000 and 225,000 IFRs ATMs:	1	
· Number of airports in charging zone in 2016:	3,		· Airports with more than 225,000 IFRs ATMs:	0	
of which:					
2. Terminal DUC monitoring at Charging Zone level					
Ireland: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal EUR)	24 272 300	25 787 100	26 584 700	27 424 700	28 007 800
Inflation %	1.1%	1.2%	1.4%	1.7%	1.7%
Inflation index (100 in 2009)	103.7	105.0	106.4	108.2	110.1
Real terminal costs (EUR2009)	23 401 621	24 567 276	24 977 462	25 335 966	25 442 140
Total terminal Service Units	141 200	144 400	148 200	152 900	156 900
Real terminal unit cost per Service Unit (EUR2009)	165.73	170.13	168.54	165.70	162.16
Ireland: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal EUR)	22 332 565	23 207 720			
Inflation %	0.0%	-0.2%			
Inflation index (100 in 2009)	102.3	102.1			
Real terminal costs (EUR2009)	21 833 422	22 734 486			
Total terminal Service Units	149 863	163 305			
Real terminal unit cost per Service Unit (EUR2009)	145.69	139.21			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal EUR)	in value	-1 939 735	-2 579 380		
	in %	-8.0%	-10.0%		
Inflation %	in p.p.	-1.1 p.p.	-1.4 p.p.		
Inflation index (100 in 2009)	in p.p.	-1.4 p.p.	-2.9 p.p.		
Real terminal costs (EUR2009)	in value	-1 568 198	-1 832 789		
	in %	-6.7%	-7.5%		
Total terminal Service Units	in value	8 663	18 905		
	in %	6.1%	13.1%		
Real terminal unit cost per Service Unit (EUR2009)	in value	-20.04	-30.92		
	in %	-12.1%	-18.2%		
3. Focus on terminal at State/Charging Zone level					
There is only one Terminal Charging Zone (TCZ) in Ireland comprising Dublin, Cork and Shannon airports.					
Terminal unit cost					
In 2016, the actual terminal unit cost in real terms (139.21 €2009) is -18.2% lower than planned in the PP (170.13 €2009). This difference results from the combination of higher than planned TNSUs (+13.1%) and lower than planned terminal costs (-7.5%, or -1.8 M€2009).					
Terminal service units					
Traffic risk sharing applies in the TCZ. The difference between actual and planned TNSUs (+13.1%) exceeds the +10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of terminal revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +1.0 M€2009.					
Terminal costs					
In nominal terms, actual terminal costs are -10.0% lower than planned. However, since the actual inflation index is also lower than planned (-2.9 p.p.), the actual terminal costs are -7.5% below the planned level when expressed in €2009.					
The lower than planned terminal costs in real terms are driven by reductions across all the reporting entities: IAA (-8.0% or -1.8 M€2009), the MET Service Provider (-3.3% or -0.1M€2009) and the NSA (-2.6% or -0.02 M€2009). IAA being the main contributor to the terminal cost base, a detailed analysis at ATSP level is provided in box 12.					
There are no costs exempt from cost-sharing reported for the TCZ.					



IRELAND: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	-8.0%
Other ANSPs	-
METSP	-3.3%
NSA	-2.6%
Total	-7.5%

Costs by nature at ATSP level:

Staff	-14.9%
Other operating costs	-
Depreciation	-15.6%
Cost of capital	23.4%
Exceptional items	-
VFR exempted flights	-
Total	-8.0%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
Total costs exempt from cost sharing		0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

Ireland 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - EUR

The CUR charged to airspace users in 2016 is 180.18 €. This is +0.9% higher than the nominal DUC (178.58 €). The difference between these two figures (+1.60 €) relates to under recoveries (due to lower traffic than forecasted) in 2014 charged to airspace users in 2016.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

Ireland 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - EUR

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (159.79 €) is -10.5% lower than the nominal DUC (178.58 €). The factors contributing to the observed difference are:

- the traffic risk sharing adjustment (-12.29 €), which reflects the gain in revenues due to higher than planned traffic in 2016, which will be reimbursed to airspace users in 2018; and,
- the inflation adjustment (-4.34 €), which corresponds to the impact of a lower than planned inflation index for the year 2016, which will also be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

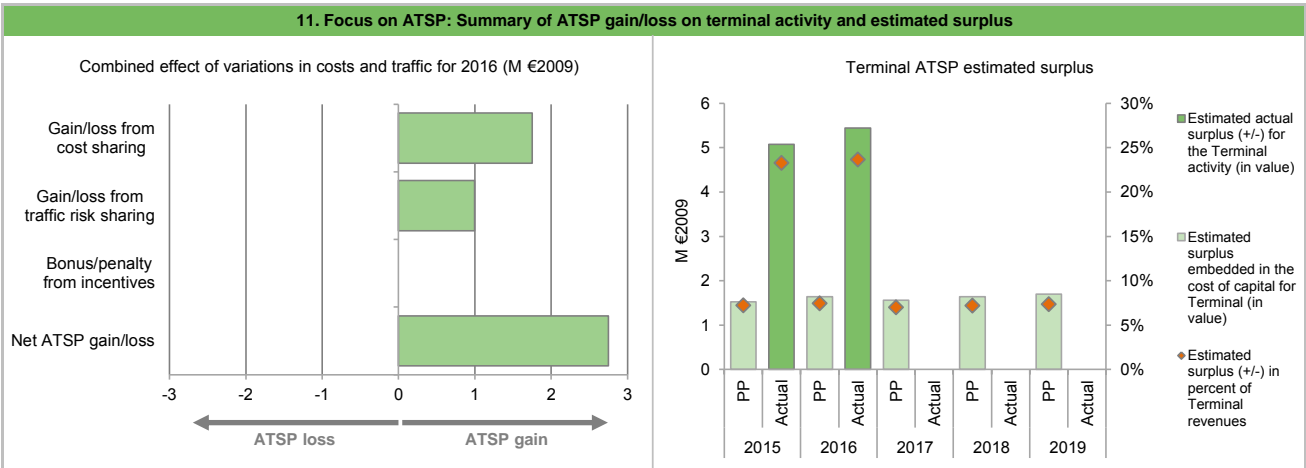
IRELAND: Terminal ATSP (IAA)

Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	21 113	21 994			
Actual costs for the ATSP	19 584	20 241			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	1 529	1 752			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	1 529	1 752			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	6.1%	13.1%			
Determined costs for the ATSP (PP) - based on actual inflation	21 409	22 615			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	694	995			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	2 223	2 748			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	28 500	30 343	28 431	29 203	30 204
Estimated proportion of financing through equity (in %)	50.0%	50.0%	50.0%	49.3%	49.3%
Estimated proportion of financing through equity (in value)	14 246	15 168	14 213	14 407	14 896
Estimated proportion of financing through debt (in %)	50.0%	50.0%	50.0%	50.7%	50.7%
Estimated proportion of financing through debt (in value)	14 253	15 176	14 217	14 796	15 308
Cost of capital pre-tax (in value)	2 023	2 184	2 104	2 249	2 326
Average interest on debt (in %)	3.5%	3.6%	3.8%	4.1%	4.1%
Interest on debt (in value)	499	546	540	607	628
Determined RoE pre-tax rate (in %)	10.7%	10.8%	11.0%	11.4%	11.4%
Estimated surplus embedded in the cost of capital for terminal (in value)	1 524	1 638	1 563	1 642	1 698
Overall estimated surplus (+/-) for the terminal activity	1 524	1 638	1 563	1 642	1 698
Revenue/costs for the terminal activity	21 113	21 994	22 350	22 866	23 111
Estimated surplus (+/-) in percent of terminal revenues	7.2%	7.4%	7.0%	7.2%	7.3%
Estimated ex-ante RoE pre-tax rate (in %)	10.7%	10.8%	11.0%	11.4%	11.4%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	26 685	24 950			
Estimated proportion of financing through equity (in %)	100.0%	100.0%			
Estimated proportion of financing through equity (in value)	26 685	24 950			
Estimated proportion of financing through debt (in %)	0.0%	0.0%			
Estimated proportion of financing through debt (in value)	0	0			
Cost of capital pre-tax (in value)	2 855	2 695			
Average interest on debt (in %)	0.0%	0.0%			
Interest on debt (in value)	0	0			
Determined RoE pre-tax rate (in %)	10.7%	10.8%			
Estimated surplus embedded in the cost of capital for terminal (in value)	2 855	2 695			
Net ATSP gain(+)/loss(-) on terminal activity	2 223	2 748			
Overall estimated surplus (+/-) for the terminal activity	5 078	5 442			
Revenue/costs for the terminal activity	21 807	22 989			
Estimated surplus (+/-) in percent of terminal revenues	23.3%	23.7%			
Estimated ex-post RoE pre-tax rate (in %)	19.0%	21.8%			

IRELAND: Terminal ATSP (IAA)

Monitoring of terminal COST-EFFICIENCY for 2016



12. Focus on terminal ATSP: General conclusions

Actual 2016 IAA terminal costs vs. PP

IAA actual terminal costs are -8.0% (-1.8 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided within the Terminal Reporting Tables, the main drivers for this deviation are:

- lower staff costs (-14.9% or -1.6 M€2009), mainly due to higher than expected number of departures, retirements and recruitment occurring later than expected;
- slightly higher other operating costs (+0.7% or +0.03 M€2009),
- lower depreciation costs (-15.6% or -0.7 M€2009); mainly due to changes in the timing of investment projects; and,
- a higher cost of capital (+23.4% or +0.5 M€2009) resulting from a combination of a lower asset base with a higher weighted average cost of capital (since the IAA had no debt in 2016).

IAA 2016 net gain/loss on terminal activity

As shown in box 9, the terminal activity generated a net gain of +2.7 M€2009 in 2016. This is a combination of two elements:

- a gain of +1.7 M€2009 as a result of the cost-sharing mechanism; and,
- a gain of +1.0 M€2009 as a result of traffic risk-sharing mechanism.

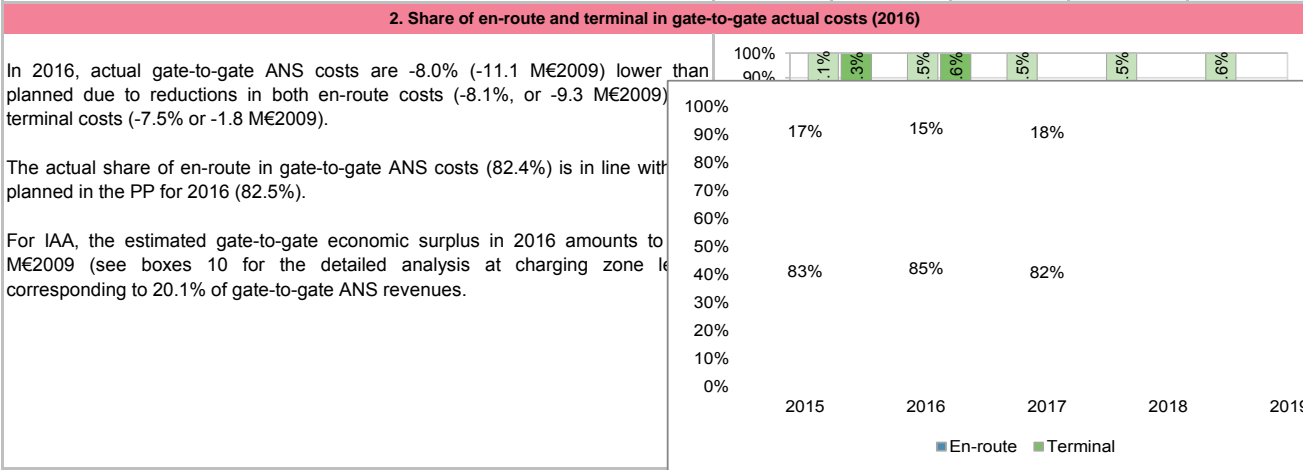
IAA 2016 overall estimated surplus for the terminal activity

Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity mentioned above (+2.7 M€2009) and the surplus embedded in the cost of capital (+2.7 M€2009) amounts to +5.4 M€2009 (23.7% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 21.8%, which is higher than the 10.8% planned in the PP.

IRELAND: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs					
Ireland: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)	113 811 728	115 644 664	118 001 964	119 511 684	118 798 780
Real terminal costs (EUR2009)	23 401 621	24 567 276	24 977 462	25 335 966	25 442 140
Real gate-to-gate costs (EUR2009)	137 213 349	140 211 940	142 979 426	144 847 650	144 240 920
En-route share (%)	82.9%	82.5%	82.5%	82.5%	82.4%
Ireland: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)	104 273 918	106 330 301			
Real terminal costs (EUR2009)	21 833 422	22 734 486			
Real gate-to-gate costs (EUR2009)	126 107 341	129 064 787			
En-route share (%)	82.7%	82.4%			
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-11 106 008	-11 147 153			
in %	-8.1%	-8.0%			
En-route share					
in p.p.	-0.3%	-0.1%			



3. Technical notes on en-route and terminal information reported by Ireland

Technical notes on en-route and terminal information reported by Ireland.

PRB Annual monitoring report 2016

Volume 2 – Local Overview

United Kingdom

Version: 1.1

Date: 9 October 2017

UNITED KINGDOM

Monitoring of SAFETY for 2016

Effectiveness of Safety Management						
	Score	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion	Safety Culture
State level	86	C	C	D	D	E
NATS NERL	87	D	D	D	D	D

Note: For State level Safety Assurance does not include Q3.8 and Safety Culture is self assessed. ANSP results are verified by the State.

Application of the severity classification of the Risk Analysis Tool (RAT)		
	RAT application (%)	
	ATM Ground	ATM Overall
Separation Minima Infringements (SMIs)	100%	100%
Runway Incursions (RIs)	100%	100%
ATM Specific Occurrences (ATM-S)		100%
Source of RAT data:	UK CAA	

Note: The No of reported occurrences applicable to the RP2 Scope for the RAT application (AA-A to C and airports above 70k ATM movements)

Just culture		
State level	Number of questions answered	
	YES	NO
Policy and its implementation	9	0
Legal/Judiciary	7	0
Occurrence reporting and Investigation	2	0
TOTAL	18	0
NATS NERL	Number of questions answered	
	YES	NO
Policy and its implementation	12	1
Legal/Judiciary	3	0
Occurrence reporting and Investigation	7	1
TOTAL	22	2

Observations

The 2019 EoSM target level was met in all reviewed EoSM Components/areas of the State. After verification some answers above the target level were downgraded to align them with EASA audit results to the end of 2016 or because the justification was not sufficient. Detail feedback has been sent to the State focal point by EASA Standardisation team.

All 34 questions in Components 1-4 (not including Component - Safety Culture) are at or above Level C.

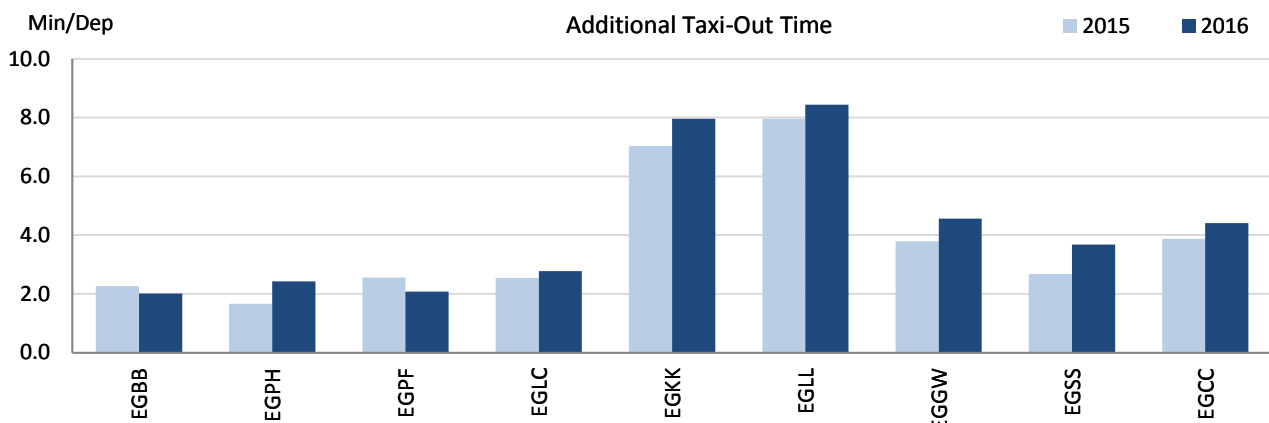
UNITED KINGDOM

Monitoring of Airports Contribution to ENVIRONMENT for 2016

1. Overview

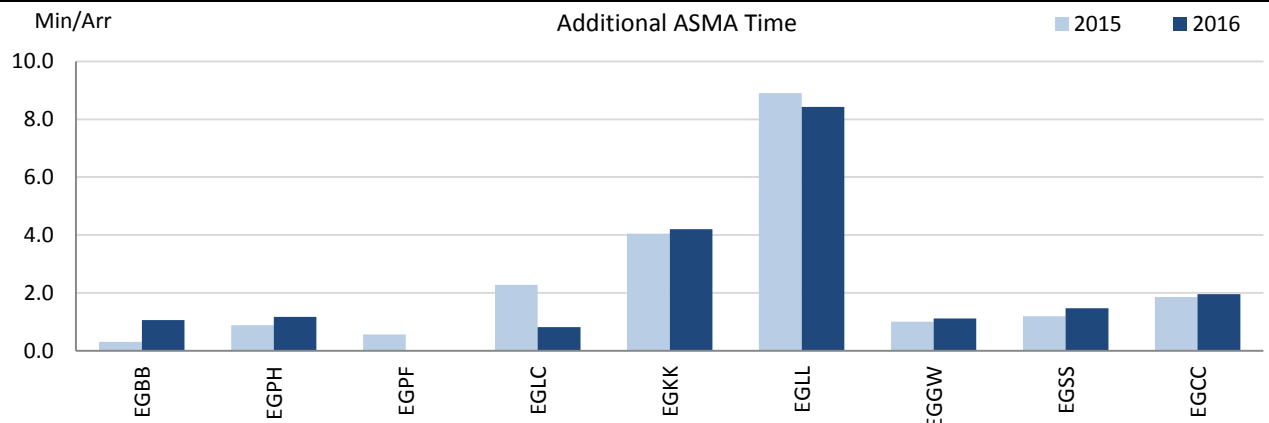
There are nine airports in United Kingdom subject to RP2 monitoring and although all of them have established the data flow, there are still some remaining data issues that preclude the calculation of additional ASMA time in Glasgow (EGPF)
 The performance shown is directly related at some airports to the airport capacity/utilisation objectives, that are prioritised over other operational measures such as taxi-out time and time in the terminal area.

2. Additional Taxi-Out Time



There is a general deterioration of performance regarding additional taxi-out times at UK airports. Heathrow (EGLL) and Gatwick (EGKK) stand out with the highest times of RP2 airports in Europe (7.96 and 8.44 min/dep. respectively), with values up to 5 minutes higher than the RP2 average of 3.39 min/dep.

3. Additional ASMA Time



In terms of additional time in terminal airspace there is also a general slight increase in 2016 with the exception of London City (EGLC) and Heathrow (EGLL) airports, where the NSA reports that the observed improvement is in part due to the implementation of airspace improvement measures such as point merge and extended arrival management.
 Heathrow remains the airport in Europe with the highest additional ASMA time (8.90 min/arr.), around 6.5 min/arr. more than other airports with similar share of traffic, due to the capacity constraints.

4. Appendix

n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	ADDITIONAL TAXI-OUT TIME					ADDITIONAL ASMA TIME				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Birmingham	EGBB	2.26	2.01				0.31	1.06			
Edinburgh	EGPH	1.66	2.43				0.88	1.17			
Glasgow	EGPF	2.56	2.08				0.56	n/a			
London/ City	EGLC	2.55	2.77				2.27	0.81			
London/ Gatwick	EGKK	7.03	7.96				4.04	4.20			
London/ Heathrow	EGLL	7.96	8.44				8.90	8.43			
London/ Luton	EGGW	3.79	4.56				1.00	1.11			

London/ Stansted	EGSS	2.67	3.68				1.19	1.47			
Manchester	EGCC	3.87	4.41				1.85	1.95			

UNITED KINGDOM

Monitoring of CAPACITY for 2016

En route Capacity incentive scheme						
	2015	2016	2017	2018	2019	Observations
National Capacity target	0.22	0.23	0.23	0.23	0.23	Exclusive use of CRSTMP codes means that the PRB is unable to independently validate the results for incentive purposes. Actual performance reported here is for all causes of delay.
Deadband +/-						
Actual performance	0.08	0.31				

National capacity incentive scheme

The FAB target of 0.26 was not achieved which removes the possibility of bonuses to any ANSP (under the C1 and C2 incentive schemes) but raises the possibility of penalties if national performance is worse than the national target for en route capacity.

The UK NSA decided that the maximum penalty or bonus associated with this metric (C2) should be not more than 0.25% of ANSP en route revenue, with a further 0.75% being applied to the additional UK capacity incentive measures (C3 & C4).

In respect of the UK, the incentive par value for NATS for C2 in 2016 was 0.18 mins/flight based on a limited range of attributed delay codes (C,R,S,T,M &P).

The upper limit of the dead band, before a penalty is incurred, was 0.20.

Actual NERL performance in 2016 (counting only delay codes C,R,S,T,M & P), was 0.21minutes per flight and as such a penalty is applicable.

The maximum penalty for C2 is 0.25% of ANSP en route revenue, and this is calculated on a sliding scale in accordance with the formula in Condition 21 of the NERL Licence (with a further 0.75% applied to the additional UK capacity incentive measures).

For a C2 score of 0.21, the C2 penalty for the UK in 2016 is £366 563.

Compliance issues relating to national capacity incentive scheme

The UK has implemented further incentive schemes for NATS related to en route capacity (C3 & C4). These are described in Chapter 4 of the UK Ireland FAB performance plan for RP2, submitted in June 2014.

Impact score (C3): Penalty or bonus up to 0.5% of ANSP revenue.
 C3 reflects the relatively high impact of long delays and early delays that have a disproportionate knock-on effect on the punctuality of subsequent flights.

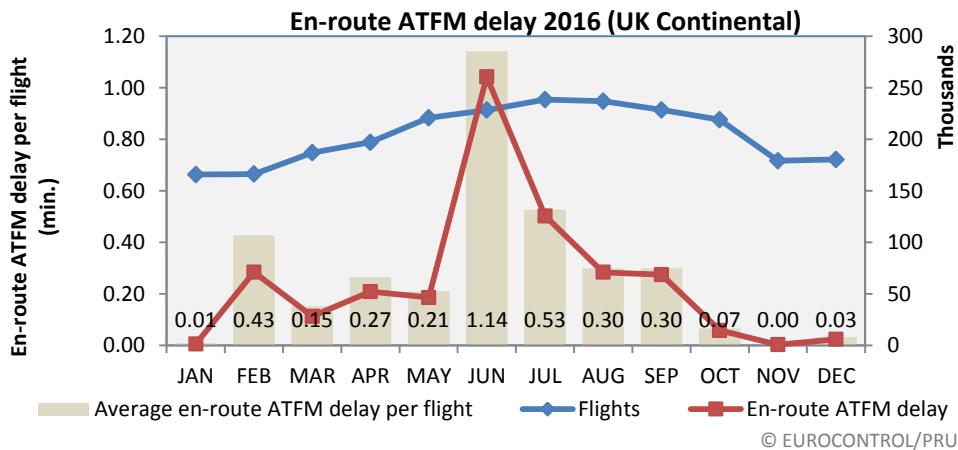
The upper limit of the dead-band for C3 in 2016 is 24.8, once the penalty threshold is modulated for traffic variation above 4% of forecast. Actual NATS performance in 2016 was 24.99, and as such, a penalty is applicable. The penalty is incurred on a rate of £0.112 per minute of ATFM delay (with adjustment for inflation).
 Result: The actual penalty for the UK for C3 in 2016 is £56,156.00

Daily excess delay score (C4): PENALTY ONLY

C4 provides an incentive to avoid days where there is a particularly severe disruption which has a disproportionate impact on airline service. Unlike the FAB incentive and C3, this is generally due to some form of system failure rather than any underlying shortfall in ongoing capacity. No bonuses are applicable under C4, recognising that failure against this measure relates to exceptional events and a reasonable user expectation of such events is likely to be zero.

Result: No penalty is due for 2016.

Observations regarding national capacity performance



En-route ATFM delay per flight (United Kingdom)								
2008	2009	2010	2011	2012	2013	2014	2015	2016
0.54	0.17	0.15	0.19	0.07	0.13	0.06	0.08	0.31

The deterioration of en route capacity performance in the United Kingdom in comparison to 2015, to such an extent that the national target for capacity performance was missed, is noted. It is noted that a 5% increase in traffic on 2015 levels resulted in an increase in ATFM delays of 270%. It is noted that, in comparison to 2015 results, weather related delays increased by 95% to 185k minutes; delays attributed to ATC capacity increased by more than 400% to 178k; delays attributed to ATC staffing increased by 166% to 135k minutes. It is noted that more than 110k minutes of delay were attributed to the implementation and testing of a new FDP system, iTEC, and 63k minutes of delay for the implementation of the LAMP airspace project. The Network Manager, based on the ANSP capacity plans contained within the NOP 2015-2019 and NOP 2016-2020 (which included iTEC and LAMP) did not expect any capacity shortfalls within the UK during RP2. It is noted that no corrective measures were listed in the UK Ireland FAB monitoring report to address the significant increase in delays attributed to ATC capacity nor the increase in delays due to ATC staffing issues. Finally, it is noted that the Network Manager, according to the latest ANSP capacity plans in NOP 2017-2021 does not expect any capacity shortfalls in the UK for the remainder of RP2.

Planning and Effective Use of CDRs

The United Kingdom did not provide any data.

Observations on Planning and effective Use of CDRs

It is noted that the United Kingdom, like many other States, is unable to monitor the planning and effective use of CDRs. The PRB has previously suggested that the use of such indicators should be reviewed in light of the increasing irrelevance as Free Route Airspace operations becomes more widespread through the network.

Effective booking procedures

The ratio of time airspace was actually used for activity requiring segregation or restriction from GAT and the amount of time it was allocated as being restricted on the day of operations: 39%.

The ratio of time that airspace, surplus to requirement, was released with more than 3 hours' notice to the Network Manager and the amount of time it was allocated as being restricted on the day of operations: 9%

Observations on Effective booking procedures

No details were provided on which segregated or restricted areas were considered for the calculation of effective booking procedures. Therefore it is impossible to gauge whether or not this information is based exclusively on those areas which impact either available ATC capacity or available route options.

UNITED KINGDOM

Monitoring of Airports Contribution to CAPACITY for 2016

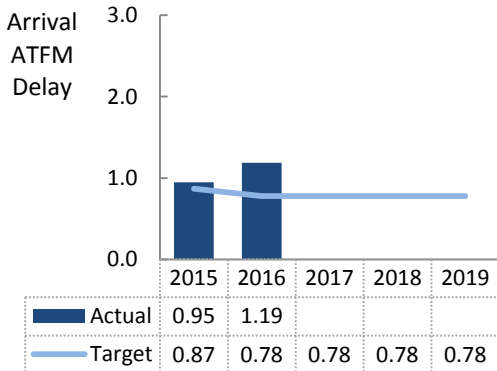
1. Overview

United Kingdom identifies 9 airports as subject to RP2 monitoring. The established national target on arrival ATFM delay has been exceeded in 2016 by 0.41 min/arr.

Regarding the adherence to ATFM slots, the performance has improved in general reaching the 90% threshold except Birmingham that remains below 85%.

The reported pre-departure delay requires further validation due to the use of ambiguity codes.

2. Arrival ATFM Delay



All airports in the London TMA except Heathrow have significantly increased their arrival ATFM delay. Gatwick shows the worst result in terms of arrival ATFM delay in Europe, with 2.41 min/arr. Heathrow (EGLL) and London City (EGLC) also show very high values well above 1.5 min/arr, despite the 0.26 min/arr reduction at Heathrow with respect to 2015. While most of the regulations in Heathrow are attributed to weather, in London City and Gatwick there is a mix of causes including aerodrome capacity, ATC staffing and weather.

UK's CAA reports that several factors contributed to this performance:

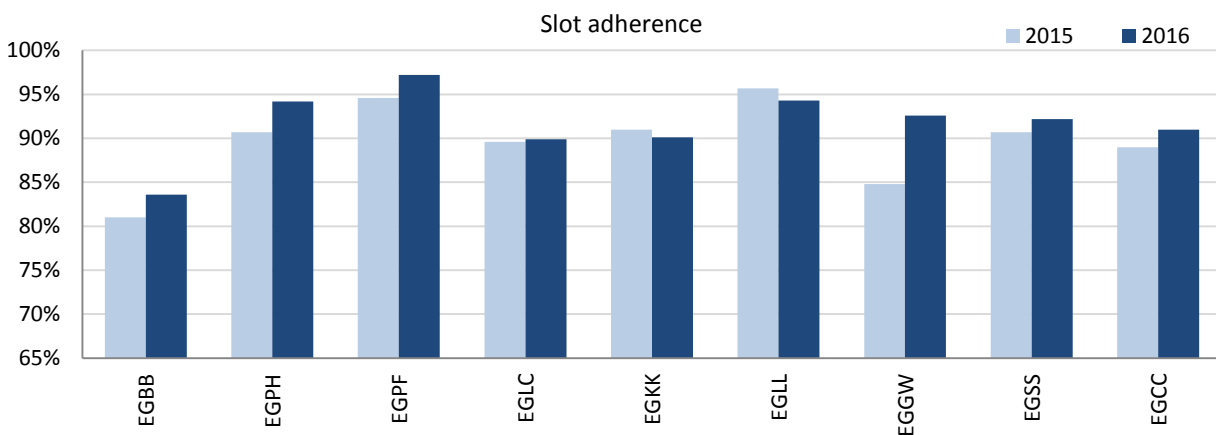
- LAMP 1A airspace change implementation requiring staffing and capacity regulations
- Transition of ANSPs at Gatwick Airport
- Higher than expected traffic growth at airports within the London TMA

3. Arrival ATFM Delay – National Target and Incentive Scheme

The UK-Ireland FAB PP establishes a national target on arrival ATFM delay for the United Kingdom with a breakdown per airport. The step in the target from 2015 to 2016 is motivated by performance improvements anticipated from the introduction of time-based separation at the major UK hub. However the increase in the actual arrival ATFM delay for 2016 (2015: 0.95 min/arr. vs 2016: 1.19 min/arr.) does not reflect the expected outcome, missing for the second year in a row the established national target. Amongst London airports, only Heathrow's performance meets the PP's reference value. Gatwick shows 4 times the delay established as its target/reference value, while Stansted and London Luton show almost 10 times their reference values. Outside of the London TMA, UK airports delay performance was consistent with or better than the PP values.

The UK-Ireland FAB performance plan presents no (capacity) incentive scheme for the national target on arrival ATFM delay for United Kingdom.

4. ATFM Slot Adherence



Slot adherence at all UK airports except Gatwick has moderately increased with respect to 2015, reaching values above 90% in most cases. Nonetheless, the slot adherence at Birmingham (EGBB) is still under the critical 85% threshold.

5. Pre-departure Delay

London Luton (EGGW) transitioned to the Airport Operator Data Flow in the course of 2016. Nevertheless, the quality of the pre-departure delay reporting does not allow for the calculation of this indicator, due to a high share of unreported delay and/or associated to ambiguity codes.

This is also the case of London Heathrow, where 90% of the delays are attributed to ambiguity codes that do not disclose the reason for the delay.

The pre-departure delay showed by Gatwick (EGKK) is one of the highest in Europe (1.21 min/dep.), together with Stansted (EGSS) (0.99 min/dep.). Except Manchester (EGCC), the rest of airports show a degradation of performance in terms of ATC pre-departure delay.

UK's NSA plans to engage to improve the data collection and clarify with ANSPs the reason for the lower ATC pre-departure delay performance.

6. Appendix

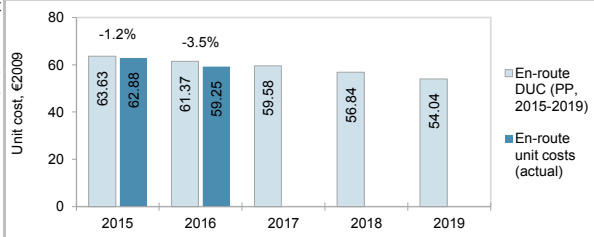
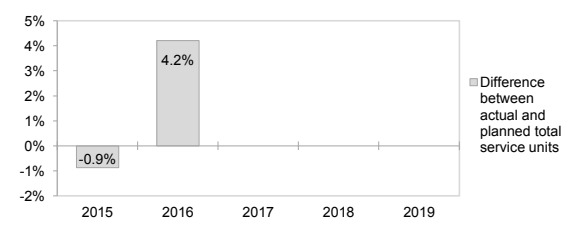
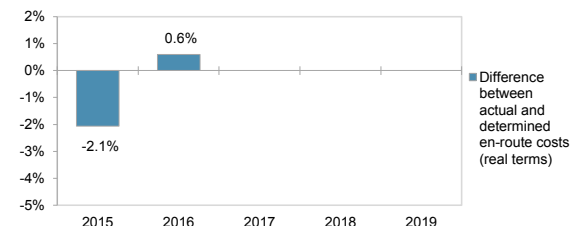
n/a: Airport Operator Data Flow not established, or more than two months of missing / non-validated data

AIRPORT NAME	ICAO CODE	AVG ARRIVAL ATFM DELAY					SLOT ADHERENCE					AVG PRE-DEPARTURE DELAY				
		2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Birmingham	EGBB	0.00	0.06				81.0%	83.6%				0.19	0.23			
Edinburgh	EGPH	0.00	0.02				90.7%	94.2%				0.20	0.24			
Glasgow	EGPF	0.02	0.00				94.6%	97.2%				n/a	n/a			
London/ City	EGLC	0.97	1.77				89.6%	89.9%				n/a	n/a			
London/ Gatwick	EGKK	1.03	2.41				91.0%	90.1%				0.74	1.21			
London/ Heathrow	EGLL	2.12	1.86				95.7%	94.3%				n/a	n/a			
London/ Luton	EGGW	0.28	0.83				84.8%	92.6%				n/a	n/a			
London/ Stansted	EGSS	0.34	0.81				90.7%	92.2%				0.56	0.99			
Manchester	EGCC	0.25	0.10				89.0%	91.0%				0.69	0.68			

UNITED KINGDOM: En-route charging zone

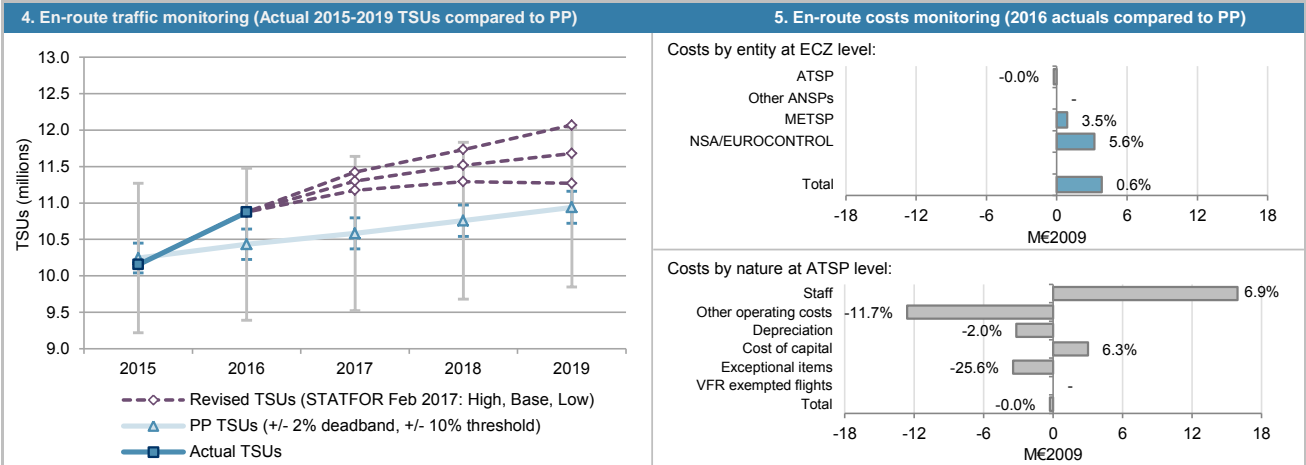
Monitoring of en-route COST-EFFICIENCY for 2016

1. Contextual economic information: en-route air navigation services						
<ul style="list-style-type: none"> United Kingdom ECZ represents 10.3% of the SES en-route ANS determined costs in 2016 ATSP: NATS FAB: UK-Ireland FAB National currency: GBP Exchange rate 2009: 1 EUR = 0.890647 GBP 						
2. En-route DUC monitoring at Charging Zone level						
United Kingdom: Data from RP2 PP (EC Decision 2015/348 of 2 March 2015)		2015D	2016D	2017D	2018D	2019D
En-route costs (nominal GBP)		686 348 218	687 119 724	690 004 230	682 569 359	673 089 111
Inflation %		1.9%	1.9%	2.0%	2.0%	2.0%
Inflation index (100 in 2009)		118.2	120.5	122.9	125.3	127.8
Real en-route costs (GBP2009)		580 582 809	570 397 867	561 561 156	544 617 914	526 523 219
Total en-route Service Units		10 244 000	10 435 000	10 583 000	10 758 000	10 940 000
Real en-route unit cost per Service Unit (GBP2009)		56.68	54.66	53.06	50.62	48.13
Real en-route unit cost per Service Unit (EUR2009)		63.63	61.37	59.58	56.84	54.04
United Kingdom: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
En-route costs (nominal GBP)		657 371 102	668 038 384			
Inflation %		0.0%	0.7%			
Inflation index (100 in 2009)		115.6	116.4			
Real en-route costs (GBP2009)		568 619 925	573 830 214			
Total en-route Service Units		10 153 900	10 874 798			
Real en-route unit cost per Service Unit (GBP2009)		56.00	52.77			
Real en-route unit cost per Service Unit (EUR2009)		62.88	59.25			
Difference between Actuals and Planned		2015	2016	2017	2018	2019
En-route costs (nominal GBP)	in value	-28 977 116	-19 081 341			
	in %	-4.2%	-2.8%			
Inflation %	in p.p.	-1.9 p.p.	-1.2 p.p.			
Inflation index (100 in 2009)	in p.p.	-2.6 p.p.	-4.0 p.p.			
Real en-route costs (GBP2009)	in value	-11 962 883	3 432 347			
	in %	-2.1%	0.6%			
Total en-route Service Units	in value	-90 100	439 798			
	in %	-0.9%	4.2%			
Real en-route unit cost per Service Unit (GBP2009)	in value	-0.68	-1.90			
	in %	-1.2%	-3.5%			
Real en-route unit cost per Service Unit (EUR2009)	in value	-0.76	-2.13			
	in %	-1.2%	-3.5%			
3. Focus on en-route at State/Charging Zone level						
En-route unit cost						
<p>In 2016, the actual en-route unit cost in real terms (59.25 €2009) is -3.5% lower than planned in the PP (61.37 €2009). This difference results from the combination of higher than planned TSUs (+4.2%) and higher than planned en-route costs (+0.6%, or +3.9 M€2009).</p>						
En-route service units						
<p>The difference between actual and planned TSUs (+4.2%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk-sharing mechanism. The resulting gain of en-route revenues with respect to traffic risk sharing is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +15.4 M€2009. It is noteworthy that considering the most recent STATFOR February 2017 forecasts, it appears that the traffic is likely to remain higher than planned throughout RP2 .</p>						
En-route costs						
<p>In nominal terms, actual en-route costs are -2.8% lower than planned. However, since the actual inflation index is also lower than planned (-4.0 p.p.), actual en-route costs are +0.6% higher than planned when expressed in €2009.</p> <p>This mainly results from the combination of slightly lower costs for the en-route ATSP, NERL (-0.05% or -0.3 M€2009) while the costs for the other entities are higher than planned: the MET Service Provider (+3.5% or +0.9 M€2009) and the NSAEUROCONTROL (+5.6% or +3.2 M€2009). NERL being the main contributor to the en-route cost base, a detailed analysis at ATSP level is provided in box 12.</p>						
<p>Costs exempt from cost-sharing are reported for a total amount of +3.0 M€2009 comprising +1.6 M€2009 for NERL pensions and +1.4 M€2009 for EUROCONTROL costs. These costs will be eligible for carry-over (charged to airspace users) to the following reference period(s), if deemed allowed by the European Commission.</p>						



UNITED KINGDOM: En-route charging zone

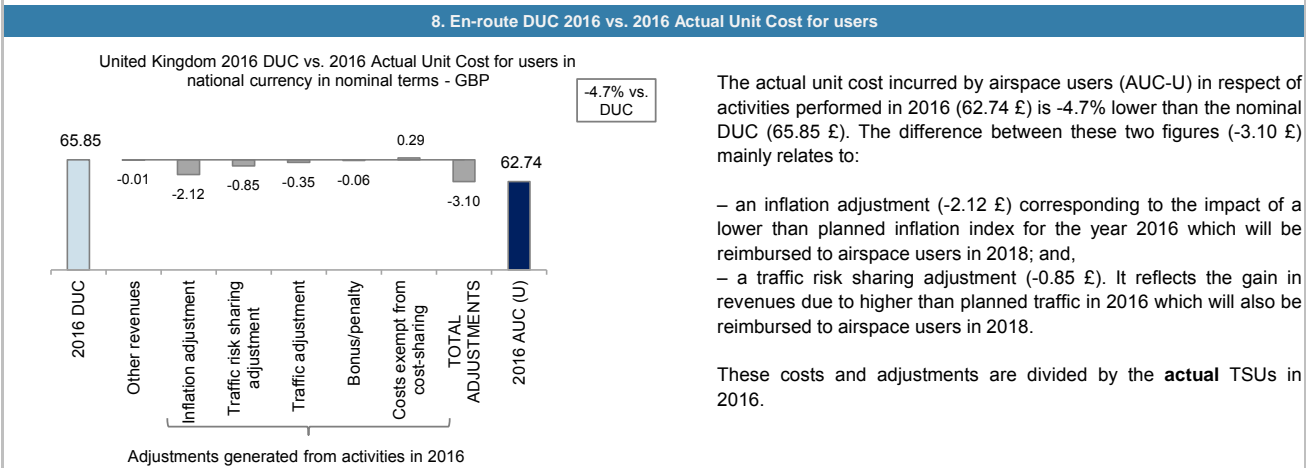
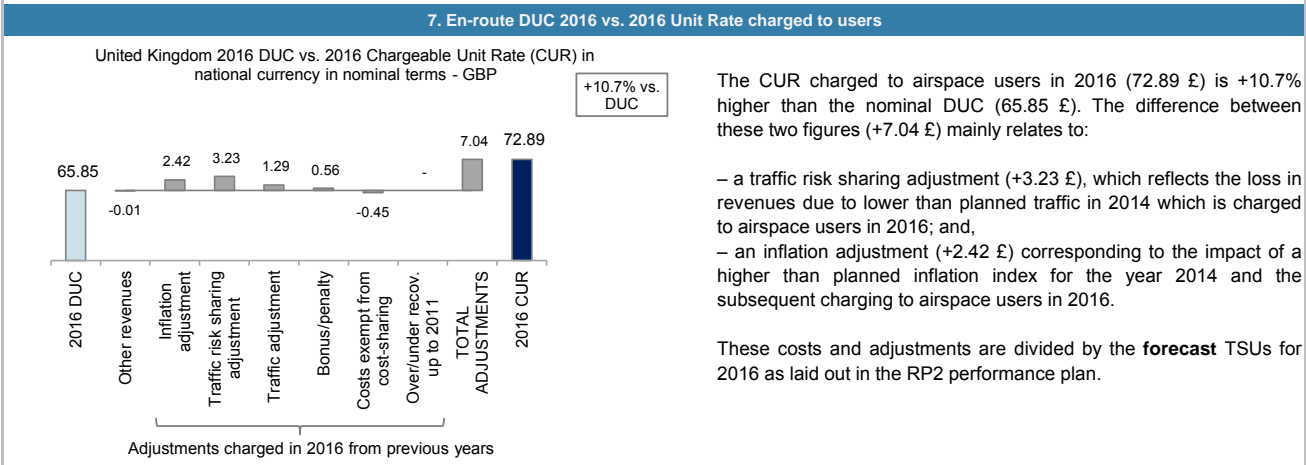
Monitoring of en-route COST-EFFICIENCY for 2016



6. En-route costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	1 077	1 617			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	-3 845	1 379			
by entity	ATSP	1 077	1 617			
	Other ANSP	0	0			
	METSP	0	0			
	NSA/EUROCONTROL	-3 845	1 379			
Total costs exempt from cost sharing		-2 768	2 996			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.



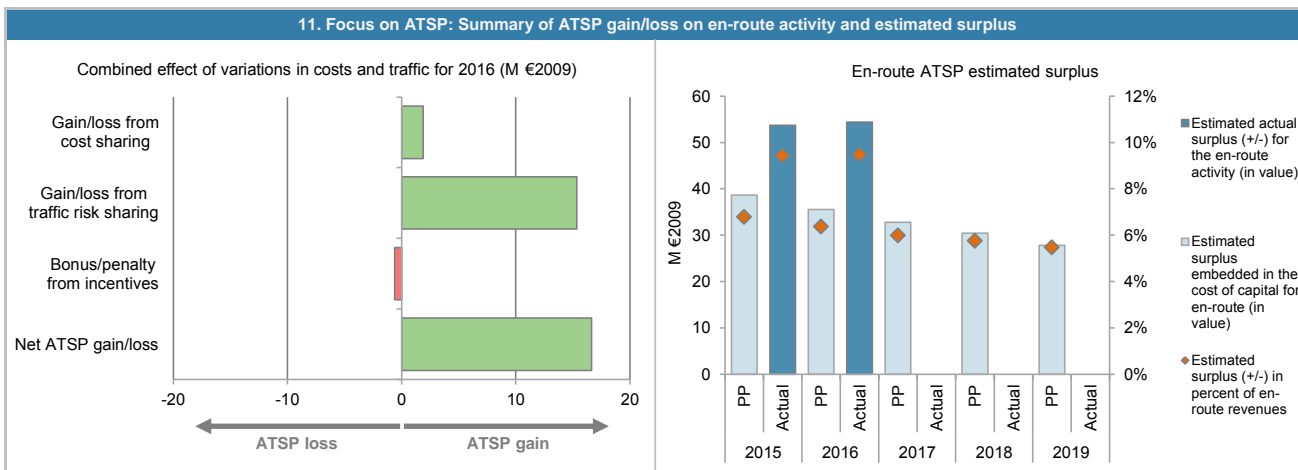
UNITED KINGDOM: En-route ATSP (NATS)

Monitoring of en-route COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on en-route activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	568 718	556 914			
Actual costs for the ATSP	556 567	556 642			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	12 151	272			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	1 077	1 617			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	13 228	1 889			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	-0.9%	4.2%			
Determined costs for the ATSP (PP) - based on actual inflation	581 552	576 269			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-5 115	15 354			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	4 565	-614.350			
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	12 678	16 629			
10. Focus on ATSP: En-route ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	885 353	814 071	751 630	697 425	637 957
Estimated proportion of financing through equity (in %)	40.0%	40.0%	40.0%	40.0%	40.0%
Estimated proportion of financing through equity (in value)	354 451	325 913	300 915	279 214	255 406
Estimated proportion of financing through debt (in %)	60.0%	60.0%	60.0%	60.0%	60.0%
Estimated proportion of financing through debt (in value)	530 902	488 158	450 715	418 211	382 551
Cost of capital pre-tax (in value)	51 908	47 728	44 068	40 890	37 403
Average interest on debt (in %)	2.5%	2.5%	2.5%	2.5%	2.5%
Interest on debt (in value)	13 273	12 204	11 268	10 455	9 564
Determined RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
Estimated surplus embedded in the cost of capital for en-route (in value)	38 635	35 525	32 800	30 434	27 839
Overall estimated surplus (+/-) for the en-route activity	38 635	35 525	32 800	30 434	27 839
Revenue/costs for the en-route activity	568 718	556 914	547 025	528 185	508 537
Estimated surplus (+/-) in percent of en-route revenues	6.8%	6.4%	6.0%	5.8%	5.5%
Estimated ex-ante RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	940 369	865 853			
Estimated proportion of financing through equity (in %)	40.0%	40.0%			
Estimated proportion of financing through equity (in value)	376 148	346 341			
Estimated proportion of financing through debt (in %)	60.0%	60.0%			
Estimated proportion of financing through debt (in value)	564 221	519 512			
Cost of capital pre-tax (in value)	55 106	50 739			
Average interest on debt (in %)	2.5%	2.5%			
Interest on debt (in value)	14 106	12 988			
Determined RoE pre-tax rate (in %)	10.9%	10.9%			
Estimated surplus embedded in the cost of capital for en-route (in value)	41 000	37 751			
Net ATSP gain(+)/loss(-) on en-route activity	12 678	16 629			
Overall estimated surplus (+/-) for the en-route activity	53 678	54 380			
Revenue/costs for the en-route activity	569 245	573 271			
Estimated surplus (+/-) in percent of en-route revenues	9.4%	9.5%			
Estimated ex-post RoE pre-tax rate (in %)	14.3%	15.7%			

UNITED KINGDOM: En-route ATSP (NATS)

Monitoring of en-route COST-EFFICIENCY for 2016



12. Focus on en-route ATSP: General conclusions

Actual 2016 NERL en-route costs vs. PP

In 2016, NERL actual en-route costs are -0.05% (-0.3 M€2009) lower, in real terms, than planned in the PP. Based on the Additional Information provided with the en-route Reporting Tables, the main drivers for the observed difference are:

- Higher staff costs (+6.9% or +15.9 M€2009), mainly reflecting a higher number of staff, reclassification from other operating costs and higher pension costs.
- Lower other operating costs (-11.7% or -12.6 M€2009), mainly due to cost containment measures and reclassification of some cost items to staff costs.
- Lower depreciation costs (-2.0% or -3.2 M€2009), resulting from changes in the timing of investment projects.
- Higher cost of capital (+6.3% or +3.0 M€2009) due to a higher asset base mainly driven by an increase in adjustments to total assets. In addition to fixed assets, the regulated asset base (RAB) includes working capital and capitalised finance costs as well as adjustments for pensions and the rolling incentive mechanism. It is noteworthy that the RAB is also indexed to inflation.
- Lower exceptional items (-25.6% or -3.5 M€2009), mainly due to timing differences in FAS facilitation expenses.

NERL net gain/loss on en-route activity in 2016

As shown in box 9, NERL generated a net gain of +16.6 M€2009 on the en-route activity. This is a combination of three elements:

- a gain of +1.9 M€2009 arising from the cost sharing mechanism;
- a gain of +15.4 M€2009 arising from the traffic risk sharing mechanism; and,
- a loss of -0.6 M€2009, corresponding to a penalty incurred as part of the capacity target incentive mechanism (see note 1). This amount corresponds to -0.1% of NERL en-route revenues (based on the ATSP chargeable unit rate in 2016 times the actual TSUs). The inclusion of this penalty in the chargeable cost base will be examined by the European Commission.

The gain from cost-sharing mentioned above (+1.9 M€2009) includes costs exempt from cost-sharing relating to NERL pensions (+1.6 M€2009).

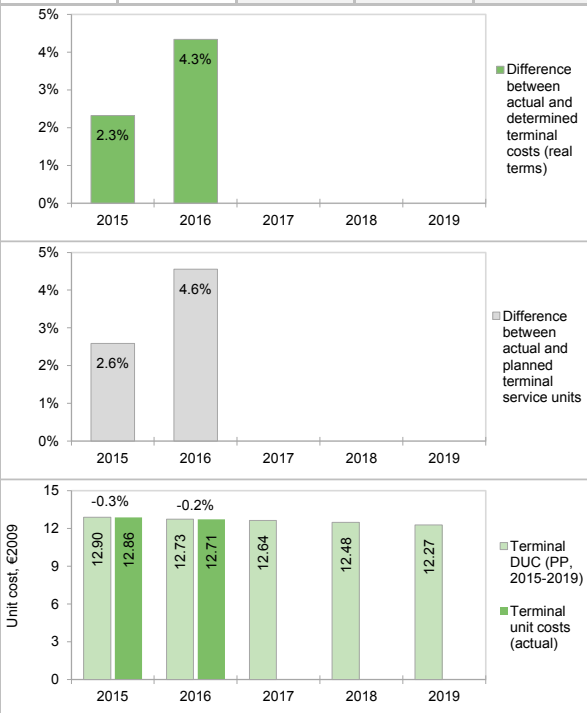
NERL overall estimated surplus for the en-route activity

Ex-post, the overall estimated surplus taking into account the net gain from the en-route activity mentioned above (+16.6 M€2009) and the surplus embedded in the actual cost of capital (+37.8 M€2009) amounts to +54.4 M€2009 (9.5% of the 2016 en-route revenues). The resulting ex-post rate of return on equity is 15.7%, which is higher than the 10.9% planned in the PP.

UK - ZONE C: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

1. Contextual economic information: terminal air navigation services					
· UK - Zone C TCZ represents 1.0% of the SES terminal ANS determined costs in 2016	· Is this TCZ applying traffic risk sharing?				Yes
· ATSP: NATS	· Airports with fewer than 70,000 IFRs ATMs:				0
· National currency: GBP	· Airports with between 70,000 and 225,000 IFRs ATMs:				3
· Number of airports in charging zone in 2016: 5, of which:	· Airports with more than 225,000 IFRs ATMs:				2
2. Terminal DUC monitoring at Charging Zone level					
UK - Zone C: Data from RP2 Performance Plan					
	2015D	2016D	2017D	2018D	2019D
Terminal costs (nominal GBP)	12 011 867	12 371 198	12 749 490	13 092 087	13 398 855
Inflation %	1.9%	1.9%	2.0%	2.0%	2.0%
Inflation index (100 in 2009)	118.2	120.5	122.9	125.3	127.8
Real terminal costs (GBP2009)	10 160 853	10 269 688	10 376 195	10 446 096	10 481 239
Total terminal Service Units	884 691	905 513	921 933	940 093	958 830
Real terminal unit cost per Service Unit (GBP2009)	11.49	11.34	11.25	11.11	10.93
Real terminal unit cost per Service Unit (EUR2009)	12.90	12.73	12.64	12.48	12.27
UK - Zone C: Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Terminal costs (nominal GBP)	12 019 496	12 474 203			
Inflation %	0.0%	0.7%			
Inflation index (100 in 2009)	115.6	116.4			
Real terminal costs (GBP2009)	10 396 753	10 715 065			
Total terminal Service Units	907 600	946 771			
Real terminal unit cost per Service Unit (GBP2009)	11.46	11.32			
Real terminal unit cost per Service Unit (EUR2009)	12.86	12.71			
Difference between Actuals and Planned					
	2015	2016	2017	2018	2019
Terminal costs (nominal GBP)	in value 7 629	103 005			
	in % 0.1%	0.8%			
Inflation %	in p.p. -1.9 p.p.	-1.2 p.p.			
Inflation index (100 in 2009)	in p.p. -2.6 p.p.	-4.0 p.p.			
Real terminal costs (GBP2009)	in value 235 900	445 377			
	in % 2.3%	4.3%			
Total terminal Service Units	in value 22 909	41 258			
	in % 2.6%	4.6%			
Real terminal unit cost per Service Unit (GBP2009)	in value -0.03	-0.02			
	in % -0.3%	-0.2%			
Real terminal unit cost per Service Unit (EUR2009)	in value -0.03	-0.03			
	in % -0.3%	-0.2%			
3. Focus on terminal at State/Charging Zone level					
<p>This analysis focuses on UK Terminal Charging Zone C (TCZ C), which corresponds to the London approach services provided at the five London airports (Heathrow, Gatwick, Stansted, Luton and London City). These airports are common to TCZ B, for which UK has submitted information to the European Commission on a confidential basis. The monitoring of TCZ B is therefore excluded from this report. Additional information on the particularities of the UK TCZs are presented at the end of this report (see box 3, technical note 2).</p>					
<p>Terminal unit cost In 2016, the actual terminal unit cost in real terms (12.71 €2009) is -0.2% lower than planned in the PP (12.73 €2009). This difference results from the combination of higher than planned TNSUs (+4.6%) and higher than planned terminal costs (+4.3%, or +0.5 M€2009).</p>					
<p>Terminal service units Traffic risk sharing applies in the TCZ C. The difference between actual and planned TNSUs (+4.6%) falls outside the ±2% dead band, but is inside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of terminal revenues is therefore shared between the ATSP and the airspace users, with the gain retained by the ATSP amounting to +0.3 M€2009. When considering the most recent STATFOR forecasts (February 2017), it appears that traffic is likely to remain higher than planned throughout RP2.</p>					
<p>Terminal costs In nominal terms, actual terminal costs are +0.8% higher than planned. However, since the actual inflation index is lower than planned (-4.0 p.p.), the actual terminal costs are 4.3% higher than planned when expressed in €2009. NERL being the only entity for which costs are reported in TCZ C, the observed deviations between actual and planned costs are entirely driven by NERL. A detailed analysis of these deviations is provided in box 12. There are no costs exempt from cost-sharing reported for TCZ C.</p>					



UK - ZONE C: Terminal charging zone

Monitoring of terminal COST-EFFICIENCY for 2016

4. Terminal traffic monitoring (Actual 2015-2019 TNSUs compared to PP)

5. Terminal costs monitoring (2016 actuals compared to PP)

Costs by entity at TCZ level:

ATSP	4.3%
Other ANSPs	-
METSP	-
NSA	-
Total	4.3%

Costs by nature at ATSP level:

Staff	15.6%
Other operating costs	-4.1%
Depreciation	-0.3%
Cost of capital	-12.4%
Exceptional items	-
VFR exempted flights	-
Total	4.3%

6. Terminal costs exempt from cost sharing

Estimates ('000 €2009)		2015	2016	2017	2018	2019
by item	Pension	0	0			
	Interest rates on loans	0	0			
	Taxation law	0	0			
	New cost item required by law	0	0			
	International agreements	0	0			
by entity	ATSP	0	0			
	Other ANSP	0	0			
	METSP	0	0			
	NSA	0	0			
	Total costs exempt from cost sharing	0	0			

These costs will be recovered from (+) or reimbursed to (-) users if eligible after EC verification.

7. Terminal DUC 2016 vs. 2016 Unit Rate charged to users

UK - Zone C 2016 DUC vs. 2016 Chargeable Unit Rate (CUR) in national currency in nominal terms - GBP

The CUR charged to airspace users in 2016 is 13.73 £. This is +0.5% higher than the nominal DUC (13.66 £). The difference between these two figures (+0.07 £) relates to under recoveries from 2013 charged to airspace users in 2016.

In RP1, TCZ C was not included in the UK PP, and airspace users were charged based on a specific formula, different from that applicable to other TCZs in Europe. For RP2, the setup is different since UK included TCZ C in its PP and provided complete Reporting Tables comprising inter alia determined costs, traffic forecast and determined unit rates. The charging formula of TCZ C is therefore now aligned with that prevailing in other European TCZs, and other CUR adjustments will become visible in the forthcoming years.

These costs and adjustments are divided by the **forecast** TNSUs for 2016 as laid out in the performance plan.

8. Terminal DUC 2016 vs. 2016 Actual Unit Cost for users

UK - Zone C 2016 DUC vs. 2016 Actual Unit Cost for users in national currency in nominal terms - GBP

The actual unit cost incurred by airspace users (AUC-U) in respect of activities performed in 2016 (12.99 £) is -4.9% lower than the nominal DUC (13.66 £). The factors contributing to the observed difference are:

- the inflation adjustment (-0.44 £), which corresponds to the impact of a lower than planned inflation index for the year 2016, which will be reimbursed to airspace users in 2018; and,
- the traffic risk sharing adjustment (-0.23 £), which reflects the gain in revenues due to higher than planned traffic in 2016, which will also be reimbursed to airspace users in 2018.

These costs and adjustments are divided by the **actual** TNSUs in 2016.

UNITED KINGDOM: Terminal ATSP (NATS)

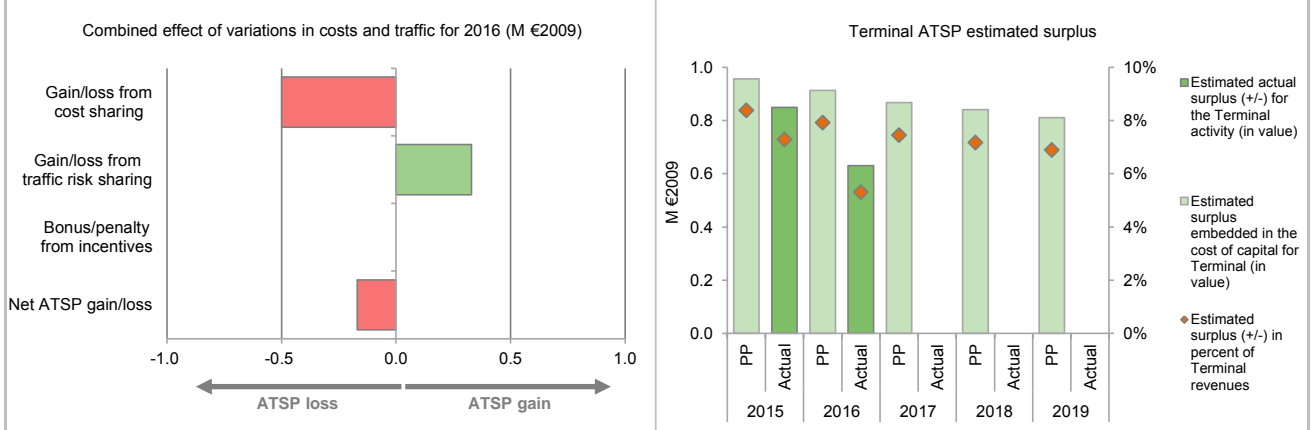
Monitoring of terminal COST-EFFICIENCY for 2016

9. Focus on ATSP: Net ATSP gain/loss on terminal ANS activity					
Cost sharing ('000 €2009)	2015	2016	2017	2018	2019
Determined costs for the ATSP (PP) - based on planned inflation	11 408	11 531			
Actual costs for the ATSP	11 673	12 031			
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	-265	-500			
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	0	0			
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	-265	-500			
Traffic risk sharing ('000 €2009)	2015	2016	2017	2018	2019
Difference in total service units (actual vs PP) %	2.6%	4.6%			
Determined costs for the ATSP (PP) - based on actual inflation	11 666	11 931			
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	254	330			
Incentives ('000 €2009)	2015	2016	2017	2018	2019
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives (bonus/penalty)	0	0			
Net ATSP gain(+)/loss(-) on terminal activity ('000 €2009)	-11	-170			
10. Focus on ATSP: Terminal ATSP estimated surplus *					
* This calculation of the economic surplus retained by the ATSP is based on the determined RoE and on the information provided in the Reporting Tables. This is different from the accounting profit/loss reported in the P&L accounts of the ATSP.					
ATSP estimated surplus ('000 €2009) from RP2 Performance Plan	2015P	2016P	2017P	2018P	2019P
Total asset base	21 911	20 928	19 885	19 265	18 591
Estimated proportion of financing through equity (in %)	40.0%	40.0%	40.0%	40.0%	40.0%
Estimated proportion of financing through equity (in value)	8 772	8 379	7 961	7 713	7 443
Estimated proportion of financing through debt (in %)	60.0%	60.0%	60.0%	60.0%	60.0%
Estimated proportion of financing through debt (in value)	13 139	12 550	11 924	11 552	11 148
Cost of capital pre-tax (in value)	1 285	1 227	1 166	1 130	1 090
Average interest on debt (in %)	2.5%	2.5%	2.5%	2.5%	2.5%
Interest on debt (in value)	328	314	298	289	279
Determined RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
Estimated surplus embedded in the cost of capital for terminal (in value)	956	913	868	841	811
Overall estimated surplus (+/-) for the terminal activity	956	913	868	841	811
Revenue/costs for the terminal activity	11 408	11 531	11 650	11 729	11 768
Estimated surplus (+/-) in percent of terminal revenues	8.4%	7.9%	7.4%	7.2%	6.9%
Estimated ex-ante RoE pre-tax rate (in %)	10.9%	10.9%	10.9%	10.9%	10.9%
ATSP estimated surplus ('000 €2009) based on actual data from Reporting Tables	2015A	2016A	2017A	2018A	2019A
Total asset base	19 730	18 349			
Estimated proportion of financing through equity (in %)	40.0%	40.0%			
Estimated proportion of financing through equity (in value)	7 892	7 340			
Estimated proportion of financing through debt (in %)	60.0%	60.0%			
Estimated proportion of financing through debt (in value)	11 838	11 009			
Cost of capital pre-tax (in value)	1 156	1 075			
Average interest on debt (in %)	2.5%	2.5%			
Interest on debt (in value)	296	275			
Determined RoE pre-tax rate (in %)	10.9%	10.9%			
Estimated surplus embedded in the cost of capital for terminal (in value)	860	800			
Net ATSP gain(+)/loss(-) on terminal activity	-11	-170			
Overall estimated surplus (+/-) for the terminal activity	849	630			
Revenue/costs for the terminal activity	11 662	11 861			
Estimated surplus (+/-) in percent of terminal revenues	7.3%	5.3%			
Estimated ex-post RoE pre-tax rate (in %)	10.8%	8.6%			

UNITED KINGDOM: Terminal ATSP (NATS)

Monitoring of terminal COST-EFFICIENCY for 2016

11. Focus on ATSP: Summary of ATSP gain/loss on terminal activity and estimated surplus



12. Focus on terminal ATSP: General conclusions

Actual 2016 NERL terminal costs in TCZ C vs. PP

NERL actual terminal costs in TCZ C are +4.3% (+0.5 M€2009) higher, in real terms, than planned in the PP. Based on the Additional Information provided with the terminal Reporting Tables, the main drivers for the observed difference are:

- higher staff costs (+15.6% or +0.8 M€2009) following increased demand;
- lower other operating costs (-4.1% or -0.1 M€2009) resulting from cost containment measures;
- lower depreciation costs (-0.3% or -0.01 M€2009); and,
- a lower cost of capital (-12.4% or -0.2 M€2009), mainly due to a lower asset base.

NERL 2016 net gain/loss on terminal activity in TCZ C

As shown in box 9, the terminal activity in TCZ C generated a net loss of -0.2 M€2009 in 2016. This is a combination of two elements:

- a loss of -0.5 M€2009 as a result of the cost sharing mechanism; and,
- a gain of +0.3 M€2009 as a result of traffic risk sharing mechanism.

NERL 2016 overall estimated surplus for the terminal activity in TCZ C

Ex-post, the overall estimated surplus taking into account the net loss from the terminal activity in TCZ C mentioned above (-0.2 M€2009) and the surplus embedded in the cost of capital (+0.8 M€2009) amounts to +0.6 M€2009 (5.3% of the 2016 terminal revenues). The resulting ex-post rate of return on equity is 8.6%, which is lower than the 10.9% planned in the PP.

UNITED KINGDOM: Gate-to-gate

Monitoring of gate-to-gate COST-EFFICIENCY for 2016

1. Monitoring of gate-to-gate ANS costs						
United Kingdom: Data from RP2 Performance Plan		2015D	2016D	2017D	2018D	2019D
Real en-route costs (EUR2009)		651 866 349	640 430 909	630 509 232	611 485 711	591 169 362
Real terminal costs (EUR2009)		11 408 395	11 530 593	11 650 176	11 728 661	11 768 119
Real gate-to-gate costs (EUR2009)		663 274 745	651 961 502	642 159 408	623 214 372	602 937 480
En-route share (%)		98.3%	98.2%	98.2%	98.1%	98.0%
United Kingdom: Actual data from Reporting Tables		2015A	2016A	2017A	2018A	2019A
Real en-route costs (EUR2009)		638 434 672	644 284 676			
Real terminal costs (EUR2009)		11 673 259	12 030 653			
Real gate-to-gate costs (EUR2009)		650 107 931	656 315 329			
En-route share (%)		98.2%	98.2%			
Difference between Actuals and Planned (Actuals vs. PP)		2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009) in value		-13 166 814	4 353 828			
in %		-2.0%	0.7%			
En-route share in p.p.		-0.1%	-0.1%			
2. Share of en-route and terminal in gate-to-gate actual costs (2016)						
<p>As noted in the introduction of the terminal analysis (see box 3), only TCZ C is included in this report since the actual data relating to TCZ B (airports where terminal ANS are provided on a contractual basis) was provided to the European Commission on a confidential basis. Therefore the gate-to-gate results shown in this page only reflect the aggregate view of UK en-route and terminal ANS costs, not the results of terminal ANS services provided at the nine airports comprised in TCZ B.</p> <p>In 2016, actual gate-to-gate ANS costs are +0.7% (+4.4 M€2009) higher than planned, reflecting higher en-route costs (+0.6%, or +3.9 M€2009) and higher TCZ C costs (+4.1%, or +0.5 M€2009).</p> <p>The actual share of en-route in gate-to-gate ANS costs (98.2%) is in line with that planned in the RP2 Performance Plan for 2015 (98.2%).</p> <p>For NERL, the estimated gate-to-gate economic surplus in 2016 amounts to 55.0 M€2009 (see boxes 10 for the detailed analysis at charging zone level), corresponding to 9.4% of gate-to-gate ANS revenues.</p>						
3. Technical notes on en-route and terminal information reported by United Kingdom						
<p>Note 1: The financial amount of the penalty reported in the Reporting Tables (-637 000 £ or -614 350 €2009) is different from that disclosed in the NSA Monitoring Report (-422 719 £). The Additional Information provided with the Reporting Tables indicates that the difference between the two figures (214 281 £) is due to an "adjustment". There is however no explanation of the rationale for this adjustment. In this report, the figure from the Reporting Tables has been used.</p> <p>Note 2: Information relating to UK TCZ B was provided to the European Commission on a confidential basis (nine airports – airports where terminal ANS are provided on a contractual basis) and is not part of this Monitoring Report. In 2016, there were three ANS providers in Zone B, NATS Services (NSL) at seven airports, self-supply by Birmingham airport and Air Navigation Solutions (ANS, a DFS subsidiary) at Gatwick airport from 1st March 2016.</p> <p>UK TCZ C (London Approach) is not directly comparable with other TCZs since the service provided is of a hybrid nature, making the transition between en-route and terminal services for the five London Airports (which are also part of TCZ B).</p>						