



Performance Review Body
designated by
the European Commission



PRB Annual Monitoring Report 2015

Volume 1: European Overview and PRB Recommendations



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1. INTRODUCTION & CONTEXT

1.1 About This Document

1.1.1 This Annual Monitoring Report 2015 is published by the Performance Review Body (PRB) of the Single European Sky (SES). It covers the first year of the second Reference Period (RP2) which runs for five years from 2015 to 2019. The report provides a summary of European Air Navigation Services (ANS) performance achieved for 2015 in the four Key Performance Areas (KPA) of safety, environment, capacity and cost-efficiency.

1.1.2 It provides the opinion of the PRB on progress and makes recommendations where necessary to the European Commission. It refers to, and uses data from, the States subject to the provisions of the SES Performance Scheme and data supplied by Eurocontrol.

1.1.3 This report highlights specific issues raised by the States. The PRB indicates the level of action required through an escalating progression of actions in the following way:

- **Advice and Guidance:** This is used where the PRB is of the opinion that they need to signal to the European Commission that a trend is observed which indicates that the target or trend may be at risk or that an alert level indicates some action may be necessary or considered. It is supported by observations on early indicative trends and may be corrected by interventions at local level. Advice and Guidance is considered as part of the normal active management of the system.
- **Observations:** This is used where it is evident from the data that an intervention may soon become necessary by the European Commission, or National Supervisory Authority, to correct a low impact issue or minor corrective action. It is used when the matter under consideration indicates that a recommendation may soon become necessary to correct an adverse trend, or where there is medium risk of target failure. Observations are supported by findings and PRB opinion.
- **Recommendations:** This is used where in the opinion of the PRB intervention action is required by the European Commission, and/or National Supervisory Authority and is supported by findings and opinion of the PRB. A suitable time limit is set for this form of recommendation.

In accordance with guidance given to the PRB by the European Commission these are also used for monitoring compliance issues under Article 3(4) of the Performance Regulation 390/2013 where the PRB is asked to report on non-compliance with the Performance Scheme.

1.1.4 Where a non-compliance issue is recognised the PRB indicates the level of response using the above methodology in the following way:

- **Level Three:** This is used where the PRB is of the opinion that they need to signal to the European Commission that a minor non-compliance is observed. It is supported by observations from the PRB and may be corrected by interventions at local level by the next annual report.
- **Level Two:** This is used where it is evident for the PRB that a medium non-compliance is observed which has an effect on the overall State delivery. Intervention may necessary by the European Commission, and/or National Supervisory Authority to correct the matter under consideration, which routinely should be addressed within six months of date of notification. It is supported by findings and opinion of the PRB.
- **Level One:** This is used where in the opinion of the PRB urgent intervention is required by the European Commission and/or National Supervisory Authority and is

supported by findings and opinion of the PRB. A suitable time limit is set for this form of recommendation.

1.1.5 The PRB Annual Monitoring Report consists of four Volumes:

- Volume 1 is a summary overview of the monitoring of 2015 and contains the key findings and recommendations by the PRB.
- Volume 2 presents main reports for all actors of the Single European Sky reporting process.
- Volume 3 analyses capital expenditure (CAPEX) for the main Air Traffic Service Providers (ATSP) across the EU and Eurocontrol.
- Volume 4 contains a detailed Safety Review, produced by the European Aviation Safety Agency (EASA) Safety performance team supported in transition by Eurocontrol.

1.1.6 The data used in this report are published on the PRB website or via the Performance Dashboard which is hosted by Eurocontrol. It provides reports and ANS performance data for all participants subject to the SES Performance Scheme. The dashboard can be accessed by clicking on this [link](#)ⁱ.

1.2 The SES Performance Scheme

1.2.1 RP2 is regulated by Article 11 of EC Regulation 549/2004 of the European Parliament and of the Council, and its supporting Implementing Rule, EC Regulation 390/2013, laying down a performance scheme for air navigation services and network functions. In addition for the purposes of financial review, the States are regulated by Articles 12, 14, 15 and 16 of EC Regulation 550/2004 of 10 March 2004 on the provision of air navigation services in the single European sky and its supporting Implementing Rule, EC Regulation 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services.

1.2.2 ANS performance targets are set under the SES Performance Scheme at Union-wide and/or at local (national or FAB) levels. Targets have been set for all KPAs during RP2 and can be found in Commission Implementing Decision 132/2014ⁱⁱ.

1.2.3 The National Supervisory Authorities (NSA), at FAB level, have reported on their monitoring of Performance Plans accepted by the European Commission. The Commission issued decisions on consistency and inconsistency of the performance targets of the plans submitted through the following legal instruments which are used for the assessment of monitoring reports:

- Commission Implementing Decision of 11 March 2014 setting the Union-wide performance targets for the air traffic management network and alert thresholds for the second reference period 2015-19.
- Commission Implementing Decision (EU) 2015/348 of 2 March 2015 concerning the consistency of certain targets included in the national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period.
- Commission Implementing Decision (EU) 2015/347 of 2 March 2015 concerning the inconsistency of certain targets included in the national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period and setting out recommendations for the revision of those targets

- Commission Implementing Decision (EU) 2016/599 of 15 April 2016 concerning the consistency of certain targets included in the revised national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period
- Commission Implementing Decision (EU) 2015/670 of 27 April 2015 on the compliance of unit rates for charging zones for 2015 under Article 17 of Implementing Regulation (EU) No 391/2013.
- In 2015 the plans of FABEC and Blue Med for capacity, and France, Germany, Netherlands, and Switzerland were not accepted. Where this is the case the details of their contribution to the EC is assessed using, where possible, indicative or reference values.
- EFTA Surveillance Authority Decision No 83/15/COL of 18 March 2015 concerning the consistency of certain targets included in the national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period [2016/1418]
- EFTA Surveillance Authority Decision No 221/15/COL of 3 June 2015 amending EFTA Surveillance Authority Decision No 83/15/COL concerning the consistency of certain targets included in the national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period [2016/1420]
- Commission Implementing Decision (EU) 2015/1055 of 30 June 2015 concerning the consistency of certain targets included in the national or functional airspace block plans submitted by Switzerland pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period.
- Commission Implementing Decision (EU) 2015/1056 of 30 June 2015 concerning the inconsistency of certain targets included in the national or functional airspace block plan submitted by Switzerland pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period and setting out recommendations for the revision of those targets.
- Commission Implementing Decision (EU) 2016/1940 of 6 October 2016 on the establishment of market conditions for terminal air navigation services in the United Kingdom under Article 3 of Implementing Regulation (EU) No 391/2013.

1.3 RP2 Performance Areas

1.3.1 Table 1 presents the Key Performance Areas (KPAs) and Performance Indicators (PIs) applicable for RP2 (2015-2019) as set out in Regulation (EU) No 390/2013. The PIs with Union-wide and/or local targets in RP2 are referred to as the Key Performance Indicators (KPIs).

		RP1		RP2		
		Level		Level		
		Union-wide	Local	Union-wide	FAB	National
KPIs	Effectiveness of Safety Management (EoSM)					
	Application of severity classification scheme (RAT methodology)					
	Just Culture (JC)					
PIs	Application of automatic data recording					
	Level of occurrence reporting					
	Separation Minima Infringements (SMI)					
	Runway Incursions (RI)					
	ATM-Specific Occurrences (ATM-S)					
	Airspace Infringements (AI)					
KPIs	Average horizontal en-route flight efficiency (actual trajectory)					
	Average horizontal en-route flight efficiency (last filed flight plan trajectory)					
PIs	Effectiveness of booking procedures for FUA					
	Rate of planning of conditional routes (CDRs)					
	Effective use of conditional routes (CDRs)					
	The additional time in taxi-out phase – <i>previously under Capacity KPA</i>					
	The additional time in terminal airspace (ASMA) – <i>previously under Capacity KPA</i>					
KPIs	Average minutes of en-route ATFM delay attributable to ANS					
	Average minutes of arrival ATFM delay attributable to terminal ANS					
PIs	The adherence to ATFM slots					
	The average minutes of ATC pre-departure delay.					
	The additional time in taxi-out phase – <i>now under Environment KPA</i>					
	The additional time in terminal airspace (ASMA) – <i>now under Environment KPA</i>					
KPIs	Average Determined Unit Cost (DUC) for en-route ANS					
	Average Determined Unit Cost (DUC) for terminal ANS					
PIs	Costs of EUROCONTROL					

Table 1: RP2 Performance indicators (= target = Reporting)

1.3.2 The PRB Annual Monitoring Report for 2015 refers to performance in the airspace shown in Figure 1, which is the geographical scope of the Union-wide targets for RP2.

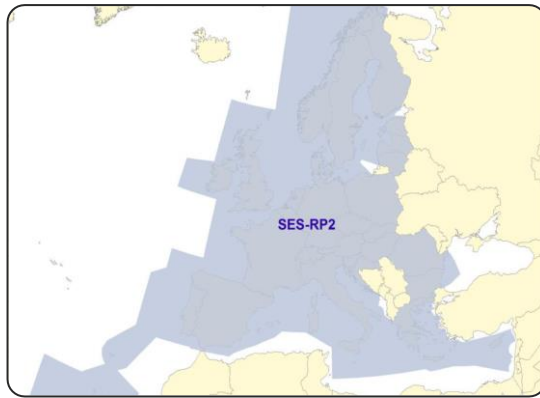


Figure 1: RP2 Geographical scope

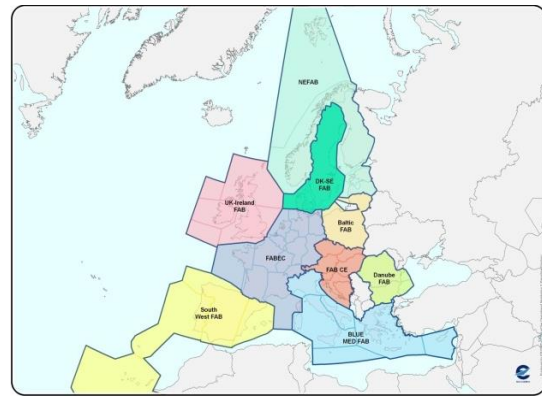


Figure 2: Functional Airspace Blocks (FABs)

1.3.3 The geographical scope covers the airspace controlled by the RP2 SES States in the ICAO EUR and AFI regions at the start of the reference period. Therefore, it includes the airspace of 9 FABs controlled by the 28 EU Member States, the airspace controlled by Norway and Switzerland in the ICAO EUR region, as well as the Canaries FIR (Spain), Bodø FIR (Norway) and NOTA/SOTA (UK/IRL).

1.4 2015 Operating Conditions - Key Facts

1.4.1 Figure 3 shows the average daily IFR flights in the RP1 and the RP2 area between 2008 and 2015. In the SES RP2 area (including Croatia), average daily IFR flights increased slightly in 2015 (+1.4% vs. 2014).

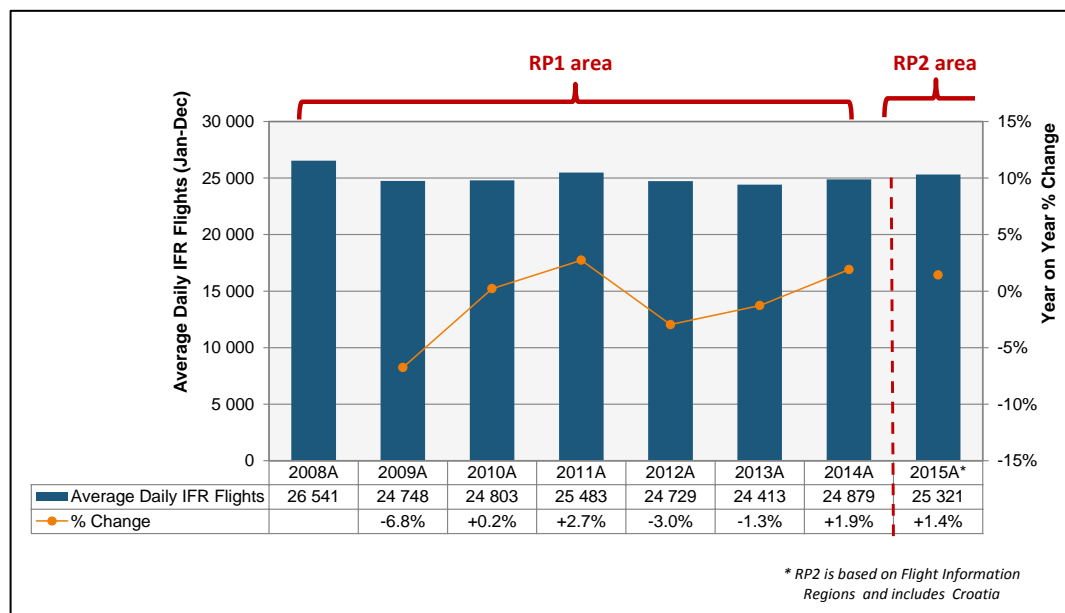


Figure 3: Traffic 2011-2015 (SES area)

1.4.2 The Union-wide average masks variations in traffic growth between FABs which were to some extent driven by the shift of traffic flows due to geopolitical instability particularly in the South East quadrant of the European Region.

1.4.3 Despite having one of the busiest third quarters on record in 2015, annual traffic levels still remained 5% below the pre-recession levels of 2008, showing continued weakness in the air travel industry.

- 1.4.4 Daily en-route Service Units (SUs) in the SES RP2 area also continued to grow in 2015 (+3.0% vs. 2014), as shown in Figure 4 below.

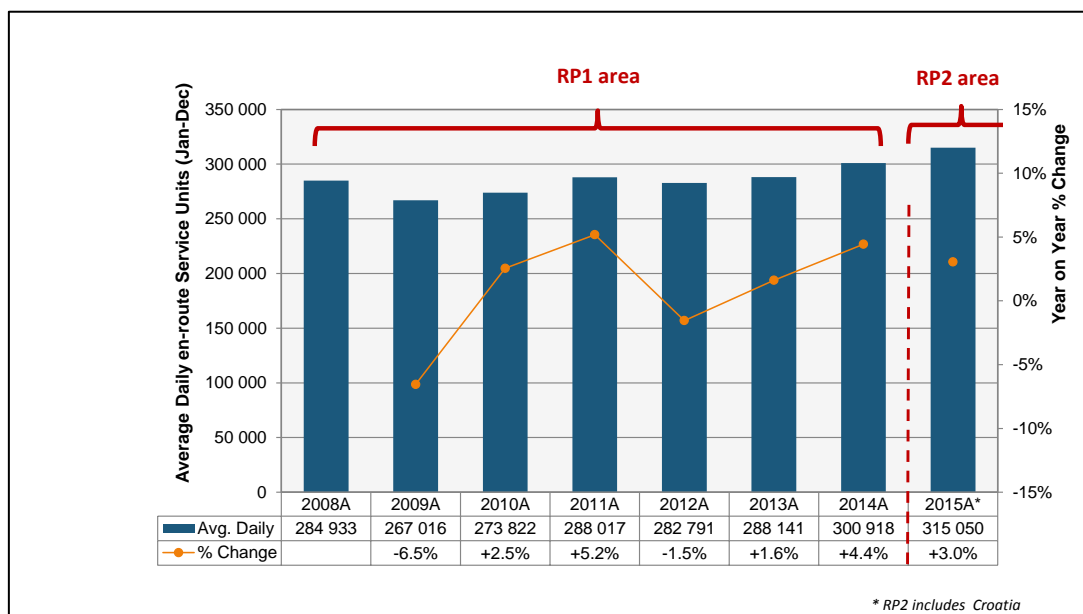


Figure 4: En-route service units 2011-2015 (SES area)

- 1.4.5 The higher growth in SUs (+3.0%) compared to IFR flights (+1.4%) in the SES RP2 area is due to increases in both Maximum Take-Off Weight (MTOW) and average distance flown. Due to this effect, total SUs in 2015 are higher than in 2008 whilst IFR flights are still below 2008 levels.
- 1.4.6 At the time of writing, FABEC plans for RP2 had not been accepted for RP2 in the areas of Capacity and Cost Efficiency and in Blue Med FAB for Capacity. This created difficulties in evaluating performance contribution for RP2 of these states. Corrective measures had been recommended to the European Commission.
- 1.4.7 Three States affected by Geopolitical crises which were unforeseeable at the time of adoption of initial plans (Poland and Bulgaria), and/or by traffic variation beyond the Alert threshold (Malta, Poland and Bulgaria) have filed requests with the European Commission to revise their plans based on Article 17 and Article 19 of the Performance Scheme (390/2013)

1.5 Summary of Achievements of Union-wide Performance Monitoring.

- 1.5.1 The summary information shown below relates to ANNEX 1 Section one of 390/2013.
- 1.5.2 **Safety:** There are no EU wide targets on safety applicable to 2015. Detailed analysis is provided in Volume 4.
- 1.5.3 A key finding during the review of safety is that the Polish Air Navigation Services Agency (PANSAs) has significantly decreased its effectiveness of safety management (-23% compared to the levels declared in previous years). The Polish CAA has reported in its Monitoring Report discrepancies between the information presented by PANSAs related to implementation and functioning of SMS and its findings during inspections conducted in the framework of the ongoing safety oversight of ATM/ANS. The CAA has challenged some of the ANSP's responses as the Polish CAA is particularly concerned about safety culture, understanding of safety management accountabilities by relevant staff and contractors and formal risk management processes within the ANSP. The Polish CAA and EASA will work

- closely together in the future and monitor these issues. This fact was considered as a key factor in the review of the Polish application for plan change.
- 1.5.4 No fatal accidents with ANS contribution were recorded in 2015 and there is a decreasing trend in the number of reported serious incidents continued further.
- 1.5.5 **Environment:** The indicative intermediate targets set for the average horizontal en-route flight efficiency of the actual trajectory (KEA) have been met at EU level, by the Network Manager and by four out of the nine FABs. The five remaining FABs have improved with respect to the 2012 baseline values.
- 1.5.6 The Union-wide indicative intermediate target set for the average horizontal en-route flight efficiency of the last filed flight plan (KEP) has not been met.
- 1.5.7 **Capacity:** The Union-wide target for en-route ATFM delay (0.5 minutes per flight) was not met. Average en-route ATFM delay in 2015 was 0.76 minutes per flight, an increase of almost 25% on 2014 results, for a corresponding traffic increase of 1.4%. Four of the nine FABs achieved their FAB targets, the remaining three did not. Two FABs do not have plans accepted for RP2.
- 1.5.8 **Cost Efficiency:** In 2015, the Union-wide cost-efficiency target (€56.64 €₂₀₀₉) was met. Actual en-route unit cost (52.85 €₂₀₀₉) was -6.7% lower than the Union-wide target and -4.5% lower than aggregated Performance Plans (55.33 €₂₀₀₉). Actual en-route costs were -2.5% (-157.6 M€₂₀₀₉) lower than the Determined Costs (6 235.1 M€₂₀₀₉), while the Total Service Units (TSUs) were +2.0% higher than planned. For terminal cost-efficiency, the Union-wide actual terminal unit cost (171.69 €₂₀₀₉) was -5.1% lower than planned in the RP2 PPs. This results from the combination of higher-than-planned TNSUs (+2.2%) and lower-than-planned terminal costs (-3.0%, or -33.1 M€₂₀₀₉).
- 1.5.9 A concern through the monitoring reports and additional information has been raised on the use of funds in Greece where it was discovered that there is a loan in existence paid by funds from Air Traffic Control receivables. This loan is undeclared in reporting tables and appears unrelated to ATM functionality. This has been investigated by the PRB and a report has been submitted to the European Commission.
- 1.5.10 Slovenia raised an issue about the use of IFRIC 12 of the International Accounting Standard. This guidance appears to contradict current practice and, as part of its monitoring report, the State requested a review by the PRB. The review concluded that at this stage it did not apply to the governance construct used by Slovenia. However, the mechanisms of IFRIC 12 have a number of facilities in them that could be used by the EC and it has been suggested that this should be examined by the EC in the context of RP3, and that it may already apply to UK NATS and ENAV. Further examination of this issue is discussed in the Volume 3 (CAPEX) report.
- 1.5.11 Although traffic was well above plans in 2015 and will continue to be so over RP2 even in the low growth scenario, the same underspend trend is observed in 2015: -27% on average¹. Continued under-investment looks bound for failure unless corrective actions are taken urgently.
- 1.5.12 Over the first three years of the SES Performance Scheme (RP1, 2012-14), CAPEX was €759 M, i.e. -25% below plans (see PRB Monitoring report 2014, Volume 3 - CAPEX). This under-investment occurred in a context where traffic was significantly lower than planned (-5% in 2012).

¹ There are significant differences across States; details can be found in next chapters.

- 1.5.13 CAPEX underspend is at a level which is causing concern, and driving calls from the airline industry for return of unspent capital.
- 1.5.14 The complexity of CAPEX management is causing concern within the Airspace User and ANSP community to ensure that capital projects are delivered. There is a perceived risk that the SESAR Deployment initiative will work against the SES objectives in the long-term. This perception is driven by concerns about the funded initiatives and their overall contribution to the performance of the system.
- 1.5.15 Concerns are being raised about return of funding to users. To date this is difficult to review as details of funding initiatives have not been provided to the PRB and this will need further review in future years. There are also concerns being raised by providers about the lack of incentive to apply for funding if it is expected to be returned immediately and in its entirety to users. This can pose a long-term risk. The risk can be characterised in the following way: Taking the 2015 reporting, the Union-wide calculated economic surplus for 2015 was 206 million euros. In addition, there was an estimated 274 million euros in underspent CAPEX on which there are calls from the industry to return. Furthermore, an estimated 300 million euros has been committed so far in grants to projects. This means that a total of 574 million euros would need to be considered as returnable to users in the coming years. This is further aggravated by the fact that the States who have incurred underspends are not always the ones with surpluses. Whilst this is a generality, it explains the concerns of the PRB towards a disruptive process to the overall intent of the SES initiatives.
- 1.5.16 Given the early stages of SESAR DM development, no data has been received from the SESAR DM on what money has been allocated to ANSP's and Eurocontrol from common project financing. As a result, the PRB have been unable to verify payments made which will need to be reimbursed to users. Common project financing of non-ANSP projects has not been disclosed to the PRB. As a result, the PRB are unable to project evolution of projects or their effect on the system and possible benefits in RP3.
- 1.5.17 The PRB therefore believes that there are significant latent issues being built within the current mechanisms which need a more thorough review and advise that this issue is investigated in the 2016 review to look at the evolution of CAPEX mechanisms with a view to inclusion of revised structures in the RP3 planning process to mitigate the risks.
- 1.5.18 Eastern European States are starting to experience deflation pressures on the economy deviating significantly from IMF forecasts on inflation.
- 1.5.19 Bulgaria has experienced high growth of traffic driven by geopolitical instability in its region. As a result, the NSA filed a change request for the plan due to the cumulative aspect of the risks. Bulgaria re-planned its determined costs against a number of changes in assumptions in traffic, risk assumptions on adjacent airspace, and inflation.
- 1.5.20 Malta filed a change request driven by its high growth, driven by geopolitical instability. The plan retained its determined costs and reforecast the traffic for the rest of the reference period.
- 1.5.21 Poland submitted a change request based on its review of performance which resulted in a fundamental re-planning. The primary driver was safety related issues as well as significant changes in traffic forecast assumptions and the difficulties faced under the current incorrect performance plan assumptions, in particular in respect of staff costs (including changes relating to legal action taken against the provider) and capex.

1.6 Summary of achievements for local target setting (FAB/State level)

1.6.1 The summary information shown below relates to ANNEX 1 Section Two of 390/2013.

1.6.2 Table 2 to Table 5 provide a summary of the performance in 2015 of FABs and States with respect to the targets indicated in their Performance Plans and shows where corrective measures have been reported in response to performance below the accepted plan target. These are used as indicative trends and assessment of delivered contribution.

Environment

KPI	EU INDIC. TARGET MET?	FAB PP TARGET MET?	STATE TARGET MET?	CORRECTIVE MEASURES REPORTED?	
KEA	Y	BALTIC	N	Lithuania	N
				Poland	N
		BLUEMED	N	Cyprus	N
				Greece	N
				Italy	N
				Malta	N
		DANUBE	Y		
		DK-SE	Y		
		FAB CE	Y		
		FABEC	N	Belgium/Lux	N
				France	N
				Germany	N
				The Netherlands	N
				Switzerland	N
NEFAB	N	Estonia	N		
		Finland	N		
		Latvia	N		
		Norway	N		
SW FAB	Y				
UK-IE	N	Ireland	N		
		UK	N		

Table 2: Achievement of Targets at FAB/State level - Environment

Capacity

KPI	EU TARGET MET?	FAB TARGET MET		STATE TARGET MET?	CORRECTIVE MEASURES REPORTED?	
En-route Delay	N	BALTIC	Y			
		BLUEMED	N		Cyprus	Y
					Greece	N
					Italy	N
					Malta	N
		DANUBE	Y			
		DK-SE	Y			
		FAB CE	Y			
		FABEC	N		Belgium/Lux	Y
					France	Y
					Germany	Y (MUAC Only)
					The Netherlands	Y (MUAC Only)
					Switzerland	N
NEFAB	Y					
SW FAB	N	Portugal	Y			
UK-IE	Y	Spain	Y			

Table 3: Achievement of Targets at FAB/State level - Capacity

Cost-Efficiency

KPI	EU TARGET MET?	FAB TARGET MET		ACTUAL UNIT COSTS LESS OR EQUAL THAN DETERMINED UNIT COSTS?		CORRECTIVE MEASURES REPORTED?
En-route DUC	Y	BALTIC		Lithuania	N	N
				Poland	N	Y
		BLUEMED		Cyprus	Y	
				Greece	N	Applied via EC discussions
				Italy	N	N ⁽¹⁾

		DANUBE		Malta	Y	
				Bulgaria	Y	
				Romania	Y	
		DK-SE		Denmark	Y	
				Sweden	N	N
		FAB CE		Austria	Y	
				Croatia	Y	
				Czech Republic	Y	
				Hungary	Y	
				Slovakia	Y	
				Slovenia	N	Y
		FABEC (2)		Belgium/Lux	Y	
				France	Y	
				Germany	Y	
				The Netherlands	Y	
				Switzerland	Y	
		NEFAB		Estonia	Y	
				Finland	N	N
				Latvia	Y	
				Norway	Y	
		SW FAB		Portugal	Y	
				Spain - Continental	Y	
				Spain - Canarias	N	N
UK-IE		Ireland	Y			
		UK	Y			

Table 4: Achievement of Targets at FAB/State level – En-route DUC

KPI	EU TARGET MET?	FAB TARGET MET	ACTUAL UNIT COSTS LESS OR EQUAL THAN DETERMINED UNIT COSTS?	CORRECTIVE MEASURES REPORTED?	
Terminal DUC	Not Applicable	BALTIC	Lithuania	Y	
			Poland	Y	
		BLUEMED	Cyprus	Y	
			Greece	Y	
			Italy TCZ1	Y	
			Italy TCZ2	Y	

			Malta	Y	
		DANUBE	Bulgaria	Y	
			Romania	N	Y
			Denmark	Y	
		DK-SE	Sweden	N	N
			Austria	Y	
		FAB CE	Croatia	N	N ⁽³⁾
			Czech Republic	N	Y
			Hungary	Y	
			Slovakia	Y	
			Slovenia	N	Y
				Belgium – Antwerp TCZ	Y
		FABEC	Belgium – Brussels	Y	
			Belgium – Charleroi	Y	
			Belgium – Liege	Y	
			Belgium, Oostende-Brugge	N	N ⁽⁴⁾
			Luxembourg	N	N
			France	Y	
			Germany	Y	
			The Netherlands	Y	
			Switzerland	Y	
				Estonia	Y
		NEFAB	Finland	Y	
			Latvia	Y	
			Norway	Y	
			Portugal	Y	
		SW FAB	Spain	N	N
			Ireland	Y	
		UK-IE	UK - TCZ C ⁽⁵⁾	Y	

Table 5: Achievement of Targets at FAB/State level – Terminal DUC

Notes	
(1)	The actual unit cost is higher than the DUC mainly due to an inflation effect.
(2)	FABEC States en-route cost-efficiency targets for RP2 have not been formally adopted by the EC. For these States, the information provided is based on the revised PP submitted in July 2015.
(3)	Actual unit cost is very close to the DUC

(4)	Terminal ANS in Oostende-Brugge TCZ was free of charge for the airspace users since TANS costs were 100% subsidised by the State or regional authorities in 2015
(5)	The UK data for TCZ B is confidential to the Commission under the terms of Articles 3, 9 and Annex III of Commission Implementing Regulation (EU) No 391/2013 for terminal services provided under market conditions (Commission Decision 2016/1940 of 6 October 2016).

KPA Analysis

2. SAFETY

2.1 Presentation of the Safety PIs and KPIs

2.1.1 In RP2, Union-wide targets were set for the following Safety Key Performance Indicators (SKPIs):

- SKPI1: The Effectiveness of Safety Management (EoSMS);
- SKPI2: the application of the severity classification based on the Risk Analysis Tool (RAT) methodology.

2.1.2 The EoSMS SKPI shows, at State level, the capability of authorities to manage the State Safety Programme (SSP) whenever it is in place and, at a service provision level, the service provider's capability to manage an effective Safety Management System (SMS). The application of the severity classification based on the RAT methodology (SKPI2) aims at measuring to what extent the RAT methodology has been applied to assign severity levels to reported ATM incidents by the ANSPs and the Member States. The level of Just Culture (JC) SPI aims at measuring the level of presence and corresponding level of absence of just culture at State and at ANSP level. The main objective of the indicator is to identify possible obstacles and impediments to the application of just culture at State and ANSP level.

2.1.3 In addition, the regulation introduces three Safety Performance Indicators (SPIs) without targets and for monitoring purposes. These are as follows:

- SPI1: The application by the air navigation service providers of automated safety data recording systems where available, which shall include, as a minimum monitoring of separation minima infringements and runway incursions. (This PI aims at measuring if ANSPs use these tools in a just culture environment to improve the information and analysis by the organisations' SMS).
- SPI2: The reporting by the Member States and air navigation service providers on the level of occurrence reporting, on an annual basis, aiming at measuring the level of reporting and addressing the issue of improvement of reporting culture; and
- SPI3: The number of, as a minimum, separation minima infringements, runway incursions, airspace infringements, and ATM-specific occurrences at all air traffic services units.

2.1.4 The overview of all S(K)PIs used in RP2 is presented in Table 1 in Section 1.3. Their associated targets are shown in Table 2 and Table 3 above.

2.2 ANS-Related Accidents and Serious Incidents

2.2.1 The data presented in this section relate to accidents and serious incidents.

2.2.2 Figure 5 shows the number of accidents and serious incidents between 2009 and 2015, (defined by ICAO Annex 13 and assigned to an occurrence by a European Accident Investigation Authority) that are related to the provision of ANS, alongside a rate calculated using the number of flight hours performed within the EU. In the seven year period analysed, there were two fatal accidents that were ANS-related, both in 2012; however in neither of them was ANS a contributory factor to the accident (definition of ANS-related and ANS-contribution and detailed scope of analysis are available in Volume 4 of this report).

2.2.3 The figure also shows an overall decreasing trend in the number of serious incidents since 2010 to reach a stabilised level around the last three years, whereas the number of accidents has remained approximately static with fluctuations within the period.

2.2.4 Overall, historical movement data provided by EUROCONTROL and serious incident data from EASA indicate that in a ten year period, both the number and rate of serious incidents has reduced. Despite the reversal in the decreasing trend of serious incidents shown in 2014 and in the overall accident and serious incident rate, the figures appear to return to the trend observed in 2013.

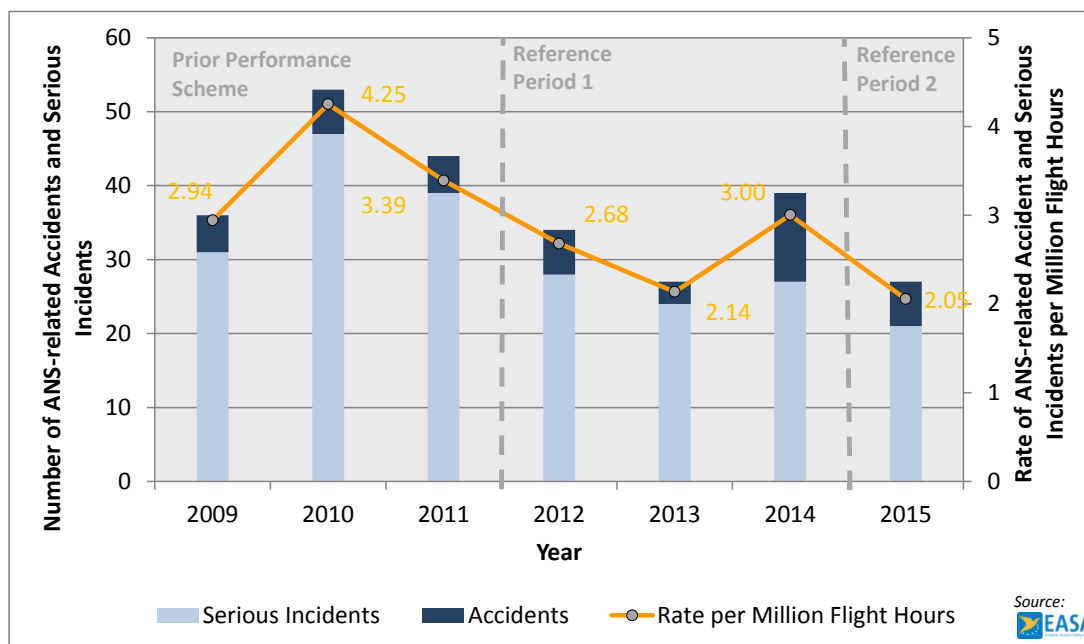


Figure 5: ANS related accidents and serious incidents (2009-2015)

2.2.5 Although presented alongside one another, the accidents and serious incidents that the data comprises are each very different in their characteristics. Serious incidents are often a better measure of the performance of the ANS system, because they relate more closely to ANS itself. Preliminary figures of 2015 suggest a better level of ANS safety performance compared with the previous six years.

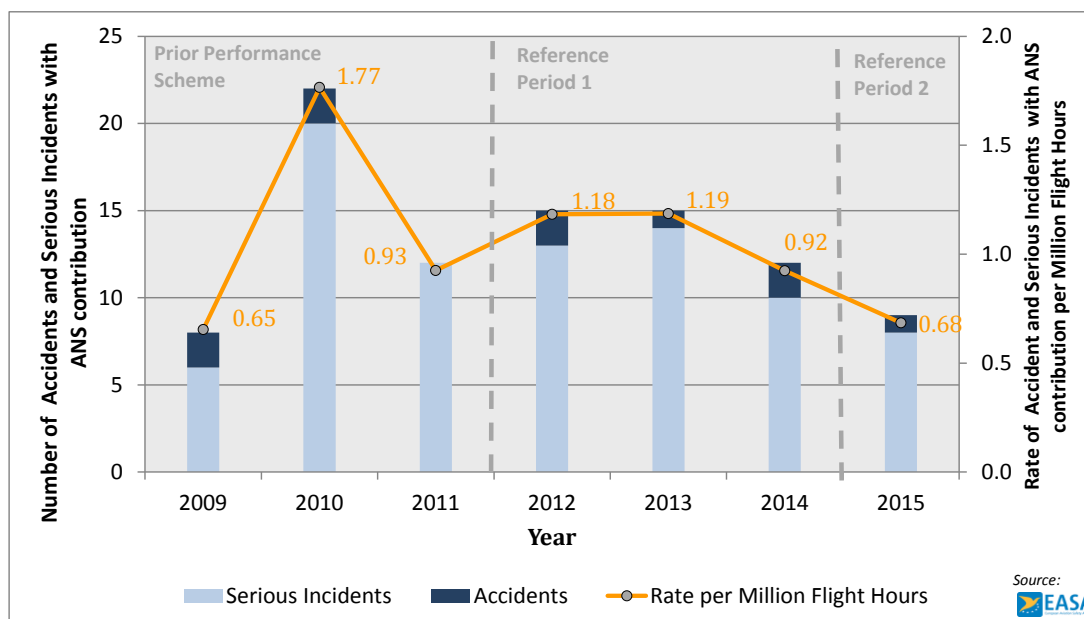


Figure 6: ANS contribution accidents and serious incidents (2009-2015)

- 2.2.6 Overall the safety reporting environment is changing in Europe, due to the introduction of the new Occurrence Reporting Scheme in November 2015 and it has to be accepted that the next few years will be a transition phase. During this time, in order to maintain and improve European reporting, it is important that actors responsible for the collection of safety data work together in order to create an optimal solution.
- 2.2.7 During this transition phase, availability, completeness and quality of safety data may change if there are no appropriate arrangements in place between all parties involved in the process. Therefore, the quality and completeness of the databases used will be monitored closely and the choice of databases might change in the future.
- 2.2.8 Note that more detailed analyses of ANS accidents and serious incidents are available in Volume 4 of this report.

2.3 Effectiveness of Safety Management

- 2.3.1 All 30 States and 30 ANSPs filled in the questionnaires used for the measurement of the EoSM SKPI in accordance with AMC/GM for the Implementation and Measurement of Safety Key Performance Indicators (EASA Decision 2011/017R, amended by ED Decision 2014/035/R and ED Decision 2015/028/R). In accordance with the AMC, the responses of all States have been verified by EASA while the responses of the ANSPs have been verified by the State Competent Authorities.
- 2.3.2 The following sections contain the analysis of the EoSM results provided by the States and ANSPs. Note that the EoSM scores provided by States were subject to EASA review using the data from the audits and the follow-up of the corrective measures. Results of this verification exercise at State-level can be found in Volume 2 of this report.
- 2.3.3 Figure 7 and Figure 8 show the EoSM results of States and ANSP respectively in 2015. The lowest EoSM Score provided by the individual States in 2015 is 42 with nine of the States scoring below 50 and the highest EoSM score at State level in 2015 is 81. These values are not directly comparable with RP1 values (self-assessed score provided by States); the reason is that during RP1 EASA did not change the self-assessed scores provided by the States. This year, EASA has challenged all self-assessed scores including D and E with the

exception of the questions Q3.8 (Safety Assurance), Q5.1 and Q5.2 (Safety Culture), all of them related to the existence and measurement of a safety culture. This means that State responses were adjusted (if necessary) after EASA verification.

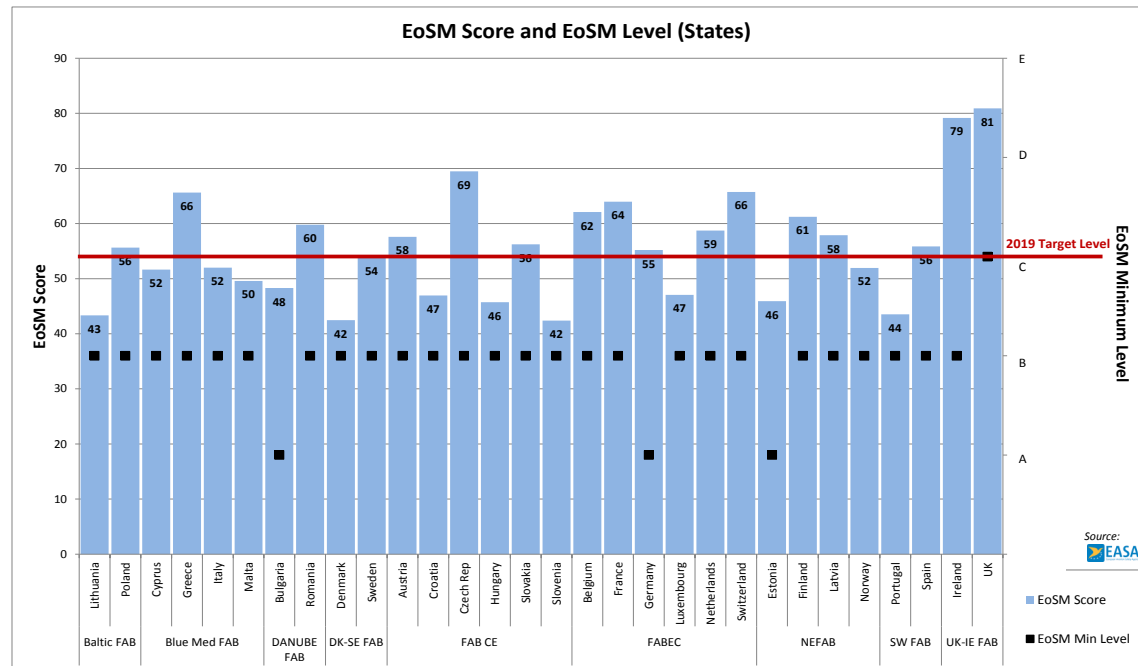


Figure 7: 2015 Effectiveness of Safety Management for States

- 2.3.4 As it is important to look at the results of EoS M both in terms of EoS M overall Maturity Score and in terms of Maturity Level, and as the RP2 has introduced targets to be achieved by 2019 on EoS M Level, Figure 7 on the second axis shows EoS M Minimum Level achieved by each State (EoS M scores (blue bars) vs. EoS M minimum Maturity Level achieved (on the second axis – black dots)).
- 2.3.5 Figure 7 supports the observation that some core elements of the safety oversight system are still missing in many States. These elements are closely monitored by EASA as part of its obligations.
- 2.3.6 Analysis of the overall EoS M Minimum Maturity Level Achieved further shows that only one (1) State is already at Level C (Figure 7). Even if Component 5 – *Safety Culture*, is excluded from analysis (as the most difficult one to verify) the situation does not change very much. There are still approximately 80% of States below the 2019 RP2 safety target level.
- 2.3.7 The minimum effectiveness Score, by the individual ANSPs in 2015, is 24 with only one (1) ANSP scoring below 50 (PANSAs). The maximum effectiveness score at ANSP level in 2015 is 92 (Figure 8).
- 2.3.8 Analysis of the overall EoS M Minimum Maturity Level Achieved by ANSPs shows that 10 ANSPs have already achieved the 2019 EoS M target for all other Management Objectives (MOs) (other four besides Safety Culture), and that all except one (1) State are already at Level C for Safety Culture, which is the 2019 target level.

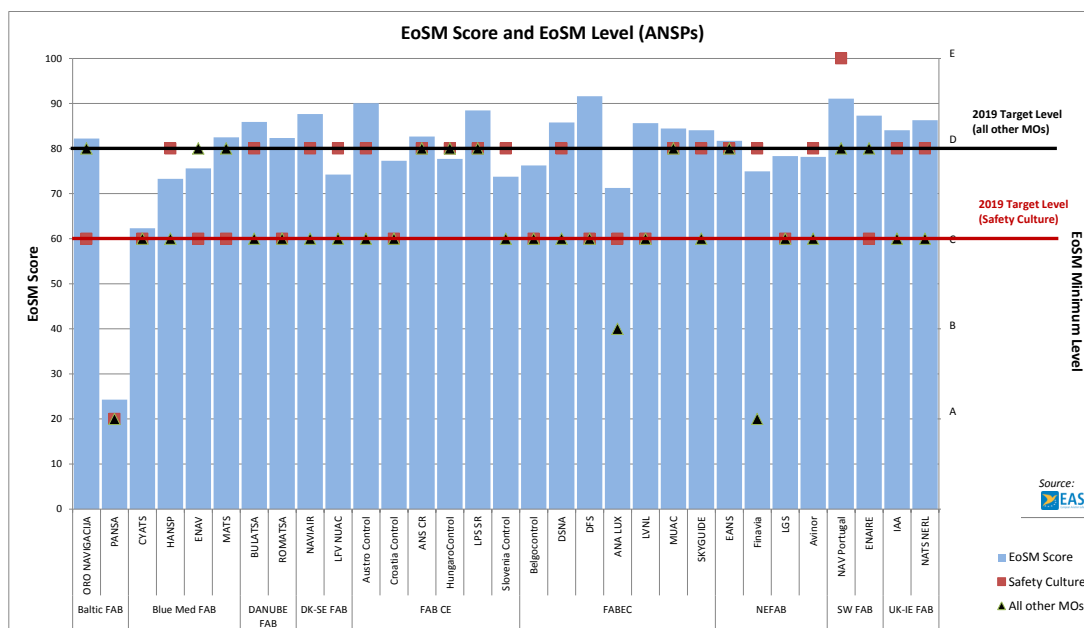


Figure 8: 2015 Effectiveness of Safety Management for ANSPs

2.3.9 Note that more detailed results of EASA EoS M review for each State are available in Volume 2 and Volume 4 of this report.

2.4 Application of RAT Methodology

2.4.1 In accordance with Commission Regulation (EU) No 390/2013, States are required to report the proportion of SMIs, RIs and ATM-S for which the severity classification was assessed using the RAT methodology.

2.4.2 In the first year of RP2 monitoring, the AST reporting mechanism is still used as the main vehicle for reporting the application of severity classification using the RAT methodology.

2.4.3 In RP2 several changes have been introduced to the monitoring of the application of the RAT methodology for deriving the severity for the reported occurrences: the RAT methodology is only mandatory for deriving the severity of A, B and C reported SMIs and RIs, and AA, A, B and C severity for ATM-S and Regulation (EU) No. 390/2013 (hence, including the use of the RAT Methodology) may not be applicable at airports and traffic units with less than 70,000 IFR movements per year.

2.4.4 From the Union-wide perspective and taken all occurrences reported collectively targets for 2017, as per Commission Implementing Decision (EU) 2015/19, are already achieved, except for ATM Overall for runway incursions and ATM-specific occurrences, which both are only 4% below the target (Figure 9).

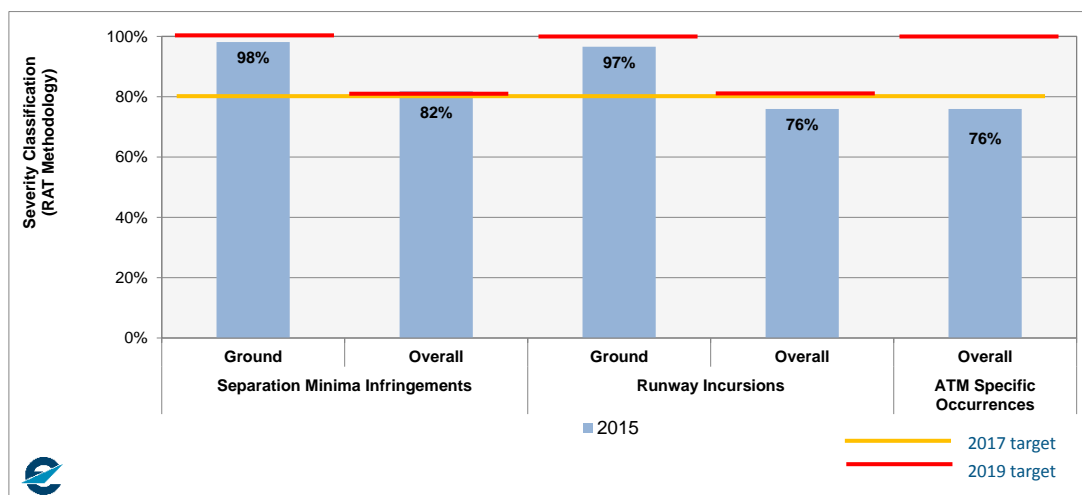


Figure 9: 2015 EU averages for severity assessment using RAT methodology

2.4.5 Note that more detailed results of the RAT methodology application are available in Volume 4 of this report.

2.5 PRB Findings

- 2.5.1 The safety reporting environment is changing in Europe due to introduction of the new Occurrence Reporting Scheme in November 2015, and it has to be accepted that the next few years will be a transition phase. During this time, in order to maintain and improve European reporting, it is important that actors responsible for the collection of safety data work together in order to create an optimum solution.
- 2.5.2 During this transition phase, availability, completeness and quality of safety data may change if there are no appropriate arrangements in place between all parties involved in the process.
- 2.5.3 The analysis of ANS accidents and serious incidents shows an overall decreasing trend in the number of serious incidents since 2010, whilst the number of accidents has remained approximately static with fluctuations within the analysed period.
- 2.5.4 Monitoring of trends of, as a minimum, separation minima infringements, runway incursions, airspace infringements, and ATM-specific occurrences at all air traffic services units, throughout the course of RP2, may be used to monitor whether reporting rates are improving and whether the risks are increasing. On the other hand, the trends might show whether the occurrence reporting regulation and subsequently the submitted data into the ECR are improving in terms of both quality and completeness.
- 2.5.5 The Polish Air Navigation Services Agency (PANSAs) has a significant decrease in effectiveness of safety management level (23%) - comparing to the levels declared in previous years. The Polish CAA, in its Monitoring Report, reports discrepancies between the information presented by PANSAs related to implementation and functioning of SMS and its findings during inspections conducted in the framework of the ongoing safety oversight of ATM/ANS. Hence, the CAA has challenged some of the ANSP's responses as the Polish CAA is particularly concerned about safety culture, understanding of safety management accountabilities by relevant staff and contractors and formal risk management process within the ANSP.
- 2.5.6 From the Union-wide perspective and taken all occurrences reported collectively, targets for 2017, as per Commission Implementing Decision (EU) 2015/19, are already achieved,

except for ATM Overall for runway incursions and ATM-specific occurrences, which both are only 4% below the target.

- 2.5.7 In addition, the RAT methodology application targets for 2017 and 2019 have already been achieved in full by five (5) FABs: Baltic FAB, Danube FAB, FAB CE, FABEC, NEFAB and UK-Ireland FAB.

2.6 PRB Recommendations

- 2.6.1 The PRB advises all States that, in accordance with the provisions of Article 21.1 and 21.2 of the Regulation (EU) 390/2013, they have to improve the completeness of safety data reported to EASA for the Performance Scheme.
- 2.6.2 The PRB advises that the Commission to ensure that arrangements are put in place during RP2 between all parties involved in the process of safety data, to ensure that during RP2, availability, completeness and quality of safety data reported to the Performance Scheme improves on European level.
- 2.6.3 The PRB observes that PANSAs have a significant lower score and level for the EoS safety indicator than those reported in previous years, as a result of the Polish CAA oversight. To reverse this trend, PANSAs will need to ensure that measures are put in place that will improve the EoS indicator. The PRB advises the Commission to closely monitor safety management implementation levels by PANSAs in the next years of RP2 as to ensure that the measures are effective in reaching the targets in 2019. This can be done by way of inspections and audits by EASA and/or the NSA to track progress towards achieving the target set for EoS.

3. ENVIRONMENT

3.1 Presentation of the Environment PIs and KPIs

3.1.1 The targets for RP2 Environmental indicator at Union-wide level are defined in article 2 of Commission Implementing Decision of 11 March 2014 setting the Union-wide performance targets for the air traffic management network and alert thresholds for RP2, giving two KPIs for horizontal en-route flight efficiency at Union-wide level:

- **KEA:** The average horizontal en-route flight efficiency of the **actual** trajectory, and;
- **KEP:** The average horizontal en-route flight efficiency of the **last filed flight plan** trajectory.

3.1.2 For local target setting and performance monitoring, only the KEA is defined as a KPI for horizontal flight efficiency at FAB level.

3.1.3 Annex Two of Performance Regulation also defines a number of performance indicators related to the operational performance at and around airports, which shall be monitored at both European and local levels (i.e. national level with a breakdown at airport level). As concerns Environment the additional time in the taxi-out phase and additional time in terminal airspace is monitored at local level.

3.1.4 Next to the obvious emissions, inefficiencies in terms of higher additional times can additionally contribute to the noise exposure during the departure phase (i.e. taxi-out) and arrival phase (i.e. ASMA). The overview of all (K)PIs used in RP2 is presented in Table 1 in Section 1.3. Their associated targets are shown in Table 4.

3.2 Horizontal En-route Flight Efficiency

3.2.1 Table 6 provides the performance achieved by the different FABs and Network Manager as measured by the KEA indicator.

FAB	2012	IMPROVEMENT 2012-2019	2015	2016	2017	2018	2019
Baltic FAB	1.61%	0.25%	1.50%	1.47%	1.44%	1.40%	1.36%
			1.60%	---	---	---	---
BLUEMED FAB	3.02%	0.57%	2.78%	2.70%	2.62%	2.54%	2.45%
			2.80%	---	---	---	---
DANUBE FAB	1.69%	0.32%	1.55%	1.50%	1.46%	1.41%	1.37%
			1.26%	---	---	---	---
DK-SE FAB	1.20%	0.01%	1.20%	1.20%	1.20%	1.20%	1.19%
			1.18%	---	---	---	---
FAB CE	2.13%	0.32%	1.99%	1.94%	1.90%	1.85%	1.81%
			1.91%	---	---	---	---
FABEC	3.56%	0.60%	3.30%	3.22%	3.14%	3.05%	2.96%
			3.34%	---	---	---	---
NEFAB	1.44%	0.22%	1.35%	1.32%	1.29%	1.26%	1.22%
			1.40%	---	---	---	---
SW FAB	4.27%	0.99%	3.85%	3.71%	3.57%	3.43%	3.28%

FAB	2012	IMPROVEMENT 2012-2019	2015	2016	2017	2018	2019
			3.39%	---	---	---	---
UK-Ireland FAB	3.64%	0.65%	3.36%	3.27%	3.18%	3.09%	2.99%
			3.47%	---	---	---	---
SES area			2.96%	2.87%	2.78%	2.69%	2.60%
			2.80%	---	---	---	---

Table 6: KEA Performance by FAB

3.2.2 Targets have been met by four of the nine FABs, with values which would make them meet the target also for 2016 (and beyond). The five FABs missing the targets have nonetheless improved with respect to the 2012 baseline values; two of them started from a low value of inefficiency and are still well below the average. The Network Manager has also successfully met the target value for the SES area. The targets for 2015 are indicative, however as the target was missed in RP1 and the continuation into RP2 is a value exceeding the indicative target this suggests that local action at FAB level is required to analyse the reasons for degraded performance is required to correct the trend. The PRB advise that this should be addressed by the next reporting cycle.

3.2.3 The following graph shows the evolution of KEP and KEA for the SES RP2 area.

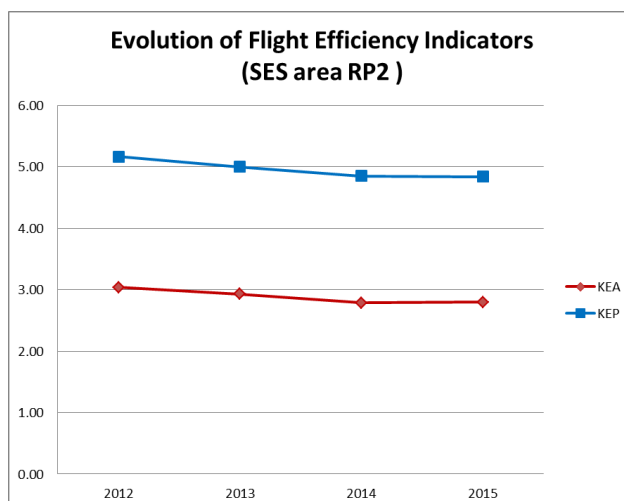


Figure 10: Evolution of indicators

3.2.4 The KEP indicator, which is based on flight plans, as shown in Table 7. While the target has been met for the KEA indicator, the target has not been met for the KEP indicator.

AREA	INDICATOR	2015	2016	2017	2018	2019
SES	KEP	4.78%	4.61%	4.44%	4.27%	4.10%
		4.84%	---	---	---	---
	KEA	2.96%	2.87%	2.78%	2.69%	2.60%
		2.80%	---	---	---	---

Table 7: KEP & KEA Performance at Union-wide level

3.2.5 Like KEA the defined target applies as of 2019 but this is an indication that local review of contributions is required to ascertain the causes of the degradation. Once ascertained,

suitable corrective measures could be defined at network and local levels. The PRB is of the opinion that a key factor in this cost displacement as airlines are using planning techniques to optimise costs. This leads to improvements during flight ops by tactical managers. This is to be welcomed but it suggests that a perverse behaviour is observed due to cost efficiency interdependency. Further review is necessary to investigate this issue. The PRB advise that this issue should be studied further to ascertain the right control mechanisms to address this issue.

3.3 Effective Use of Conditional Routes

3.3.1 The Network Manager reports the proportion of flights planning to use conditional routes (CDRs) as the Rate of Aircraft Interested (RAI) below.

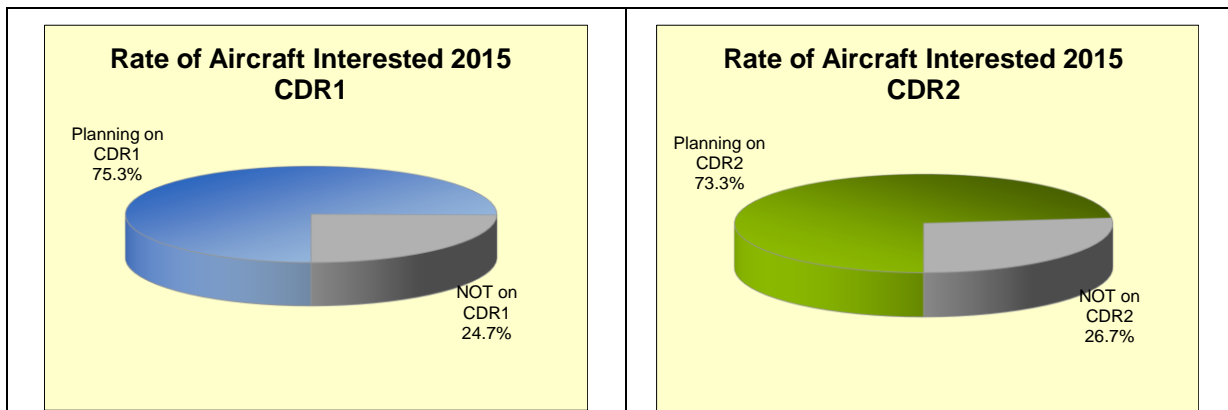


Figure 11: Ratio of flights planned via Conditional Routes (RAI)

3.3.2 The Network Manager reports the proportion of flights that actually used conditional routes (CDRs) as the Rate of Actual Use (RAU) below.

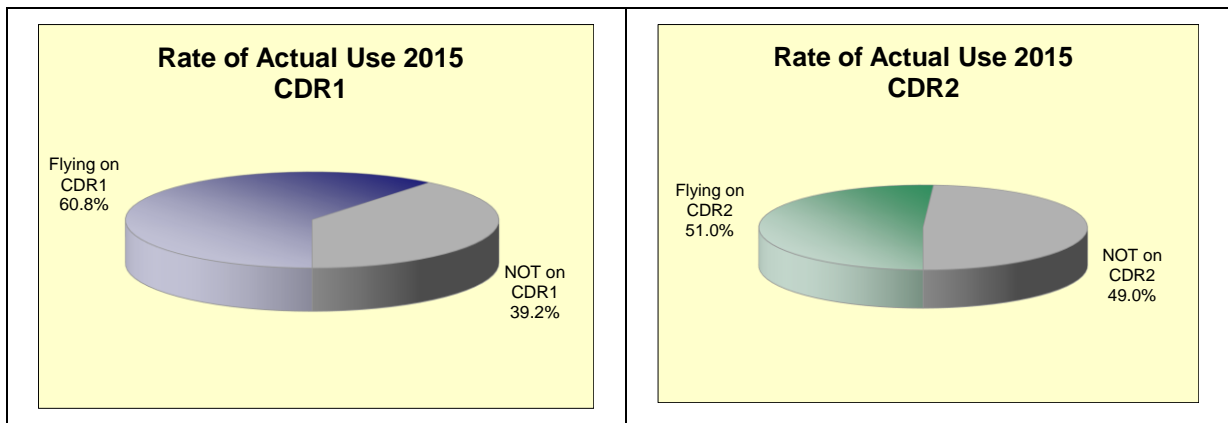


Figure 12: Ratio of flights actually using Conditional Routes (RAU)

3.3.3 No information was available at local level: either FAB or State. With the spread of Free Route Airspace throughout the Network, the concept of CDRs may no longer be relevant. In the PRB Annual Monitoring Report 2014, the PRB recommended that this indicator should be reviewed in terms of effectiveness in reporting on ANS performance. In this review the PRB advise the Commission to consider removal of this indicator as no longer required.

3.4 Effective Booking Procedures

- 3.4.1 Effective booking procedures are presented for each State in Volume 2 of this Monitoring Report. Some States did not provide any of the requested information. For further details on this area please consult the reports in Volume 2 as meaningful Union-wide analysis is ineffective.

3.5 Civil Military Dimension of the Plan

- 3.5.1 Article 11.3.(f) of the Performance Regulation 390/2013 mandates Performance Plans to include a description of the civil-military dimension of the plan describing the performance of flexible use of airspace (FUA) application in order to increase capacity with due regard to military mission effectiveness.
- 3.5.2 The FAB monitoring templates requested FABs and States to provide information on how capacity has been increased through cooperation and coordination between civil and military stakeholders.
- 3.5.3 The PRB notes that, although several FABs, and States, reported on existing civil-military arrangements providing information on how civil-military cooperation, and coordination, has actually increased capacity, the reporting is minimal. Discussions with the military cite a number of confidential reasons for this in a few countries which need to be respected. In others, reporting is minimal as there is little military activity. The PRB have indicated in its RP3 white paper that this issue needs to be addressed and an improved mechanism created to assess military support to civil operations. These discussions, processed through the European Defence Agency acting as observer on behalf of the military have been very productive, and suggest that a number of opportunities exist for improvement and these should be reviewed by the PRB over the coming year. The PRB suggest that these arrangements could benefit by being formalized in the new PRB arrangements.
- 3.5.4 The PRB is aware that work is ongoing in this area at local level to improve the indicators to measure the effectiveness of the Flexible Use of Airspace. An opportunity to improve this could be considered for RP3. The Commission could consider in conjunction with the local initiatives that there should be a review organized to bring together the concepts of the military dimension and the civil aspects for delivery by 2019.

3.6 Application of FUA

- 3.6.1 Annex V paragraph 1.1(j) of the Performance Regulation requires National Supervisory Authorities to provide information on how the FUA concept is applied by the national/FAB authorities to provide the optimum benefit for both civil and military airspace users.
- 3.6.2 Paragraph 1.2 of the same Regulation requires NSAs to submit their yearly survey on the application of the FUA concept.
- 3.6.3 The FAB monitoring template requested FABs and States to provide information on how the States review their application of FUA. The responses suggest that this area of reporting is problematic and thus will need to be reviewed as a process this coming year to improve the flow and reduce bureaucracy.
- 3.6.4 The PRB observes the inconsistent and varied reporting by the states on this subject and the general absence of meaningful annual review processes on the application of FUA by the States and the PRB. The Commission is advised to review this reporting with the

European Defence Agency to either improve the reporting of information, or remove the requirement.

3.7 Implementation of Operational Airport Data Flow

- 3.7.1 Across Europe, the operational data flow for airports is not yet fully implemented and its relevance to the EU has been questioned by small operators, as the implementation of data submission is not without additional cost. Details of responses can be found in Volume 2 for each SES Member State. Accordingly, the indicator for the average additional time in the taxi-out phase and terminal airspace cannot be readily determined for all airports subject to RP2. The aggregation of the indicators on national or Union-wide level is therefore of little value at this stage as meaningful analysis is not possible. (cf. Table 8). The PRB observes that no impact statement was given during the implementation of this requirement, suggesting that the value of data versus the complexity and cost of obtaining it is disproportionate. This issue should be examined with small airport operators to review the effectiveness of this measure and its value to network wide oversight.
- 3.7.2 The national and Union-wide averages of the performance indicators are included in this section in order to provide a high-level trend. It needs to be acknowledged that these averages may hide significant variances between the airports due to local specificities (e.g. prevailing operating conditions or constraints).

STATE	# AIRPORTS	AVG. ADD. TAXI-OUT TIME (MIN. PER DEPT.)	AIRPORTS WITH VALID DATA	% AIRPORTS WITH VALID DATA	AVG. ADD. ASMA TIME (MIN. PER ARRIVAL)	AIRPORTS WITH VALID DATA	% AIRPORTS WITH VALID DATA
Austria	6		1	16.7%		1	16.7%
Belgium	5		1	20.0%		1	20.0%
Bulgaria	1	1.32	1	100.0%	0.36	1	100.0%
Croatia	2		0	0.0%		0	0.0%
Cyprus	2		0	0.0%		0	0.0%
Czech Republic	4		1	25.0%		1	25.0%
Denmark	1	1.92	1	100.0%	1.48	1	100.0%
Estonia	2		0	0.0%		0	0.0%
Finland	1	1.97	1	100.0%	1.06	1	100.0%
France	60		4	6.7%		5	8.3%
Germany	16		11	68.8%		9	56.3%
Greece	1	1.16	1	100.0%	0.82	1	100.0%
Hungary	1	1.11	1	100.0%	0.59	1	100.0%
Ireland	3		1	33.3%		1	33.3%
Italy	5		3	60.0%		3	60.0%
Latvia	3		1	33.3%		1	33.3%
Lithuania	4		0	0.0%		0	0.0%
Luxembourg	1		0	0.0%	0.50	1	100.0%
Malta	1		0	0.0%	0.46	1	100.0%
Netherlands	4		1	25.0%		1	25.0%
Norway	4		0	0.0%	1.82	4	100.0%
Poland	14		1	7.1%		0	0.0%
Portugal	9		2	22.2%		2	22.2%
Romania	2		0	0.0%		1	50.0%
Slovakia	1		0	0.0%	0.64	1	100.0%
Slovenia	3		0	0.0%		1	33.3%
Spain	5	3.40	5	100.0%	1.38	5	100.0%
Sweden	1	1.59	1	100.0%	3.00	1	100.0%
Switzerland	2	2.91	2	100.0%	2.77	2	100.0%
United Kingdom	9	4.99	9	100.0%		8	88.9%

Table 8: Additional Taxi-Out time & Additional ASMA time & Implementation of Airport Operator Data Flow

3.7.3 Table 8 provides a summary of the implementation status of the airport operator data flow (i.e. percentage of airports within the scope of performance monitoring under RP2). The table does not show a national aggregation if one or more airports have not yet established the data flow. Accordingly, aggregated results, i.e. national, FAB, and the Union-wide level may not be representative (e.g. Figure 13, Figure 14).

3.8 Additional Time in Taxi-Out Phase and Terminal Airspace (ASMA)

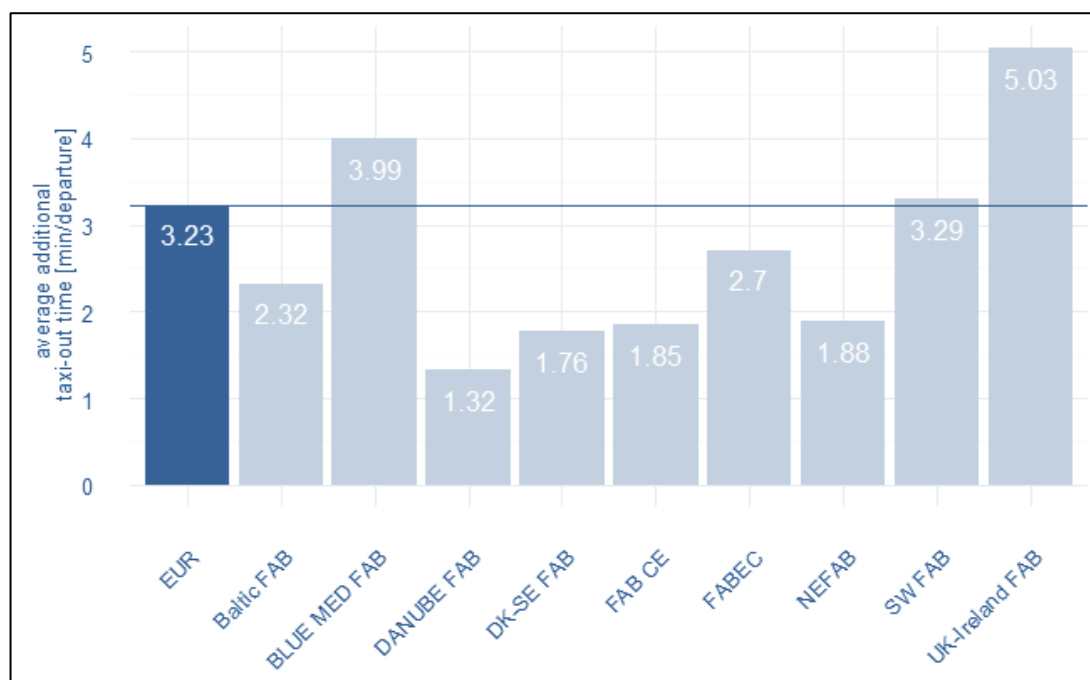


Figure 13: Additional Taxi-Out Time – European Level (2015)

- 3.8.1 Based on the data available, the estimated European average additional taxi-out time is 3.23 minutes per departure. These averages are based on all airports within the FAB for which data was available and the indicators could be calculated. Across Europe, the BLUE MED and UK-Ireland FABs show an estimate for the average additional taxi-out time of 3.99 or 5.03 min./departure respectively that exceeds the European average significantly. With the exception of SW FAB (approximately the same level as the European average), all other FABs show a lower level of average additional taxi-out time. It is noteworthy that the FAB and European aggregations can mask the local performance. The latter is accessible in Volume 2 on a FAB and national level.
- 3.8.2 Amongst the States that have successfully established the reporting for the respective airports (cf. Table 8), a considerable high level of additional taxi-out time of more than 2 minutes per departure can be observed for the United Kingdom (i.e. 4.99 min./departure), Spain (i.e. 3.4 min./departure), and Switzerland (i.e. 2.91 min./departure). These national values are driven by the performance observed at the major airports, e.g. United Kingdom: London Heathrow (EGLL) and London Gatwick (EGKK), Spain: Madrid (LEMD) and Barcelona (LEBL), and Switzerland: Zurich (LSZH) and Geneva (LSGG).
- 3.8.3 Across Europe (cf. Table 9), next to London Heathrow (EGLL) and London Gatwick (EGKK), Rome Fiumicino (LIRF) shows an extremely high level of additional taxi-out time above 7 minutes per departure. Within the group of airports with a yearly traffic of more than 400.000 flights, Frankfurt (EDDF) and Paris Charles de Gaulle (LFPG) range around an average additional taxi-out time of 4 minutes per departure.

		IFR MOVEMENTS (THOUSANDS PER YEAR)					
		> 400		400 -300		300-200	
ADDITIONAL TAXI-OUT TIME	> 4 MIN/DEP.	EGLL	7.96	LIRF	7.06	EGKK	7.03
		EDDF	4.02	LEMD	4.30		
ADDITIONAL TIME IN TERMINAL AIRSPACE	3 TO 4 MIN/DEP.	LFPG	3.90			LEBL	3.92
						LSGG	3.12
ADDITIONAL TIME IN TERMINAL AIRSPACE	> 3 MIN/ARR.	EGLL	8.90			EGKK	4.04
						LSZH	3.12
ADDITIONAL TIME IN TERMINAL AIRSPACE	2 TO 3 MIN/ARR.	EDDF	2.24			ENGM	2.36
						LSGG	2.30

Table 9: Additional Taxi-Out Time and Time in Terminal Airspace

3.8.4 The estimate of the average additional time in terminal airspace (ASMA) at Union-wide level ranges at 1.89 minutes per arrival. Aggregated on the sub-ordinate FAB-level, the average additional ASMA times range well below the European average for all FABs with the exception of UK-Ireland. The latter exceeds the European average by a factor of approximately two (cf. Figure 14).

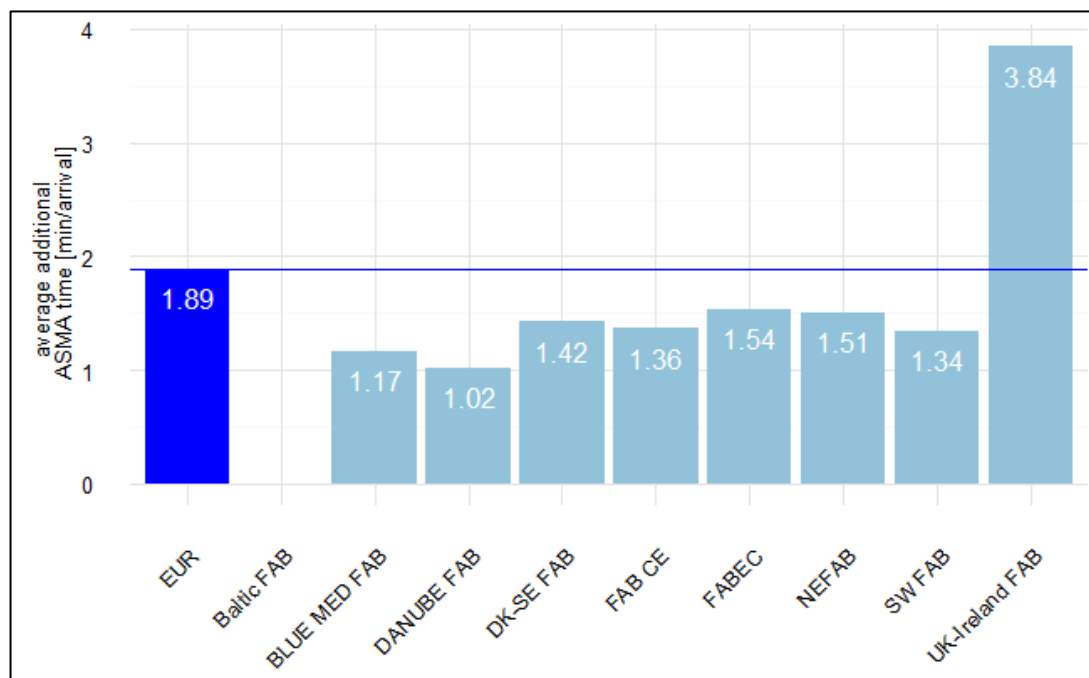


Figure 14: Additional Time in Terminal Airspace (ASMA) – European Level (2015)

3.8.5 Given the aforementioned limitations in terms of data availability, the majority of European airports have an average well below 2 minutes per arrival as concerns the additional time in the terminal airspace (ASMA). Given the high level of demand and principle of operations, London Heathrow (EGLL) accrues a significant high level of average

additional ASMA time of 8.9 min./arrival. Next to Heathrow, London Gatwick (EGKK, 4.04 min./arrival) and Zurich (LSZH, 3.12 min./arrival) range above the 3 minute threshold (cf. Table 9).

- 3.8.6 Frankfurt (EDDF, 2.24 min./arrival), Oslo Gardemoen (ENGM, 2.36 min./arrival), and Geneva (LSGG, 2.3 min./arrival) exceed the two-minute threshold for the average additional time in the terminal airspace per arrival (cf. Table 9).
- 3.8.7 Across Europe, the majority of RP2 airports range below a threshold of 3 minutes per departure in terms of average additional taxi-out time and 2 minutes per arrival in terms of average additional time in terminal airspace. It is recognised that these thresholds form upper bounds in terms of operational variability and local demand / capacity balance that impact the contribution of ANS to the KPA Environment. States may consider to investigate operational mechanisms for airports exceeding these bounds in close collaboration with the airport authorities and ANSP servicing the airport to see how these can be improved.
- 3.8.8 For both the additional taxi-out time and additional time in the terminal airspace, it can be observed that the level of traffic is loosely linked with the observed performance. For example, similar levels of additional times are observed across all airports irrespective of the level of traffic. To get more explanation on how the ASMA is measured, please follow the link:
[http://prudata.webfactional.com/wiki/index.php/Arrival_sequencing_and_metering_area_\(ASMA\)_additional_time](http://prudata.webfactional.com/wiki/index.php/Arrival_sequencing_and_metering_area_(ASMA)_additional_time).

3.9 PRB Findings for Environment

- 3.9.1 In terms of flight efficiency at Union-wide level, the KEP target has not been met, while the KEA target has been met. The KEA target has seen mixed results in terms of local achievements but could be considered positive in general, and as a result the corresponding target at Union-wide level has been met.
- 3.9.2 The gap between the values of KEP and KEA values is not closing and points to possible issues in terms of information sharing which in turn leads to inefficiencies. As the flight plans are ultimately filed by the airspace users, it is important to ensure that they are made aware of the different opportunities offered by the ANSPs, this is in order to reduce wastage of efforts and disproportionate ANSP reorganization which is not used by the users.
- 3.9.3 The trajectories, on which the Horizontal Flight Efficiency indicators are calculated, are the results of complex interactions between stakeholders with differing objectives and constraints, which can be physical, economical, or organizational.
- 3.9.4 These interactions are difficult to quantify; the implementation of FRA, internal and cross-border is clearly linked to lower levels of inefficiency and lower gaps between the KEP and KEA and should be considered an essential component for the achievement of targets in the Reference Period.
- 3.9.5 Several States did not provide the requested information regarding Effective Booking Procedures, as listed in Article 4 paragraph 1 (m) & (n) of the FUA Regulation (EC) No 2150/2005.

3.10 PRB Recommendations

- 3.10.1 The PRB observes that in accordance with the provisions of Article 18.1 of the Performance Regulation 390/2013, the Network Manager and States should report, in the next reporting

cycle, specific information on the analyses and activities undertaken to improve flight efficiency, and their expected impact on the value of the indicator.

- 3.10.2 The PRB observes that more could be done by FABs and the Network Manager to implement, to the fullest extent possible, cross-border Free Routes projects.
- 3.10.3 The PRB advises the European Commission that there is an absence of information from Member States on how civil-military coordination and cooperation has increased capacity, in reference to Article 11 paragraph 3(f) of the Performance Regulation. This concern means that the measure is ineffective. The PRB would like to see this reviewed with a cross section of users and military, taking into account new developments in this area, with a view to improving the measure with clear guidance to States on how this should be reported. Review of the Annual Monitoring Reports shows the lack of a clear and consistent manner for States/FABs to determine if they are providing all airspace users with the full benefits of the Flexible Use of Airspace (FUA) concept. Without clear documentation and guidance, States/FABs are unable to describe how well they are performing in the objective of satisfying all airspace users' requirements. It is the opinion of the PRB that guidance could be developed for publication to States to improve reporting and transparency, or the measure removed.
- 3.10.4 The PRB observes that no impact statement was given during the implementation of the airport data requirement, suggesting that there is a risk that the value of data versus the complexity and cost of obtaining it, is disproportionate. This issue should be examined with small airport operators to review the effectiveness of this measure with a view to either applying guidance to operators to ensure that the data is delivered, or that the application of measure is revised through a minimum application threshold.
- 3.10.5 The PRB recommends that the States focus on the achievement of full implementation of Free Route Airspace on a H24 basis throughout the SES area as soon as possible, and at the latest by 2021 in line with the ATM Master Plan, using or applying a differentiated approach as necessary.

3.11 Non Compliance

Level Three: Environment performance indicators described in Annex 1 of the Performance Regulation 390/2013 should be reviewed to reduce ineffective and unnecessary reporting.

4. CAPACITY

4.1 Presentation of the Capacity PIs and KPIs

4.1.1 The KPI used for Union-wide en-route capacity is the average minutes of en-route ATFM delay per flight attributable to ANS.

4.1.2 As far as local target setting is concerned, two KPIs are foreseen by the Performance Regulation 390/2013, namely: (i) average minutes of en-route ATFM delay per flight at FAB level, with a breakdown monitored for reasons of transparency at the most appropriate level and (ii) average minutes of arrival ATFM delay per flight attributable to terminal and airport ANS and caused by landing restrictions at the destination airport. In this case, it is at national level, with a breakdown at airport level for monitoring purposes.

4.1.3 The Performance Regulation 390/2013 also defines a number of Performance Indicators (PI) related to the operational performance at and around airports, monitored at both European and local levels (i.e. national level with a breakdown at airport level).

- the arrival ATFM delay is monitored at Union-wide level;
- the adherence to ATFM slots;
- the average minutes of ATC pre-departure delay.

4.1.4 To date, the Commission had been unable to accept the capacity targets for three FABs: BLUEMED FAB, FABEC, as they are assessed as not consistent with the Union-wide targets for en-route capacity.

4.2 En-Route ATFM Delays: Union-wide

4.2.1 Figure 15 shows the average en-route ATFM delay by cause for the RP1 and the RP 2 area between 2008 and 2015, as provided by the Network Manager.

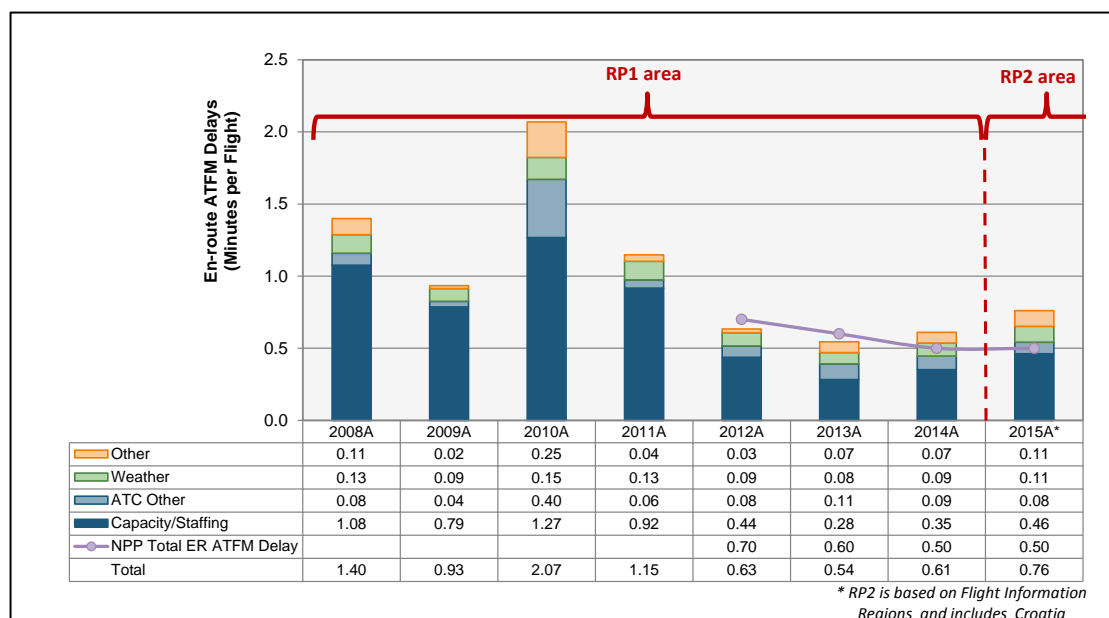


Figure 15: Average en-route ATFM Delay in RP1 and RP2

4.2.2 The 2015 achieved value was 0.76 and shows a deteriorating trend since 2013. It is evident that there is a significant and persistent drop in performance at local or FAB level, affecting other SES States and/or the entire European airspace and that States have not defined

corrective measures to recover the situation. Therefore the European Commission should consider interventions under Article 18 (2) of the Performance Regulation. The additional delay of 0.26 minutes per flight equates to an additional cost to airspace users of an estimated 240M€ per annum of indirect cost exposure (Delay Calculation 25,321 flights/day x 365 x €100ⁱⁱⁱ).

- 4.2.3 The Network Manager’s Annual Reporting on NM Performance RP2 (NPP)^{iv} highlights the major contributors to the delay as being capacity and staffing constraints during the summer period; major ATC system changes in December and industrial action in April. Further details of major capacity constraints are provided in the relevant sections of Volume 2 of this PRB Monitoring Report.

	2015	2016	2017	2018	2019
Union-wide target	0.5	0.5	0.5	0.5	0.5
Actual performance	0.76				
Difference	+0.26				

Table 10: ATFM Delay Performance at Union-wide level

- 4.2.4 In reporting against the strategic objective to plan optimum capacity the Network Manager states:

“The analysis of 2015 results showed that among the 6 ANSPs where capacity issues were anticipated, the 3 who implemented the measures proposed by NM eventually made an important contribution to network performance.

If the 3 other ANSPs would have progressed in the implementation of their measures, the Network would have met the 0.5 min/flight target.

*The root causes are **recurrent issues** such as: lack of commitment in terms of ATCO availability, rostering and week-end planning and the impact of social unrest.”*

- 4.2.5 The States, wherein the capacity problems occur, must ensure that the respective ANSPs implement suitable corrective actions and provide the required capacity by reviewing with their ANSP measures proposed by the NM or by providing additional solutions.
- 4.2.6 The Network Operations Plan (NOP) covering the period 2016-2019/2020^v, reveals a degradation of performance in that it contains capacity plans that are inconsistent with the required performance to meet the Union-wide target for en-route capacity for each year during RP2. NSA’s could help improve this situation by reviewing these plans with the NM with a view to defining network actions to provide the capacity and arrest the adverse trend.
- 4.2.7 The prediction of the Network Manager, contained within NOP 2016-2020, is that unless current capacity plans are improved, the Union-wide target for en-route ATFM delay will not be achieved in any year of RP2 and intervention is now necessary.

4.3 **En-Route ATFM Delays: Local level (Functional Airspace Block (FAB))**

- 4.3.1 The local (FAB) targets for en-route capacity are as adopted in the relevant FAB performance plans. Each FAB was provided with a reference value for each year of RP2, as published in the NOP.
- 4.3.2 Six of the nine FABs achieved their en-route capacity targets, providing a positive contribution to network performance by achieving a more stringent capacity performance than their respective reference values. Without the additional positive contributions, the network performance could have been even worse than 0.76 minutes per flight.

2015 / FAB	REFERENCE VALUE	FAB TARGET	ACTUAL PERFORMANCE
Baltic	0.21	0.21	0.16
Blue Med	0.17	0.35	0.64
Danube	0.04	0.03	0.03
DK - SE	0.10	0.10	0.01
FAB-CE	0.30	0.29	0.21
FABEC	0.43	0.48	0.69
NEFAB	0.12	0.12	0.04
SW FAB	0.30	0.30 ^{vi}	0.46
UK - IRL	0.25	0.25	0.08

Table 11: ATFM Delay Performance by FAB

4.3.3 Three FABs neither achieved their FAB targets nor their respective reference values: Blue Med FAB, FABEC and South West FAB.

4.3.4 Analysis of individual FAB performance and further analysis of capacity performance at State level can be found in Volume 2 of the PRB Annual Monitoring Report.

4.4 Change in methodology for calculating ATFM delay: REA message.

4.4.1 A Ready Message (REA) indicates that an aircraft is ready to depart enabling an aircraft to be given an earlier departure slot when one becomes available: improving the ATFM service to aircraft and minimising the wastage of available slots.

4.4.2 Historically, in the system, the transmission of a REA message could artificially inflate the appearance of ATFM delays where aircraft would appear to receive additional delays even though the Calculated Take-Off Time (CTOT) was not altered.

4.4.3 This issue was raised by stakeholders and the Network Management Board (NMB) requested the Network Manager to devise a solution (in consultation with airspace users), which was implemented in April 2016.

4.4.4 The more accurate identification of actual ATFM delays, through the implementation of the new solution, shows a difference of between 10 - 15% of recorded ATFM delays, compared to the old methodology. The difference is increasing each year as more and more airports are able to transmit the REA message to the Network Manager.

2015 / FAB	CURRENT METHODOLOGY	FAB TARGET	PROPOSED METHODOLOGY
Baltic	0.16	0.21	0.15
Blue Med	0.64	0.35	0.60
Danube	0.03	0.03	0.02
DK - SE	0.01	0.10	0.01
FAB-CE	0.21	0.29	0.19
FABEC	0.69	0.48	0.63
NEFAB	0.04	0.12	0.03
SW FAB	0.46	0.30 ^{vi}	0.42
UK - IRL	0.08	0.25	0.08
SES area	0.76	0.50	0.70

Table 12: Comparison between old and new methodology for calculation of ATFM delay.

- 4.4.5 The PRB was asked by the European Commission to review the impacts of the proposed methodology with a view to early implementation by assessment of the situation and to propose a solution that ensures both transparency to stakeholders and upholds the consistency of the SES Performance Scheme.
- 4.4.6 For information purposes only, the PRB has revisited the data for 2015 and has re-calculated the actual delay according to the proposed methodology applied by the Network Manager to accommodate the REA message. Table 12 shows, for illustrative purposes only, an estimation of the difference between the delays that would be recorded. It is suggested that this is monitored over 2016 as well to provide a financial impact statement on the proposed change.
- 4.4.7 The change in NM methodology has no effect on the individual FAB reference values, calculated by the Network Manager and published in the Network Operation Plan in March 2014^{vii}, or on the setting of the Union-wide en-route capacity target, published in March 2014 but does affect the payment of incentives to ANSP's as all show an improvement in delay management without any additional effort. There is also a perceived impact on delay targeting and incentive mechanisms.
- 4.4.8 In light of the fact that the PRB's analysis confirms that there is an impact to performance calculation, which is significant, and the PRB are of the opinion that the proposed approach is to continue using the current PRB methodology when comparing RP2 performance against the existing RP2 targets, including reference to FAB and national incentive schemes as the proposal to change results in changes to bonus programmes which could be significant payment. In suggesting this, the practicalities of this approach were discussed and there is a risk that the NM will be unable to provide this for the reference period. If this is the case the PRB recommend the Commission that it could consider the suspension of all incentive mechanisms until a thorough review is completed.
- 4.4.9 The PRB could then monitor the dataset for capacity performance using the new methodology, including a recalculation of 2015 performance, so financial modelling can be completed to examine how much this change will represent in terms of additional costs to users of actual ATFM delays which can be brought into the future discussion for the third reference period.
- 4.4.10 The PRB in its review also consider that there may be legal implications for this change and ask the European Commission to review the legality of the change as required by the regulation. In coming to this opinion the PRB would like to draw the Commission and Network Managers attention to the following legislation which should be considered in the view.
- Recital 7 of COMMISSION IMPLEMENTING DECISION (EU) 2015/348 of 2 March 2015 concerning the consistency of certain targets included in the national or functional airspace block plans submitted pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the second reference period. This sets out the assumption for this target and how it was constructed. Whilst not overtly stated the calculation of delay methodology is an integral component.
 - Item 3.1 (i) of ANNEX 1 the COMMISSION IMPLEMENTING REGULATION (EU) No 390/2013 laying down a performance scheme for air navigation services and network functions. Which states the KPI, this is silent about the methodology but the PRB are of the opinion that it forms part of this assumption and metric management. Thus the NM does not have the authority to change this metric without reference back to the European Commission and SSC.

- And finally, Article 11 Section 4 after (e) which states; The Commission may add to the list of procedures referred to in this paragraph. These measures designed to amend non-essential elements of this Regulation, by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 5(4). Therefore, the PRB ask for an interpretation from the Commission as to whether SSC approval is necessary for this change to take place.

4.5 Arrival ATFM Delay – National Target Setting and Actual Performance

4.5.1 With the RP2 Performance Plans, the majority of States established a national target on arrival ATFM delay. Table 13 lists those States that are not fully compliant with the requirements.

FAB	MEMBER STATE	OBSERVATION
BALTIC	Poland	No national target specified; No breakdown at airport level.
BLUE MED	Cyprus	No national target specified; a breakdown at airport level is provided for all delay causes.
	Greece	Formally no national target established (local target [single airport] assumed to be national target).
	Italy	Established target not consistent with historic performance (significant padding).
FABCE	Austria	Inconsistency of lists of airports subject to IR390/2013 and IR391/2013.
	Czech Republic	Inconsistency of lists of airports subject to IR390/2013 and IR391/2013.
FABEC	Belgium	National target established for CRSTMP causes; breakdown limited to two airports.
	France	No breakdown to airport level.
	Germany	No breakdown to airport level.
	Netherlands	No breakdown to airport level.
UK-IRE	Ireland	Inconsistency of lists of airports subject to IR390/2013 and IR391/2013.

Table 13: Compliance / Consistency of the Established National Targets

4.5.2 These compliance issues are considered to be of low impact to the overall scheme and States are advised to address the concerns raised by the next reporting cycle to the PRB. In general, the established national targets on arrival ATFM delay are consistent with the historic performance at the national level considering a movement-related weighting for the respective airports. During 2015, the following performance results, in terms of achieving the national targets and associated breakdowns, have been observed (cf. Table 14).

FAB	MEMBER STATE	NATIONAL TARGET [MIN/ARRIVAL]		AIRPORT LEVEL
		TARGET	ACTUAL (ALL CAUSES)	

FAB	MEMBER STATE	NATIONAL TARGET [MIN/ARRIVAL]		AIRPORT LEVEL
		TARGET	ACTUAL (ALL CAUSES)	
BALTIC	Poland	Not specified	0.04	Negligible; commensurate with traffic / level of congestion at airport level
	Lithuania	0.0	0.0	Commensurate with traffic / level of congestion at airport level
BLUE MED	Cyprus	Not specified	0.09	One airport Paphos exceeding local breakdown significantly
	Greece	0.10	0.06	Target for Athens is inferred as national target
	Italy	0.9	0.57	Significant padding one airport Rome - Fumicino exceeding local value significantly
	Malta	0.10	0.01	Malta accrues a negligible share of arrival ATFM delay
DANUBE	Bulgaria	0.00	0.00	Commensurate with traffic / level of congestion at the only airport Sofia
	Romania	0.00	0.00	Commensurate with traffic / level of congestion at the Romanian airports Bucharest - Aurel Vlaicu, and Bucharest - Henri Coanda.
DK-SE	Denmark	0.11	0.03	Commensurate with traffic / level of congestion at the only airport: Copenhagen
	Sweden	0.35	0.07	Commensurate with traffic / level of congestion at the only airport Stockholm - Arlanda
FABCE	Austria	1.88	0.79	Negligible contribution by other Austrian airports, Vienna outperforms national target value
	Croatia	0.05	0.01	Commensurate with traffic / level of congestion at the only airport Zagreb
	Czech Republic	0.25	0.04	Negligible contribution by other airports, Prague outperforms national target value
	Hungary	0.05	0.00	Commensurate with traffic / level of congestion at the only airport Budapest
	Slovakia	0.00	0.00	Commensurate with traffic / level of congestion at the only airport Bratislava
	Slovenia	0.00	0.00	Commensurate with traffic / level of congestion at the Slovenian airports Ljubiana, Maribor, Portoroz
FABEC	Belgium	Not specified	0.89	No national target specified (all causes); CRTSMP value specified for Brussels - Zaventem and Liege; Brussels - Zaventem accounts for major share; Liege commensurate with level of traffic;

FAB	MEMBER STATE	NATIONAL TARGET [MIN/ARRIVAL]		AIRPORT LEVEL
		TARGET	ACTUAL (ALL CAUSES)	
				negligible contribution by all other airports
	France	0.60	0.34	No breakdown specified; commensurate with traffic / level of congestion at French airports
	Germany	0.65	0.3	No breakdown specified; commensurate with traffic / level of congestion at German airports
	Luxembourg	0.48	0.11	Commensurate with traffic / level of congestion at the only airport Luxembourg.
	Netherlands	2.00	2.91	No breakdown specified; CRSTMP value for Amsterdam - Schiphol; national target exceeded significantly; CRSTMP value met for Amsterdam - Schiphol
	Switzerland	2.18	2.48	Switzerland established a traffic-dependent national target for all causes and CRSTMP; for all causes the target is not met; for CRSTMP the actual performance is significantly better than the established local values
NEFAB	Estonia	0.00	0.00	Commensurate with traffic / level of congestion at the Estonian airports Tallinn, Tartu-Ulenurme
	Finland	0.13	0.55	Helsinki exceeding the local value and national target
	Latvia	0.04	0.00	Commensurate with traffic / level of congestion at the only airport Riga
	Norway	0.60	0.37	Negligible contribution by Trondheim and Stavanger, discernible contribution by Bergen and Oslo – Gardermoen.
SW-FAB	Portugal	0.60	0.60	Overall national target met with Porto and Lisbon exceeding the local value significantly; equally Faro exceeds the group value for the other Portuguese airports
	Spain	0.80	0.60	Palma de Mallorca exceeding the local value significantly; performance at other airports (i.e. Gran Canaria, Barcelona, Madrid Barajas, Malaga) significantly better
UK-IRE	Ireland	0.18	0.14	Negligible contribution by Cork and Shannon; performance at Dublin in line with local value
	United Kingdom	0.87	0.98	Luton, Gatwick and Stansted exceeding the local value significantly; Glasgow marginal exceeding the value; performance at other airports (i.e. Birmingham, Manchester, London

FAB	MEMBER STATE	NATIONAL TARGET [MIN/ARRIVAL]		AIRPORT LEVEL
		TARGET	ACTUAL (ALL CAUSES)	
				City, Edinburgh) significantly better; performance at London - Heathrow commensurate with level of congestion

Table 14: Arrival ATFM Delay - Targets and Observed Performance

4.5.3 Following a steady decrease throughout 2012 to 2014 (for the airports in RP1) the European average for arrival ATFM delay (all delay causes) increased in 2015 to 0.64 min./arrival. Figure 16 reflects the level of arrival ATFM delay at the beginning of RP2.

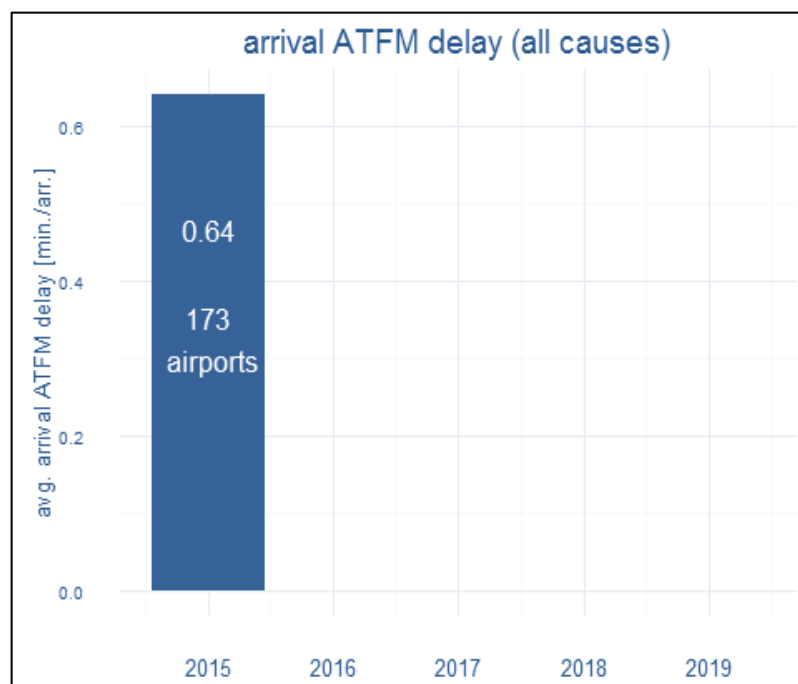


Figure 16: Arrival ATFM delay (2015) at Union-wide level

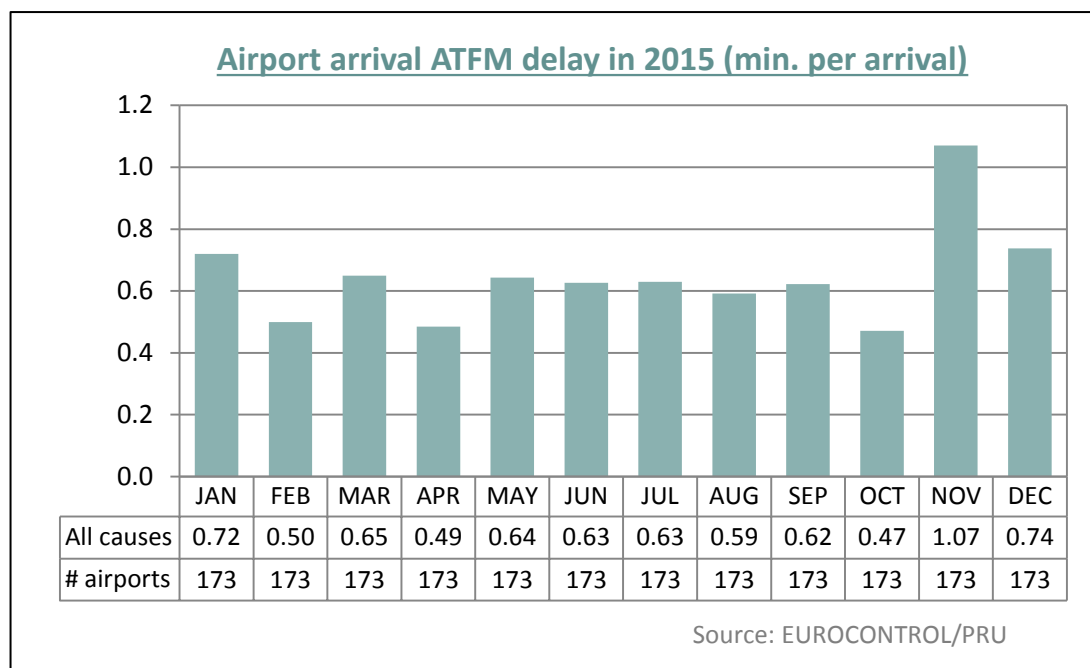


Figure 17: Arrival ATFM delay (by month) at Union-wide level

4.5.4 Figure 17 shows a fairly flat trend for 2015 for the average arrival ATFM delay with the exception of November and December. November 2015 represents the month with the highest level of arrival ATFM delay due to a variety of significant events (e.g. weather). The relatively constant level of arrival ATFM delay of broadly 0.6 min./arrival throughout the summer season, May through September, deviates from the more seasonal variations across the year in the past. This can also be observed by the relatively small spread between the yearly average of 0.65 min./arrival and the base level of 0.6 min./arrival.

4.6 Incentive schemes on national target on arrival ATFM delay

- 4.6.1 RP2 was the first time that legislation mandated the application of financial incentive schemes for capacity performance. The European Commission confirmed the application of the incentive scheme mechanism on both the en-route and terminal services. Article 12 of the Performance Regulation 390/2013 and Article 15 of the Charging Regulation 391/2013 stipulated the framework for incentive schemes but left the mechanisms of the actual implementation up to the States themselves.
- 4.6.2 Only a limited number of States established an incentive scheme on the national arrival ATFM delay target. The PRB reviewed the application of the incentive schemes as part of the RP2 performance plan assessment. Associated compliance issues have been listed.
- 4.6.3 There exists a great deal of uncertainty about the requirement to establish an incentive scheme on the national target on arrival ATFM delay. Furthermore, the compliance issues identified may make the application unreasonable.
- 4.6.4 Further information and analysis for each capacity incentive scheme on the national arrival ATFM delay target applied during 2015 can be found in Volume 2 of the PRB Annual Monitoring Report.

4.7 Adherence to ATFM Slots – Actual Performance

- 4.7.1 Across all RP2 airports, 11.9% of departures are subject to an ATFM slot regulation. For each of these airports, the share of regulated flights departing within the slot tolerance window is depicted in Figure 18. It is worth noting that for the majority of airports (i.e. 154 ~ 89% of RP2 airports) the level of compliance with the slot window is above 80% and about 60% of the airports (i.e. 103) achieve a regulation window compliance of over 90%. A significant number of airports, with less than 15000 departures per annum, have an adherence rate of less than 80% to the slot window.

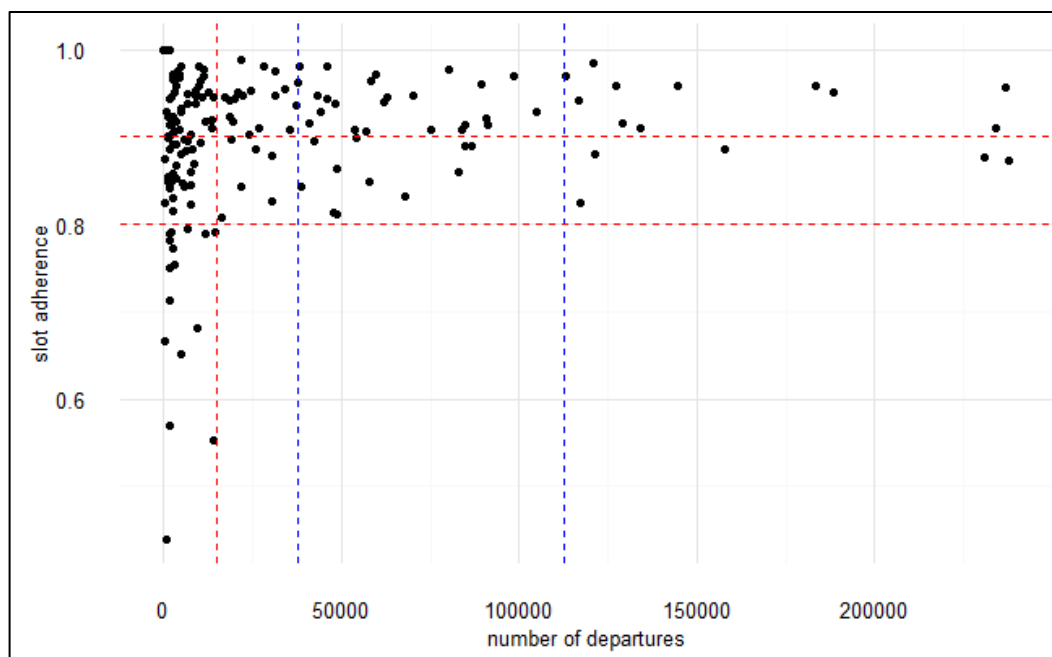


Figure 18: Adherence to ATFM Slots – European Level

4.8 En-route Capacity Findings

- 4.8.1 There is a significant and persistent drop in Capacity performance, in that, there is a deteriorating trend over three years and the size of the gap is 0.26 minute/flight and these are considered to be manageable items.
- 4.8.2 The Union-wide target for average en-route ATFM delay per flight for 2015, 0.5 minutes, was not achieved, with a capacity performance of 0.76 minutes per flight.
- 4.8.3 Current ANSP Capacity plans contained within the Network Operations Plan 2016-2019/20 are insufficient to achieve the Union-wide target for en-route ATFM delay for any year during RP2.
- 4.8.4 3 FABs provided performance levels below the capacity contribution required to be consistent with the Union-wide target. 6 of the 9 FABs achieved a capacity performance that was consistent with the Union-wide target of 0.5 minutes per flight.
- 4.8.5 The non-achievement of the Union-wide target for en-route capacity resulted in an additional cost to airspace users, estimated to be in the region of €240 million.
- 4.8.6 In accordance with the en-route capacity incentive schemes implemented by the various FABs and States in 2015, 13 ANSPs achieved performance levels which resulted in an aggregated additional payment equivalent to over €14 million. 3 ANSPs achieved performance levels that result in aggregated financial penalties equivalent to €3.7 million.

2 ANSPs were not subject to an incentive scheme and the remaining 12 ANSPs achieved capacity performance within a dead-band of neither penalty nor bonus.

4.9 En-route Capacity Recommendations

- 4.9.1 The PRB recommends to the European Commission that intervention is necessary under Article 18.2 of the performance regulation. The SW FAB should be invited to provide corrective measures; Blue Med and FABEC, who are already under consideration of corrective measures for planning, should be invited to include plans to improve capacity as soon as possible.
- 4.9.2 The PRB recommends that the Commission and the States ensure that ANSP capacity plans published in the Network Operations Plan should, at a minimum, be consistent with the Network's capacity requirements to meet the Union-wide targets in accordance with the provisions of the Performance Regulation 390/2013.
- 4.9.3 The PRB recommends that the Member States of BLUEMED, FABEC and SW-FAB instruct their ANSPs to develop capacity plans that will, at a minimum, meet the required level of FAB performance, in accordance with the provisions of the Performance Regulation 390/2013.
- 4.9.4 The PRB recommends that the Member States of BLUEMED and FABEC should provide information to the Commission on how the resources of the FAB are being deployed to resolve their capacity shortfalls in certain areas, in accordance with the provisions of the Performance Regulation 390/2013.
- 4.9.5 The PRB recommends to the Commission and the States that the issue of incentive schemes should be considered for suspension during the evaluation of the effects of delay management changes in addition to the incentive concerns raised in cost efficiency.
- 4.9.6 The PRB advises that the Member States of BALTIC, BLUEMED, DANUBE, FAB-CE, FABEC, NEFAB, SW-FAB and UK-IRL FAB review the incentive schemes that have been applied. The review should consider, inter alia, compliance with the Charging and Performance Regulations, effectiveness of scheme in improving ANS provision to airspace users.
- 4.9.7 The PRB advise the European Commission that in light of the fact that the PRB's analysis confirms that there is an impact to performance calculation which is significant, and the PRB are of the opinion that the proposed approach is to continue using the current PRB methodology when comparing RP2 performance against the existing RP2 targets, including reference to FAB and national incentive schemes. That as the proposal to change, results in changes to bonus programmes, which could be significant, that the PRB recommend retention of the current system. In suggesting this, the practicalities of this approach were discussed and there is a risk that the NM will be unable to provide this for the reference period. If this is the case the PRB recommend the Commission that it should suspend the incentives schemes for capacity until a thorough review is completed.

4.10 Airport Capacity Findings

- 4.10.1 Across Europe, the airport-related performance of air navigation services varies significantly from State to State and locally for each of the airports subject to RP2. Details on the local performance can be found in Volume 2 of the PRB Annual Monitoring Report.
- 4.10.2 The European aggregated arrival ATFM delay ranges at 0.64 minutes per arrival (cf. Figure 16). FABEC and UK-Ireland exceed the European average, while the performance of SW-FAB ranges at approximately the European level. All other FABs show a significantly better

performance in terms of arrival ATFM delay. This is primarily driven with the lower levels of traffic experienced at the airports of these FABs (cf. Volume 2).

- 4.10.3 Across Europe, there is a discernible number of flights not adhering to ATFM slots. This has an impact on the network as predictability and may negatively impact the capacity/demand balance. A compliance rate of 90% seems to be a natural bound in terms of good performance. States are encouraged to investigate with the local airport operators and service providers to investigate processes to ensure a higher level of compliance. This is particularly required for airport with a yearly traffic below 15000 departures.

4.11 Airport Capacity Recommendations

- 4.11.1 The PRB observes that the monitoring of operational performance at airports is dependent on the implementation of the airport operator data flow. Under Annex V of the Performance Regulation 390/2013, States are required to ensure the airport operator data flow and to empower the identified reporting entities in their task to collect the required data locally at airport level. The PRB opinion is that the European Commission should conduct a data collection review in order to either improve the required collection of data, or provide enforcement of data requirement to ensure data is received.
- 4.11.2 The PRB observes to the European Commission and the States that the application of the incentive scheme for the national target on arrival ATFM delay needs to be carefully reviewed. In particular, the incentive mechanism needs to be in compliance with Article 12 of the Performance Regulation 390/2013 and Article 15 of the Charging Regulation 391/2013.

5. COST-EFFICIENCY

En-Route ANS Cost-Efficiency

5.1 Summary of the En-route cost-efficiency targets and data for RP1

5.1.1 Table 15 below summarises the key data for the finalised RP1 (2012-2014). It comprises data as per EC Decision on Union-wide targets for RP1, data from adopted National Performance Plans, and actual data taken from the annual NSA Monitoring Reports (including June 2015 Reporting Tables for charging purposes). This information comprises the 29 States that were part of the SES Performance Scheme in RP1 (i.e. it excludes Croatia included in RP2).

5.1.2 Table 15 shows that in RP1:

- (i) Compared to the adopted Performance Plans, actual performance at Union-wide level was better than the DUR target in 2014 (54.15 €₂₀₀₉ compared to 54.84 €₂₀₀₉) and was also better than the intermediate value in 2013, though was worse in 2012.
- (ii) Compared to the Union-wide target, actual performance was worse than the 2014 target (54.15 €₂₀₀₉ compared to the target of 53.92 €₂₀₀₉) and also worse than the intermediate values in 2013 and 2012.
- (iii) In terms of traffic, SUs increased over RP1 (+1.5% p.a. between 2011 and 2014) but were below the levels planned in each year.

En-route	SES States - Data as per EC Decision on Union-wide targets for RP1				
	2012P	2013P	2014P		
	Real en-route costs (determined costs 2012-2014) - (in EUR2009)	6 296 297 788	6 234 893 556	6 179 610 754	
	Total en-route Service Units	108 776 000	111 605 000	114 610 000	
	Real en-route unit costs per Service Units - (in EUR2009)	57.88	55.87	53.92	
	SES States - Data from RP1 national performance plans				
	2012P	2013P	2014P		
	Real en-route costs (determined costs 2012-2014) - (in EUR2009)	6 258 122 341	6 318 609 442	6 304 761 101	
	Total en-route Service Units	108 359 738	111 461 030	114 964 695	
	Real en-route unit costs per Service Units - (in EUR2009)	57.75	56.69	54.84	
SES States - Actual data from June 2015 Reporting Tables					
2012A	2013A	2014A			
Real en-route costs - (in EUR2009)	6 047 812 097	5 947 919 729	5 947 263 158		
Total en-route Service Units	103 501 763	105 171 670	109 836 771		
Real en-route unit costs per Service Units - (in EUR2009)	58.43	56.55	54.15		

Table 15: Summary of RP1 en-route cost-efficiency targets (2012-2014)

5.2 Presentation of the RP2 en-route cost-efficiency KPI and targets

5.2.1 Under the cost-efficiency KPA, Union-wide targets have been set in the European Commission decision ((EU) N° 2014/132EC) for the average Determined Unit Cost (DUC) for en-route ANS over RP2 (covering the 2015-2019 period). This information is provided in Table 16. These targets correspond to an average DUC decrease of -3.3% p.a. between 2014 (starting point based on the RP1 determined costs (DCs) for 2014) and 2019.

COST-EFFICIENCY UNION-WIDE TARGETS	2015	2016	2017	2018	2019
Real en-route Determined Unit Costs (in EUR ₂₀₀₉)	56.64	54.95	52.98	51.00	49.10

Table 16: En-route cost-efficiency targets for RP2 as per EC Decision on Union-wide targets (SES level)

- 5.2.2 The aggregation of the individual national cost-efficiency targets for the 30 SES States that corresponds to 30 en-route charging zones (Belgium and Luxemburg share one CZ and Spain has two CZs) is shown in Table 17. It results in an average DUC decrease of -2.5% p.a. between 2014 and 2019.
- 5.2.3 Table 17 indicates, as well, that the aggregation of the local cost-efficiency targets reported in the RP2 Performance Plans (PPs) are lower than the EC Union-wide targets in 2015 (-2.3%), 2016 (-2.0%) and 2017 (-0.1%) but slightly higher in 2018 (+1.0%) and 2019 (+1.5%).

COST-EFFICIENCY DATA FROM THE AGGREGATION OF RP2 PERFORMANCE PLANS	2015P	2016P	2017P	2018P	2019P
Real en-route Determined Unit Costs (in EUR ₂₀₀₉)	55.33	53.86	52.92	51.49	49.83
Difference between Determined Unit Costs PPs and EU Decision on Union-wide targets	-2.3%	-2.0%	-0.1%	+1.0%	+1.5%

Table 17: En-route cost-efficiency targets for RP2 as per aggregation of adopted national targets (SES level)

- 5.2.4 Important note: Except for Belgium/Luxembourg, FABEC States en-route cost-efficiency targets for RP2 have not been formally adopted by the EC. For these States, the information provided is based on the revised PP submitted in July 2015.

5.3 Actual 2015 unit cost vs. DUC in adopted Performance Plans

5.3.1 In order to ensure consistency with the DCs data provided in the adopted PPs and to allow for Union-wide consolidation, actual costs are expressed in real terms (€₂₀₀₉ prices).

5.3.2 Figure 19 shows that in 2015 the Union-wide actual en-route unit cost (52.85 €₂₀₀₉) was -4.5% lower than planned in the RP2 PPs (55.33 €₂₀₀₉). This is because in 2015 actual en-route costs were -2.5% (-157.6 M€₂₀₀₉) lower than the DCs reported in the PPs (6 235.1 M€₂₀₀₉), while the actual number of Total Service Units (TSUs) was +2.0% higher than planned. In addition, the Union-wide actual en-route unit cost (52.85 €₂₀₀₉) was -6.7% lower than the Union-wide target for 2015 (€56.64 €₂₀₀₉) which was adopted by the EC in 2014.

Actual unit cost vs. DUC in adopted Performance Plans					
SES States - Data from RP2 Performance Plans					
	2015D	2016D	2017D	2018D	2019D
En-route costs (EUR2009)	6 235 113 277	6 195 879 435	6 197 743 021	6 144 418 842	6 064 161 829
Total en-route Service Units	112 687 532	115 027 116	117 111 268	119 329 034	121 691 904
Real en-route unit costs per Service Unit (EUR2009)	55.33	53.86	52.92	51.49	49.83
SES States - Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
En-route costs (EUR2009)	6 077 537 050				
Total en-route Service Units	114 994 014				
Real en-route unit costs per Service Unit (EUR2009)	52.85				
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real en-route costs (EUR2009)	in value	-157 576 227			
	in %	-2.5%			
Total en-route Service Units	in value	2 306 482			
	in %	2.0%			
Real en-route unit costs per Service Unit (EUR2009)	in value	-2.48			
	in %	-4.5%			

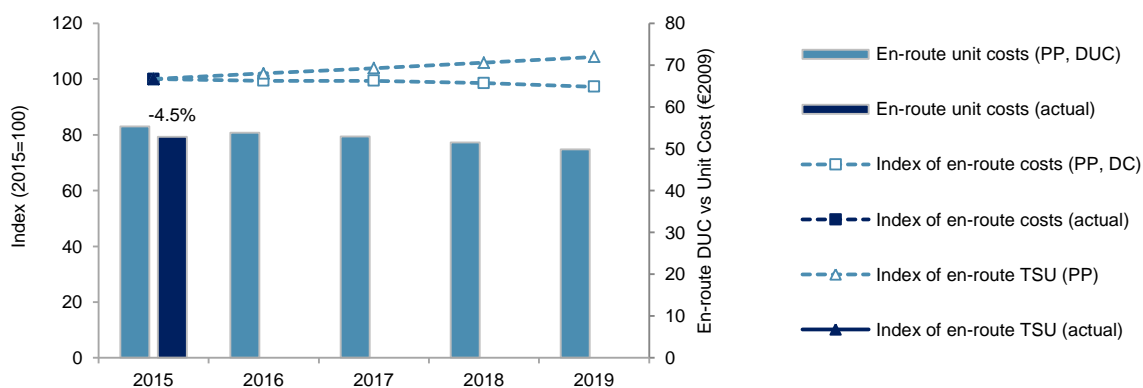


Figure 19: En-route unit cost (actual vs. Performance Plans)

5.3.3 Figure 20 indicates that the overall deviation in terms of en-route unit cost observed at Union-wide level (-4.5%) masks different situations across the 30 en-route CZs.

5.3.4 In 2015, actual en-route unit cost was lower than planned for 23 CZs. For 12 of these CZs, this reflects the combination of lower actual costs with higher traffic volumes than expected.

5.3.5 In contrast, the 2015 actual en-route unit cost was higher than the DUC provided in the RP2 PPs for seven CZs. For two, the deviation was larger than +10% (Spain Canarias, +11.3%) and Sweden (+18.7%). For Spain Canarias, this deviation reflects the combination of higher en-route costs than planned (+2.0%) with lower actual traffic than expected (-

8.4%). For Sweden, the large deviation in terms of en-route unit cost (+18.7%) was mainly due to substantially higher actual costs (+22.3%) while traffic was higher than expected (+3.0%). The higher actual costs than planned observed for Sweden are mainly associated with higher pension costs for LfV the main Air Traffic Services Provider (ATSP) operating in the Swedish en-route CZ.

5.3.6 Details on the potential corrective measures that have been reported, for those CZs not reaching the 2015 actual en-route unit cost targets, are available for each CZ in Volume 2 of the PRB 2015 monitoring report.

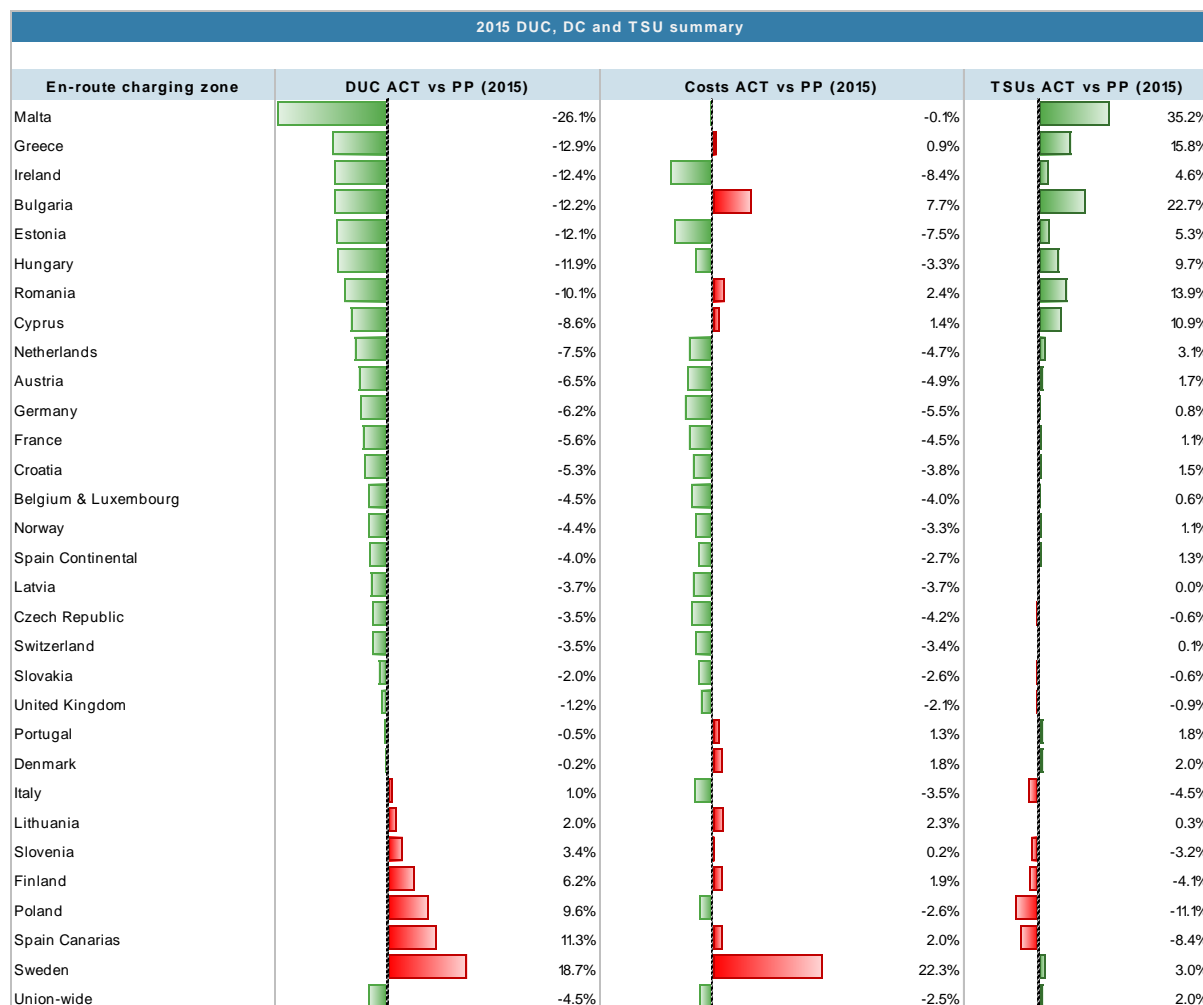


Figure 20: 2015 actual unit cost vs. PP by charging zone

5.3.7 Figure 20 shows that for 21 CZs, actual traffic was higher than planned and that the +10% threshold was exceeded for Malta (+35.2%), Bulgaria (+22.7%), Greece (+15.8%), Romania (+13.9%) and Cyprus (+10.9%). With the exception of Lithuania and Sweden, the 2015 actual en-route unit cost was lower than the DUC reported in the PPs for all these 21 CZs. For 9 CZs, actual traffic was lower than planned. Significant deviations are observed for Finland (-4.1%), Italy (-4.5%), Spain Canarias (-8.4%), and Poland (-11.1%) who exceeded the -10% threshold.

5.3.8 More details on the deviation between the DUC and actual en-route unit cost for 2015 at CZ level are available in Volume 2 of the PRB 2015 Monitoring Report.

5.4 Actual 2015 traffic vs TSUs in adopted Performance Plans (PPs)

- 5.4.1 In 2015, Union-wide actual TSUs were +2.0% higher than planned in the adopted PPs (i.e. within the $\pm 10\%$ alert threshold).
- 5.4.2 At State level, as shown in Figure 20, Poland exceeded the -10% threshold while five States (Bulgaria, Cyprus, Greece, Malta, and Romania) experienced a traffic increase above the +10% threshold. Three of these states (Bulgaria, Malta and Poland) have submitted a proposal to the European Commission for revising their RP2 performance targets.
- 5.4.3 As far as 2016 is concerned, the actual TSUs available to date (January - August) are +4.3% higher than planned in the adopted PPs for the same period (i.e. within the $\pm 10\%$ alert threshold).
- 5.4.4 For years 2017 to 2019, as shown in Figure 21 below, the STATFOR February 2016 forecast (low case scenario) is close to the planned TSUs provided in the PPs at EU-wide level (i.e. consistently within the $\pm 10\%$ alert threshold for both the low case and the baseline scenarios). Under these circumstances the PRB is of the view that is not appropriate to revise the Union-wide performance targets for the calendar years 2017 to 2019 in accordance with whereas (13) of the Commission Implementing Decision 132/2014 in the light of the STATFOR February 2016 forecast.

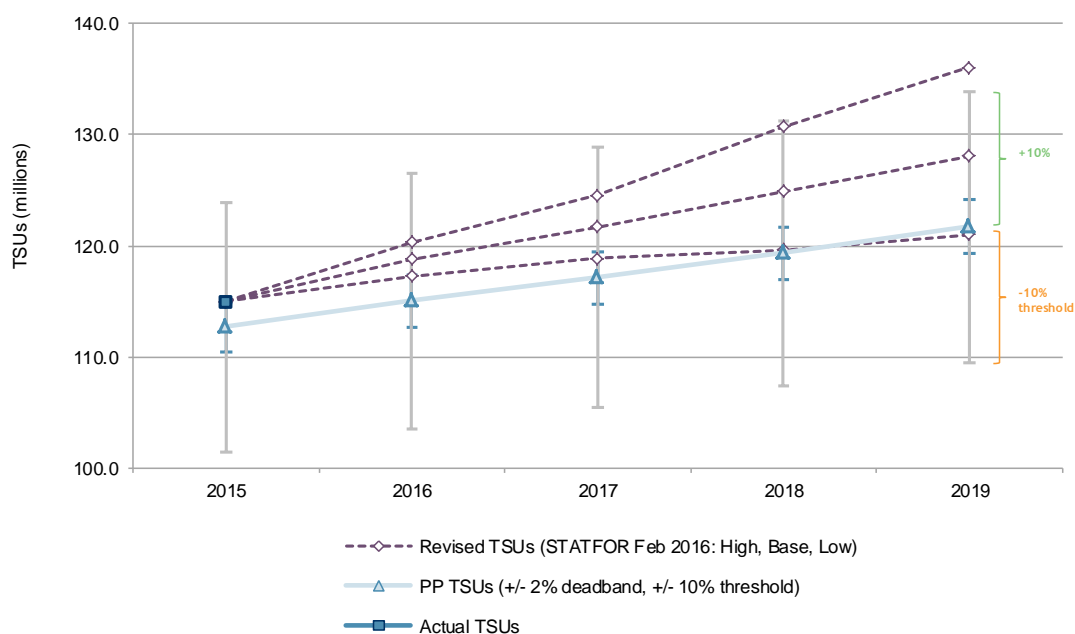


Figure 21: En-route traffic monitoring (Actual 2015 TSUs compared to PPs, SES level)

- 5.4.5 The traffic risk-sharing arrangements provided in the SES charging Regulation^{viii} foresee that ATSPs' additional (or lost) revenue (in respect of DCs) due to the difference between the actual and the planned TSUs are shared with airspace users (see illustration in Figure 22) as follows:
- (i) For a difference in TSUs falling within the dead band of $\pm 2\%$, the additional (or lost) revenue in respect of ATSP DCs is fully retained by the ATSP concerned;
 - (ii) For a difference in TSUs falling outside the threshold of $\pm 10\%$, the additional (or lost) revenue in respect of ATSP DCs is fully reimbursed (or charged) to the airspace users;

(iii) For a difference in TSUs falling between the dead band of $\pm 2\%$ and the threshold of $\pm 10\%$, the additional (or lost) revenue in respect of ATSP DCs is shared between the ATSPs (30%) and the airspace users (70%).

5.4.6 The DCs of the other entities such as NSAs/EUROCONTROL, MET Service Providers and exempted military Service Providers (which comprise around 10% of the total DCs at Union-wide level) are not subject to traffic risk-sharing and are fully reimbursed (or charged) to the airspace users, irrespective of traffic evolution.

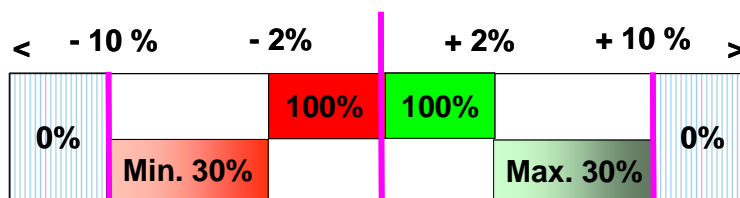


Figure 22: Traffic risk-sharing mechanism for the ATSPs

5.4.7 As a result, the additional revenues (73.9 M€₂₀₀₉) arising from the deviation between actual and planned traffic in 2015 are shared between States/ANSPs and airspace users.

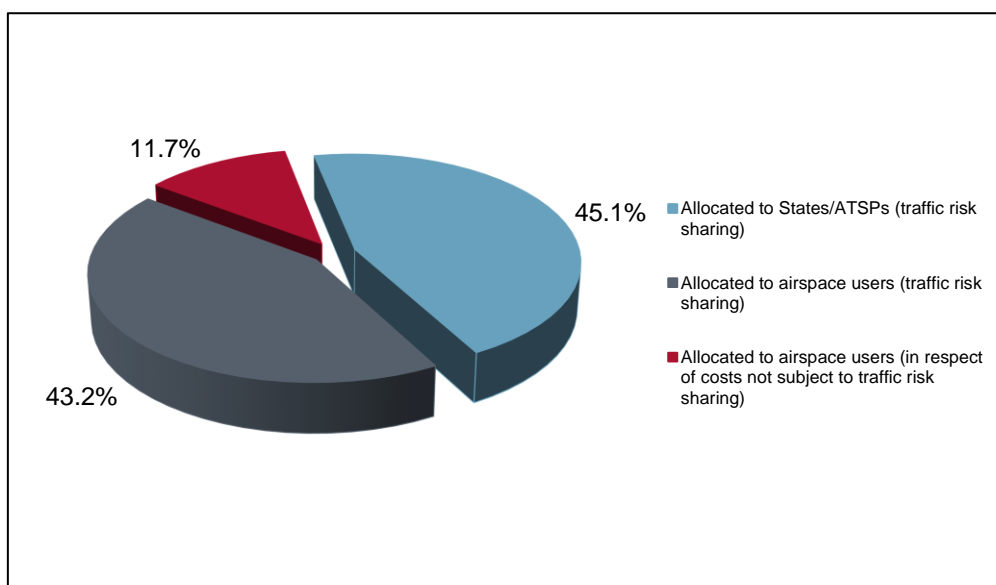


Figure 23: Outcome of 2015 traffic risk-sharing arrangements

5.4.8 Figure 23 shows that following the traffic risk-sharing arrangements, 45.1% of this gain is kept by States/ATSPs (33.3 M€₂₀₀₉, comprising 31.7 M€₂₀₀₉ for the main ATSPs and 1.6 M€₂₀₀₉ for the other ATSPs).

5.4.9 Figure 23 also indicates that 54.9% of the additional revenues are distributed to airspace users, i.e. 43.2% relating to costs subject to traffic risk-sharing (31.9 M€₂₀₀₉) and 11.7% relating to costs not subject to traffic risk-sharing (8.6 M€₂₀₀₉) as described in §5.4.6.

5.4.10 This is a completely different situation than experienced during RP1 when actual traffic was always lower than planned in the PPs.

5.5 Actual 2015 en-route costs vs. costs in adopted PPs

5.5.1 At Union-wide level, actual 2015 en-route costs were -157.6 M€₂₀₀₉ lower than the DCs provided in the RP2 PPs. Figure 24 breaks down this deviation for each of the entities part of the en-route CZs (main ATSPs^{ix}, other ANSPs, the MET service providers and the NSAs/EUROCONTROL).

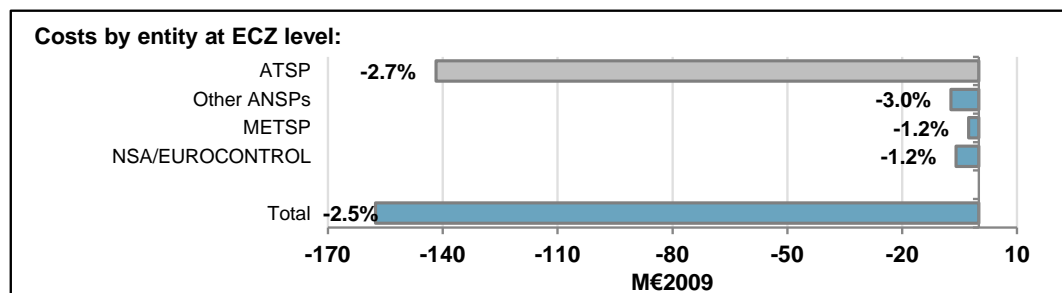


Figure 24: 2015 actual en-route costs compared to PPs by entity (SES level)

5.5.2 As shown in Figure 24, in 2015 actual en-route costs were lower than planned for all the entities part of the CZs: main ATSPs (-2.7%), other ANSPs (-3.0%), MET service providers (-1.2%) and NSA/EUROCONTROL (-1.2%). Due to their relative size in the CZs, most of the deviation observed for the total en-route ANS costs (-2.5% or -157.6 M€₂₀₀₉) is due to the main ATSPs (-2.7% or -141.8 M€₂₀₀₉).

5.5.3 The main component of the other ANSPs categories is MUAC which provides ATC services in the upper airspace of Belgium, Germany, Luxembourg and the Netherlands. MUAC actual costs (123.6M€₂₀₀₉) are -7.7% lower than planned in the FABEC RP2 PP (133.8 M€₂₀₀₉), that represent 2.1% of total SES determined en-route costs.

5.5.4 Figure 25 shows that the main drivers for the ATSPs lower actual en-route costs in 2015 (-141.8 M€₂₀₀₉) are lower other operating costs (-7.4% or -67.3 M€₂₀₀₉), lower staff costs (-1.5% or -51.8 M€₂₀₀₉) and lower depreciation costs (-3.8% or -26.9M€₂₀₀₉). Details of the main drivers underlying the deviation between actual and determined costs for each of these costs categories are available at CZ level in Volume 2 of the PRB 2015 monitoring report.

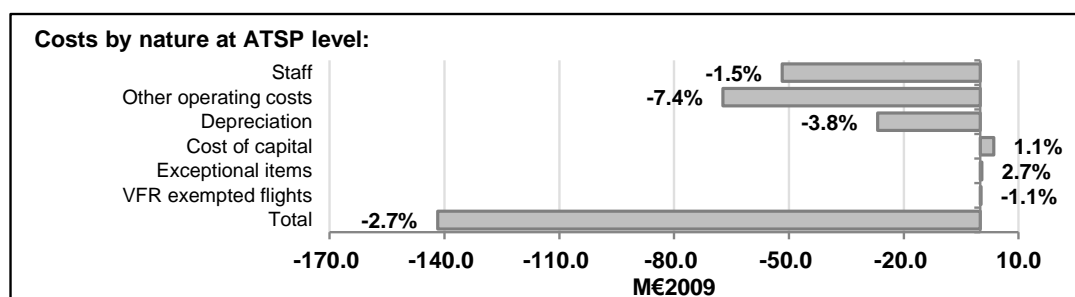


Figure 25: 2015 actual en-route costs compared to PPs by nature (SES level)

5.5.5 The cost-sharing mechanism in the SES Regulations provides that, except for the costs exempt from this mechanism (see Figure 26), the difference between the DCs set in the adopted PPs and the actual costs for the year shall be retained by the States/ATSPs.

5.5.6 The costs exempt from cost-sharing are taken into account in the calculation of the ATSP net gain for the 2015 en-route activity that is presented in sub-section §5.6.1. This monitoring report has considered the states submissions on the costs exempt from cost-sharing as reported in the June 2016 Reported Tables for the purposes of en-route charges

and in dedicated NSA submissions (see Figure 26). These amounts, to be recovered from (+) or reimbursed to (-) users, will be eligible for carry-over to the following reference period(s), if deemed allowed by the EC.

En-route costs exempted from cost sharing		
Estimates ('000 €2009)		2015
by item	Pension	34 730
	Interest rates on loans	-2 253
	Taxation law	-9 717
	New cost item required by law	0
	International agreements	-5 912
by entity	ATSP	22 700
	Other ANSP	-80
	METSP	-11
	NSA/EUROCONTROL	-5 761
Total costs exempted from cost sharing		16 848

Figure 26: 2015 en-route costs exempted from cost sharing (SES level)

5.5.7 Figure 26 shows that overall, the net amount of costs exempt from cost sharing in 2015 is relatively small (16.8 M€₂₀₀₉, representing some 0.3% of 2015 en-route Union-wide DCs). The cost exempt from cost sharing reported by ATSPs amount to 22.7 M€₂₀₀₉. This figure is significantly impacted by Sweden main ATSP cost exempt from cost sharing (39.8 M€₂₀₀₉) which are relating to pension costs. Figure 26 also indicates that except for the main ATSPs (22.7 M€₂₀₀₉), cost exempt from cost sharing are negative for the other entities (other ATSP (-0.08 M€₂₀₀₉), the MET service providers (-0.01 M€₂₀₀₉) and the NSA/EUROCONTROL (-5.8 M€₂₀₀₉)).

5.6 ATSP net gain for the 2015 en-route activity

- 5.6.1 The analysis of the overall economic surplus generated from the en-route activity by an ATSP can be broken down in two main elements:
- the net ATSP gain/loss on en-route activity;
 - the estimated surplus (return on equity) already embedded in the cost of capital charged to airspace users through the DCs.
- 5.6.2 This section focuses on the first element, the net ATSP gain/loss on en-route activity, which results from the combination of the traffic risk sharing, the cost sharing and the incentives on capacity and environment performance during the year. An analysis of the overall economic surplus, including the estimated surplus embedded in the cost of capital is provided in section “ATSPs 2015 overall en-route economic surplus vs. Performance Plans” below.
- 5.6.3 The (main) en-route ATSP is the most significant contributor to a State’s en-route costs (around 85% of the total cost base) and is the main entity subject to the costs and traffic risk-sharing mechanisms. The analysis of the net ATSP gain/loss focuses on the ATSP en-route activity for 2015. It does not consider the cash flow position and liquidity balance at the end of the year as those are impacted by the charging mechanism whereby the eligible under-recoveries (for traffic, etc.) are to be recovered in year N+2 or later.
- 5.6.4 The analysis of the main ATSPs’ results in 2015 shows that, at Union-wide level, a net gain of 206.1 M€₂₀₀₉ was generated on the en-route activity (see Figure 27).
- 5.6.5 The net gain referred to in the above paragraph results from the combination of three distinct elements:

- a gain resulting from the cost-sharing mechanism of +164.5 M€₂₀₀₉, corresponding to the difference between actual 2015 costs and the determined costs from the adopted PPs for the (main) ATSPs, and claimed costs exempt from cost-sharing;
- a net gain resulting from the traffic risk-sharing mechanism of +31.7 M€₂₀₀₉ for the (main) ATSPs. It is important to note that this is a completely different situation than for RP1 when actual traffic was always lower than planned in the PPs and a net loss was generated; and,
- a net gain resulting from the financial incentive mechanism relating to capacity and environment performance, amounting to +9.9 M€₂₀₀₉.

Focus on the main ATSPs: Net ATSP gain/loss on en-route activity	
Cost sharing ('000 €2009)	2015
Determined costs for the main ATSPs (PP) - based on planned inflation	5 289 228
Actual costs for the main ATSPs	5 147 437
Difference in costs: gain (+)/Loss (-) retained/borne by the main ATSPs	141 791
Amounts excluded from cost sharing to be recovered from (+) or reimbursed to (-) users	22 700
Gain (+)/Loss (-) to be retained by the main ATSPs in respect of cost sharing	164 491
Traffic risk sharing ('000 €2009)	2015
Difference in total service units (actual vs PP) %	2.0%
Determined costs for the main ATSPs (PP) - based on actual inflation	5 319 561
Gain (+)/Loss (-) to be retained by the main ATSPs in respect of traffic risk sharing	31 689
Incentives ('000 €2009)	2015
Gain (+)/Loss (-) to be retained by the main ATSPs in respect of incentives (bonus/penalty)	9 897
Net ATSP gain(+)/loss(-) on en-route activity ('000 €2009)	206 076

Combined effect of variations in costs and traffic for 2015 (M €2009)

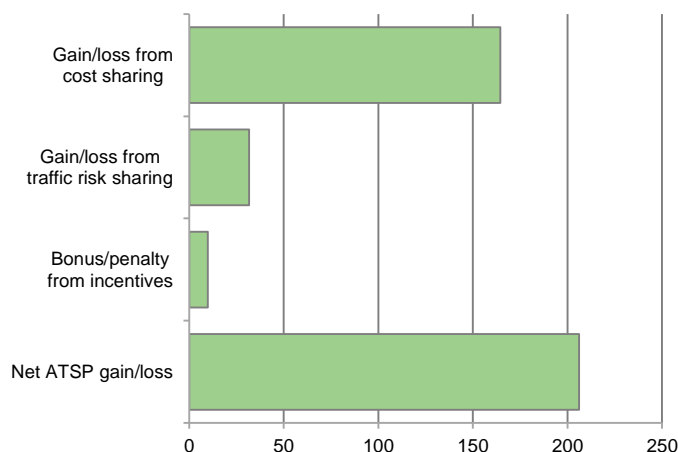


Figure 27: Net gain/loss on 2015 en-route activity for the (main) ATSPs (SES level)

5.6.6 The bonus, in respect of capacity and environment incentives (9.9 M€₂₀₀₉ shown in Figure 27), reflects the fact that:

- For 15 en-route main ATSPs, the actual capacity performance in 2015 laid within the dead band determined as part of the incentive mechanism, there is therefore no bonuses or penalties for these CZs;
- In a majority of cases, the amount of bonus or penalty in respect of capacity and environment incentives is significantly lower than 1% of en-route revenues;

- (iii) 13 en-route main ATSPs were in a position to generate bonuses, for a total amount of 12.6 M€₂₀₀₉; and,
- (iv) Two en-route main ATSPs (DSNA and Belgocontrol) reported penalties (-2.7 M€₂₀₀₉).

5.6.7 Figure 28 indicates the situation for each main ATSP and shows that in three cases (ENAV, 1.1%, IAA 1.2% and EANS 1.3%) the amount of bonus is above 1% of the en-route revenues (based on the ATSP chargeable unit rate in 2015 times the actual TSUs).

5.6.8 The inclusion of these bonuses in the chargeable cost bases will be examined by the EC as part of the compliance review of the 2017 unit rates.

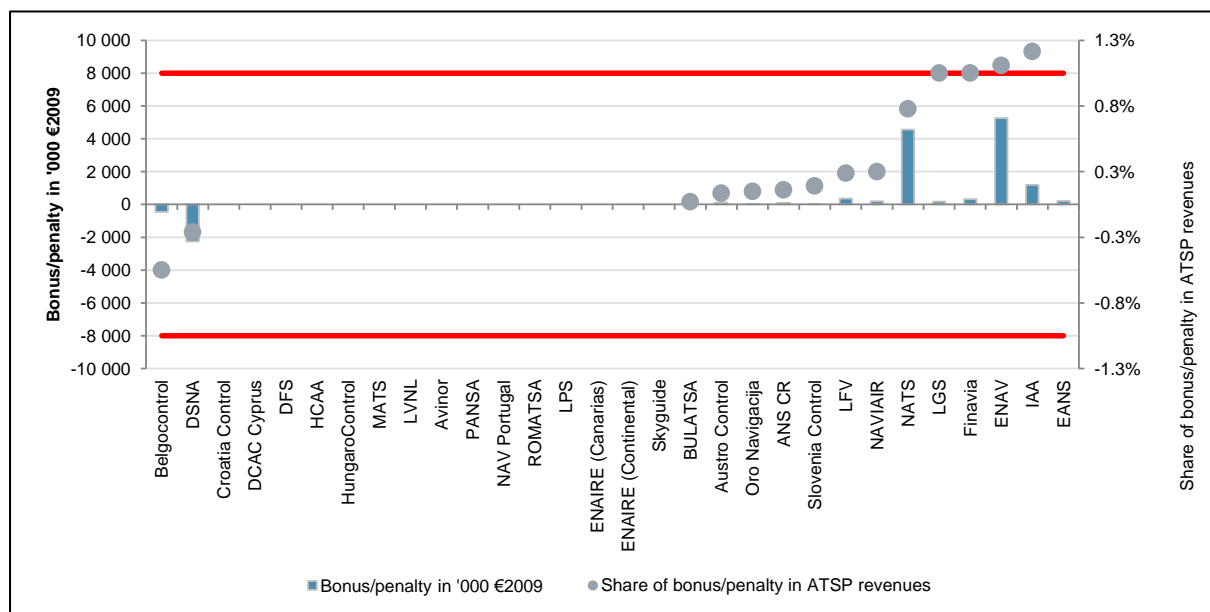


Figure 28: En-route gain(+)/loss(-) to be retained by the main ATSPs in respect of incentives

5.7 ATSPs 2015 overall en-route economic surplus vs. Performance Plans

- 5.7.1 This analysis estimates the “overall economic surplus”, comprising the net ATSP gain/loss on en-route activity (see section ATSP net gain for the 2015 en-route activity above), and the surplus embedded in the cost of capital (return on equity (RoE)). The estimated economic surplus is a useful tool to monitor the financial strength of the ATSPs. Detailed information on the methodology used to compute the estimated economic surplus is available in the Reader’s Guide included in Volume 2 of the PRB 2015 Monitoring Report.
- 5.7.2 The concept of estimated economic surplus is different from the net accounting profit disclosed by the ATSPs in their financial statements. The latter includes revenues and costs relating to the provision of terminal ANS and 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, and is therefore not comparable with the notion of economic surplus.
- 5.7.3 As a consequence, it is important to stress that the overall economic surplus expressed as a percentage of the en-route revenues^x is not directly comparable to the profit margin that would be calculated from ATSPs’ financial statements.
- 5.7.4 Based on the information reported by the States, the en-route surplus embedded in the determined cost of capital is estimated at 244.3 M€₂₀₀₉ for the 29 main ATSPs (see column

2015D in Figure 29). This figure is based on a planned asset base amounting to 6 324 M€₂₀₀₉, of which 55.8% is financed through equity at an average (pre-tax) RoE rate of 6.9%.

- 5.7.5 The actual estimated surplus for the en-route activity in 2015 amounts to 468.2 M€₂₀₀₉ (see column 2015A in Figure 29). This figure comprises the surplus embedded in the actual cost of capital (262.1 M€₂₀₀₉) and the net gain/loss generated in respect of the en-route activity in 2015 (206.1 M€₂₀₀₉, see Figure 27).
- 5.7.6 The estimated surplus at Union-wide level represents 8.7% of 2015 en-route revenues, which is higher than planned in the PPs (4.6%). This corresponds to a (weighted average) ex-post actual RoE of 12.6%, which is also higher than that planned in the PPs (6.9%).
- 5.7.7 The actual estimated surplus includes the reported exemptions from cost-sharing (i.e. 22.7 M€₂₀₀₉) in 2015. These amounts to be recovered from (+) or reimbursed to (-) users will be eligible for carry-over to the following reference period(s), if deemed allowed by the EC. If these exemptions are not allowed by the EC, the actual estimated surplus in 2015 would be slightly lower (i.e. 445.5 M€₂₀₀₉ of the en-route revenues, compared to 468.2 M€₂₀₀₉).

Focus on the main ATSPs: En-route estimated surplus *		
* This calculation of the economic surplus retained by the main ATSPs 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.		
Estimated surplus ('000 €2009)	2015D	2015A
Total asset base	6 324 292	6 364 542
Estimated proportion of financing through equity (in %)	55.8%	58.6%
Estimated proportion of financing through equity (in value)	3 531 033	3 729 562
Estimated proportion of financing through debt (in %)	44.2%	41.4%
Estimated proportion of financing through debt (in value)	2 793 259	2 634 980
Cost of capital pre-tax (in value)	330 739	334 237
Average interest on debt (in %)	3.1%	2.7%
Interest on debt (in value)	86 441	72 115
Determined RoE pre-tax rate (in %)	6.9%	7.0%
Estimated surplus embedded in the cost of capital for en-route (in value)	244 313	262 121
Net ATSP gain(+)/loss(-) on en-route activity	-	206 076
Overall estimated surplus (+/-) for the en-route activity	244 313	468 198
Revenue/costs for the en-route activity	5 289 228	5 353 513
Estimated surplus (+/-) in percent of en-route revenues	4.6%	8.7%
Estimated ex-post RoE pre-tax rate (in %)	6.9%	12.6%

Figure 29: Estimated surplus for en-route activity for the (main) ATSPs at Union-wide level (SES level)

- 5.7.8 The overall estimated surplus at Union-wide level (468.2 M€₂₀₀₉ or 8.7% of en-route revenues) masks different situations amongst the 29 main en-route ATSPs. Figure 30 shows that in 2015, 23 ATSPs have succeeded in increasing their estimated surplus (as a proportion of revenues) compared to the amounts embedded in the determined cost of capital. All the main ATSPs generated a positive estimated actual surplus on their en-route activity in 2015.

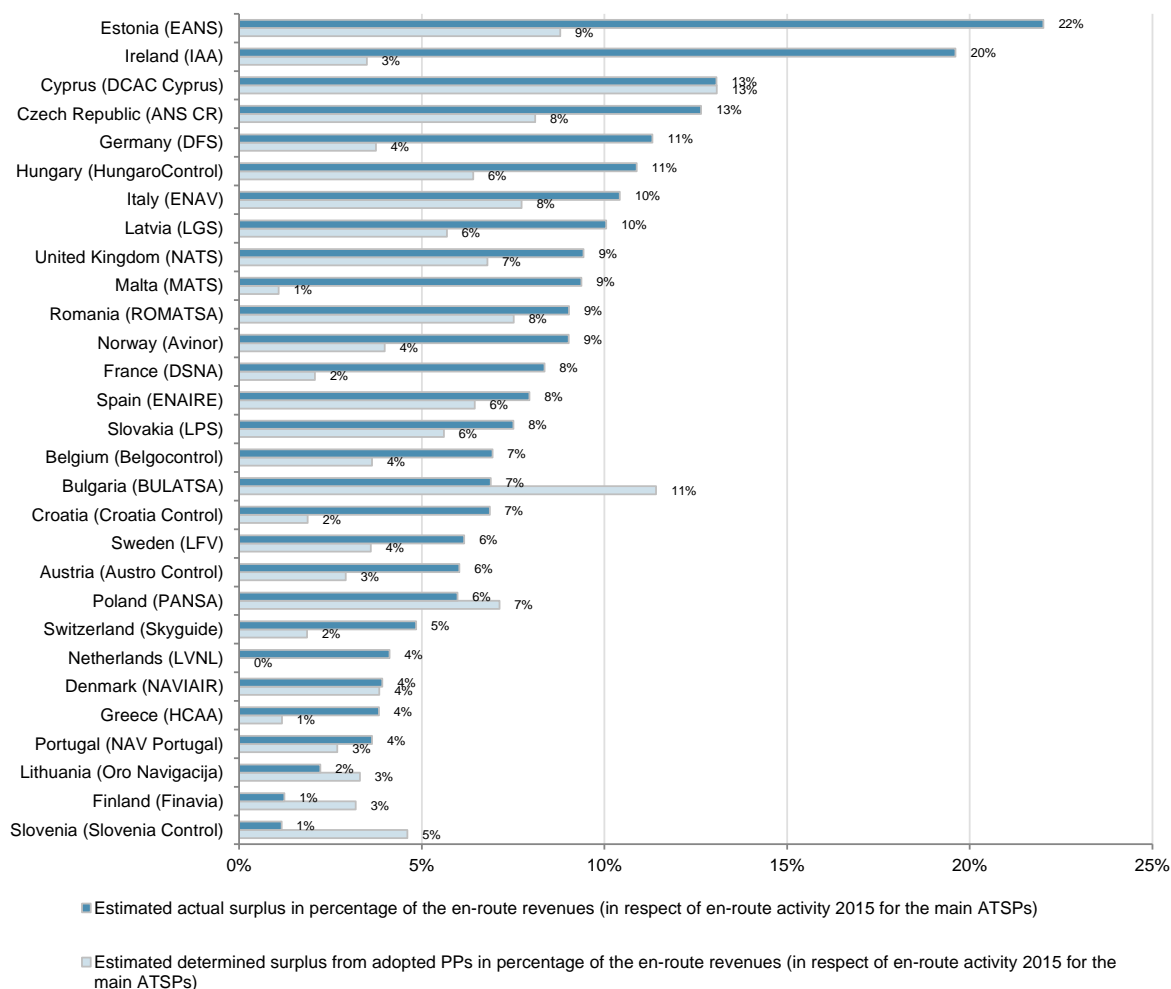


Figure 30: Estimated surplus for the 2015 en-route activity for the main ATSPs

5.7.9 Figure 30 indicates that for six ATSPs, the estimated surplus in 2015 represented more than 10% of their en-route revenues.

- For EANS (Estonia, 22% compared to 9% as planned in the PP), the actual estimated surplus is mainly due to gains arising from the cost sharing mechanism (+1.4 M€₂₀₀₉);
- For IAA (Ireland, 20% compared to 3% as planned in the PP), this is mainly due to a gain of +9.3 M€₂₀₀₉ arising from the cost-sharing mechanism since IAA achieved substantially lower cost than planned (-9.7%);
- DCAC Cyprus actual estimated surplus amounted to 13% in 2015. For DCAC Cyprus, the positive outcome of the traffic risk sharing (1.5 M€₂₀₀₉) outweighed the loss borne in terms of the cost sharing mechanism (-0.7 M€₂₀₀₉);
- For ANS CR (Czech Republic, 13% compared to 8% as planned in the PP), the actual estimated surplus is mainly due to a net gain of +4.6 M€₂₀₀₉ arising from the cost-sharing mechanism;
- For DFS (Germany, 11% compared to 4% as planned in the PP), the actual estimated surplus is mainly due to a net gain of +50.4 M€₂₀₀₉ arising from the cost-sharing mechanism since DFS achieved substantially lower cost than planned (-6.2%); and,
- For HungaroControl (11% compared to 6% as planned in the PP), the actual estimated surplus mainly reflects gains arising from the traffic risk sharing (+3.3 M€₂₀₀₉) and cost sharing (+1.5 M€₂₀₀₉) mechanisms.

5.7.10 Figure 30 also shows that for five ATSPs, the actual estimated surplus in 2015 is lower than the determined.

- For BULATSA (Bulgaria, 7% compared to 11% planned) and Oro Navigacija (Lithuania, 2% compared to 3% planned), this is due mainly to net losses arising from the cost sharing mechanism (-6.9 M€₂₀₀₉ and -0.3 M€₂₀₀₉, respectively).
- For PANSAs (Poland, 6% compared to 7% planned), this is mainly due to a net loss arising from the traffic risk sharing mechanism (-5.4 M€₂₀₀₉) since actual traffic was -11.1% lower than planned; and,
- For Finavia (Finland, 1% compared to 3% planned) and Slovenia Control (1% compared to 5%), this mainly reflects the combination of losses arising from the cost sharing (-0.6 M€₂₀₀₉ and -0.2 M€₂₀₀₉, respectively) and traffic risk sharing mechanisms (-0.9 M€₂₀₀₉ and -0.6 M€₂₀₀₉, respectively).

5.7.11 Figure 30 also indicates that no main ATSP recorded an estimated economic loss on the en-route activity in 2015.

5.7.12 More details on the main ATSPs economic surplus are available in Volume 2 of the PRB 2015 Monitoring Report.

5.8 Union-wide 2015 actual costs and cost for users

5.8.1 This sub-section analyses the actual en-route cost for airspace users in respect of ANS activities in 2015 (also referred to as the “true cost for users”). Note that the “true cost” for users is different from the cost **charged** during the year due to the adjustments foreseen in the performance scheme and SES charging Regulation.

5.8.2 In this context, the “true costs” are a better reflection of the cost-efficiency performance from an airspace user’s point of view. This section attempts to quantify the “true costs” in respect of ANS activities carried out in 2015 which comprise:

- the amounts that have already been charged to the users through the 2015 unit rates, and;
- the different adjustments relating to 2015 activities which will be charged or reimbursed to users in future years.

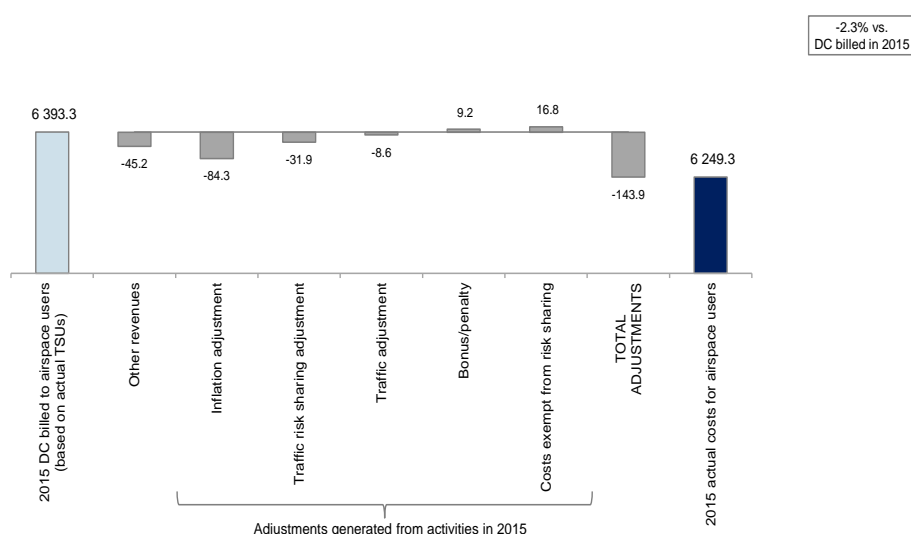


Figure 31: Actual costs for users in respect of the 2015 en-route activity (in M€₂₀₀₉)

- 5.8.3 It should be noted that the PRB calculation of the “true costs” for users does not include the impact of the risk associated with exchange rates linked to the billing of the chargeable unit rate. The unit rate charged to airspace users is established in national currency but billed in Euros using the current exchange rate. In case of exchange rate fluctuations, the actual costs paid by airspace users will be higher or lower than planned.
- 5.8.4 Figure 31 shows that the actual costs incurred by airspace users in respect of activities performed in 2015 (6 249.3 M€₂₀₀₉) are -2.3% (-143.9 M€₂₀₀₉) lower than the DCs billed based on actual TSUs (6 393.3 M€₂₀₀₉).
- 5.8.5 The first factor contributing to the observed difference is the deduction of -45.2 M€₂₀₀₉ of other revenues. In a majority of en-route CZs, there are either no or only small amounts of other revenues deducted from the determined costs. However, a few CZs have material levels of other revenues providing an impact at Union-wide level. This is especially the case for:
- (i) Spain Continental and Spain Canarias (-19.5 M€₂₀₀₉) mainly due to national public funding and commercial revenues;
 - (ii) France (-7.4 M€₂₀₀₉) reflecting reimbursements from the SESAR Joint Undertaking, commercial revenues and EC grants; and,
 - (iii) Croatia (-7.3 M€₂₀₀₉) corresponding to the revenues from service provision in Bosnia & Herzegovina.
- 5.8.6 For almost all States (Croatia, Norway and Switzerland being the only exceptions), the actual inflation index in 2015 is lower than planned in the PPs. The overall net effect of inflation adjustments at State level is a forthcoming reimbursement (-84.3 M€₂₀₀₉) to airspace users.
- 5.8.7 At Union-wide level, TSUs are just +2.0% higher than planned but for 16 CZs, the difference between actual and planned TSUs falls outside the ±2% dead band of the traffic risk sharing mechanism. The net effect of these deviations between actual and planned TSUs is a forthcoming reimbursement (-31.9 M€₂₀₀₉) to airspace users.
- 5.8.8 Since Union-wide traffic is higher than planned, the traffic adjustments relating to costs not subject to traffic risk sharing is again a forthcoming reimbursement (-8.6 M€₂₀₀₉) to airspace users.
- 5.8.9 Thirteen CZs reported bonuses in respect of capacity and environment incentives, while Germany, France, Netherlands and Belgium/Luxembourg are the only CZs that reported penalties (related to MUAC and Belgocontrol). At system level, the overall result of these incentive mechanisms is a bonus of +9.2 M€₂₀₀₉ to be charged to airspace users, if deemed eligible after examination by the EC as part of the compliance review of the 2017 unit rates.
- 5.8.10 Finally, a net amount of 16.8 M€₂₀₀₉ has been reported as costs exempt from cost sharing at Union-wide level. It is important to note that at CZ level, costs exempt from cost sharing are in the majority of cases amounts to be reimbursed to airspace users. However, Sweden reported for its main ATSP an exceptionally high amount to be charged to airspace users (39.8 M€₂₀₀₉) which outweighs the negative amounts reported by the majority of CZs. These costs will be eligible for carry-over (charged/reimbursed to airspace users) to the following reference period(s), if deemed allowed by the EC.

Terminal ANS Cost-Efficiency

5.9 Presentation of the terminal cost-efficiency KPI

- 5.9.1 Although there are no Union-wide cost-efficiency targets for terminal ANS, 2015 is the first year that terminal ANS cost-efficiency performance is monitored according to the requirements of Article 18 of the performance scheme regulation.
- 5.9.2 The terminal cost-efficiency KPI is the result of the ratio between the determined costs and the forecast terminal service units (TNSUs) contained in the PPs. Each State has adopted local cost-efficiency targets at Terminal Charging Zone (TCZ) level for RP2 with the same risk sharing arrangements as for en-route except that traffic risk sharing exemptions can apply for TCZs including airports with less than 225 000 movements.
- 5.9.3 A total of 36 Terminal Charging Zones (TCZs) have been reported (generally one per State, but two for Italy, two for UK and five for Belgium) covering a total of 173 airports.
- 5.9.4 The two TCZs reported by UK have been excluded from this analysis for the following reasons:
- (i) information relating to UK TCZ B (nine airports) has been reported to the EC on a confidential basis (these are airports where terminal ANS are provided on a contractual basis) and;
 - (ii) 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).
- 5.9.5 It should be noted that the 2015 cost-efficiency monitoring analysis for UK TCZ C is available in Volume 2 of the PRB monitoring report.
- 5.9.6 Table 18 presents the aggregation of the terminal DUCs reported by the States (excluding UK) for all years of RP2.

COST-EFFICIENCY DATA FROM PERFORMANCE PLANS	2015P	2016P	2017P	2018P	2019P
Real terminal Determined Unit Costs (in EUR ₂₀₀₉)	180.88	174.40	171.93	167.49	163.33

Table 18: Terminal DUCs for RP2 as per aggregation of PPs (SES level)

- 5.9.7 As discussed under §5.2.4, the adoption of final cost-efficiency targets for the FABEC States (with the exception of Belgium/Luxembourg) is still pending the approval of corrective measures. For these States, the information used in this report reflects the revised PP submitted in July 2015.

5.10 Actual 2015 unit cost vs. DUC in adopted Performance Plans

- 5.10.1 In order to ensure consistency with the DCs data provided in the adopted PPs and to allow for Union-wide consolidation, actual costs are expressed in real terms (€₂₀₀₉ prices).
- 5.10.2 Figure 32 shows that, in 2015, the Union-wide actual terminal unit cost (171.69 €₂₀₀₉) is - 5.1% lower than planned in the RP2 PPs. This deviation results from the combination of higher than planned TNSUs (+2.2%) and lower than planned terminal costs (-3.0%, or -33.1 M€₂₀₀₉).

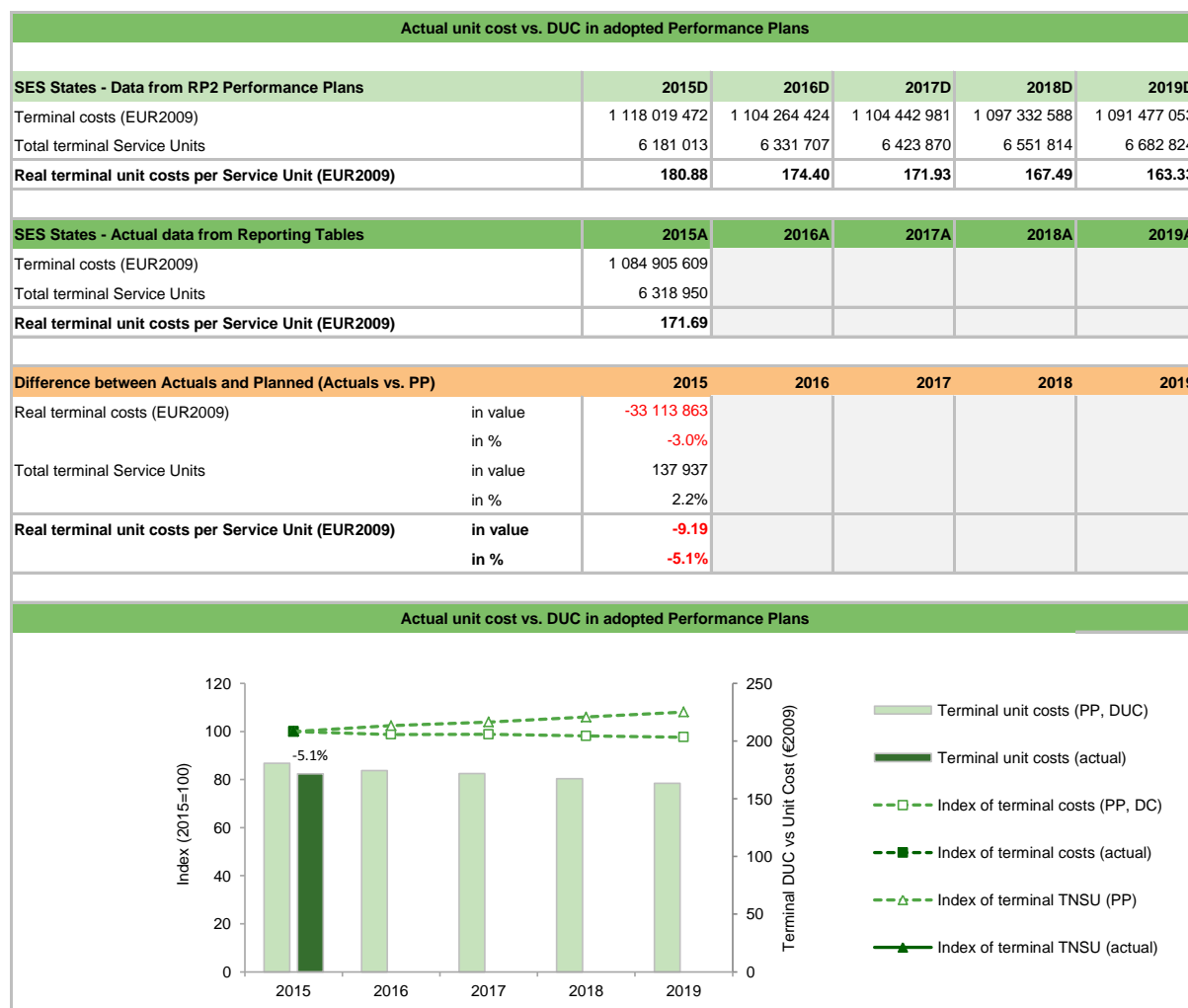


Figure 32: Terminal costs, traffic and unit costs (actual vs. Performance Plans, SES level)

- 5.10.3 Figure 33 indicates that the overall deviation in terms of terminal unit cost observed at Union-wide level (-5.1%) masks different situations across the 34 TCZs.
- 5.10.4 Actual terminal unit costs are lower than planned in 26 TCZs out of 34, with in most cases a combination of lower actual costs and higher traffic compared to RP2 PPs. Among these 26 TCZs, four managed to achieve reductions in the terminal DUC of more than -20.0%: Charleroi (-46.0%, mainly due to the reversal of provisions, leading to negative other operating costs), Antwerpen (-28.0%), Hungary (-27.2%) and Greece (-22.6%).
- 5.10.5 For five TCZs, actual unit costs are higher than planned by more than +5.0%: Sweden (+23.3%), Oostende-Brugge (+12.2%), Luxembourg (+7.4%), Czech Republic (+6.0%) and Slovenia (+5.3%). For Sweden, the terminal DCs are +23.8% higher than planned mainly due to higher pension costs (reported as costs exempt from cost-sharing to be recovered from airspace users in the following reference period(s), if deemed allowed by the EC). For Oostende-Brugge, Czech Republic and Slovenia the higher unit costs are mainly due to lower traffic compared to the forecast used in the PPs.



Figure 33: 2015 TANS actual costs vs. PP at State level

- 5.10.6 For 11 TCZs, the actual number of TNSUs is lower than planned in the RP2 PPs, while for 12 TCZs, it is at least +5% higher. Greece (+32.6%), Antwerpen (+21.4%), Malta (+17.1%), Brussels (+13.8%) and Oostende-Brugge (-17.2%) had traffic levels falling outside the ±10% alert threshold. Among these TCZs, only Malta applies the traffic risk sharing mechanism and will keep additional revenues as part of this mechanism (i.e. maximum amount corresponding to 4.4% of terminal ANS revenues).
- 5.10.7 Figure 34 shows that the TNSU forecasts used in the PPs are lower than (or just matching) the low scenario of the STATFOR forecast (February 2016) until the end of RP2. As for en-route, based on current projections at a Union-wide level the actual terminal traffic over RP2 will be higher than the forecasts provided in the PPs. This implies additional revenues for the States/ATSPs but also amounts to be reimbursed to airspace users according to the traffic risk sharing adjustments.

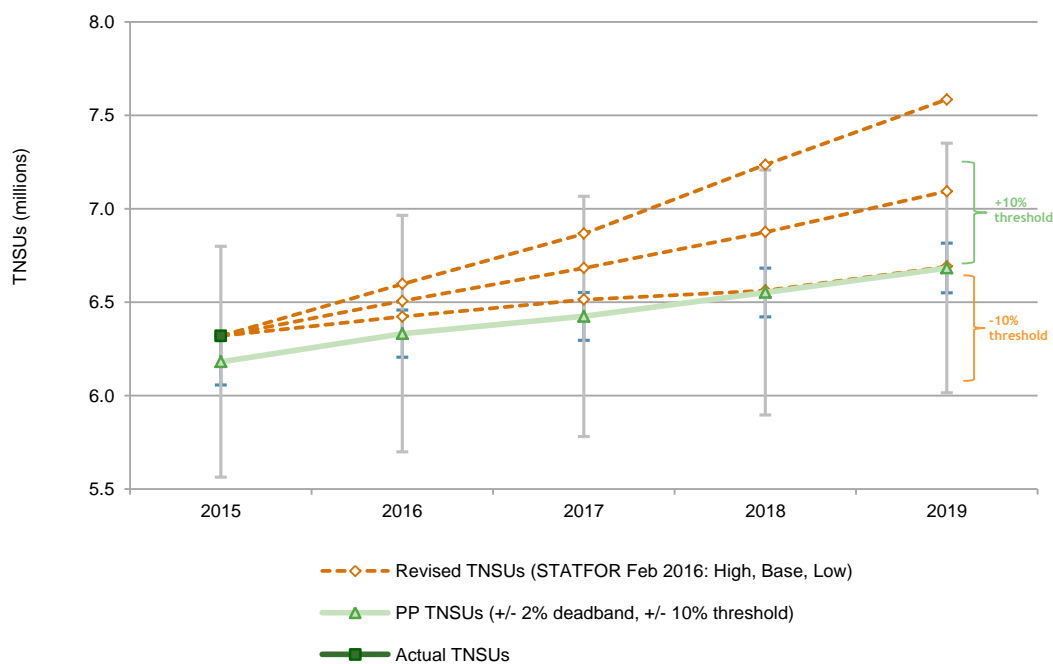


Figure 34: Terminal traffic monitoring (SES level)

5.10.8 Figure 35 shows that at SES level actual terminal costs were lower than planned for all reporting entities in 2015: the main ATSPs (-2.9% or -30.5 M€₂₀₀₉), the other ANSPs (-37.6% or -0.1 M€₂₀₀₉), the MET service providers (-4.4% or -2.1 M€₂₀₀₉) and the NSAs (-3.1% or -0.4 M€₂₀₀₉). As expected, due to their relative size in the TCZs, most of the deviation observed for the total terminal costs is due to the main ATSPs.

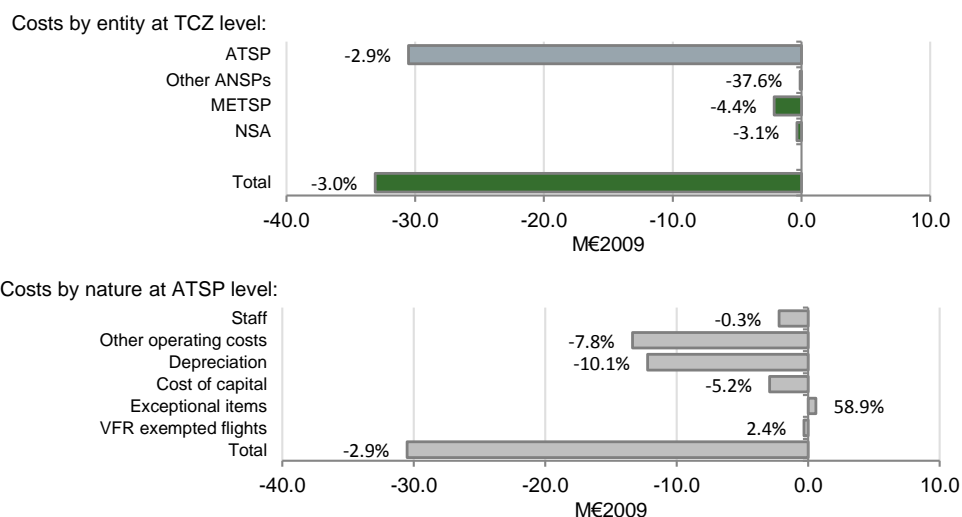


Figure 35: 2015 actual terminal costs compared to PPs (SES level)

5.10.9 Figure 35 also shows that the main drivers for the observed decrease in actual costs compared to the DCs for the main ATSPs in 2015 are: lower other operating costs (-7.8% or -13.4 M€₂₀₀₉); lower depreciation costs (-10.1% or -12.2 M€₂₀₀₉); lower cost of capital (-5.2% or -2.9 M€₂₀₀₉); and lower staff costs (-0.3% or -2.2 M€₂₀₀₉). Only exceptional costs (+58.9% or +0.6 M€₂₀₀₉) were higher than the forecasts provided in the RP2 PPs.

5.10.10 Details on the main drivers underlying the deviation between actual and determined costs for each of these costs categories are available at TCZ level in Volume 2 of the PRB 2015 monitoring report.

5.11 ATSPs 2015 overall terminal economic surplus vs. Performance Plans

5.11.1 Although 30 main ATSPs reported information relating to terminal ANS in 2015, the analysis presented hereafter focuses on 28 ATSPs in order to take into account the specificities of some TCZs:

- Actual data for the ATSPs operating in UK TCZ B (mainly NERL) are not publically available (provided to the European Commission on a confidential basis as terminal ANS are provided on a contractual basis - see §5.9.4).
- In Cyprus and at four Belgian regional TCZs, terminal ANS is 100% subsidised by the States/Regions.

5.11.2 In these cases, the notion of economic surplus is either not appropriate, or to be interpreted with caution. NERL, DCAC and Belgocontrol (except Brussels TCZ) have therefore been excluded from the analysis presented below.

5.11.3 Figure 36 presents: i) the net gain retained by the main ATSPs in 2015 as a result of the variations in costs and traffic, as well as the bonus from capacity incentives (see left-hand side); and ii) the overall estimated surplus when adding to this net gain the return on equity embedded in the cost of capital (see right-hand side).

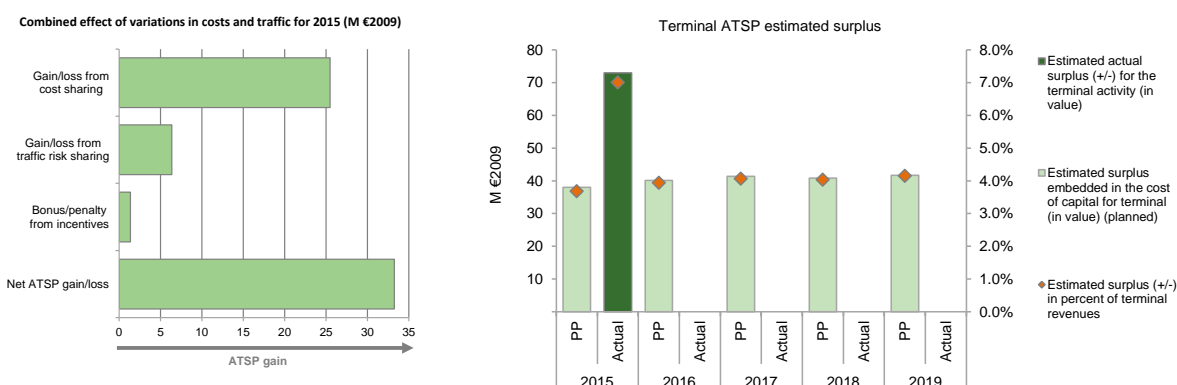


Figure 36: Estimated surplus for the 2015 terminal ANS activity at Union-wide level (SES level)

5.11.4 In 2015, the main ATSPs collectively generated a net gain of +33.3 M€₂₀₀₉ on the terminal activity. This is a combination of three elements:

- a gain of +25.5 M€₂₀₀₉ arising from the cost-sharing mechanism;
- a gain of +6.4 M€₂₀₀₉ arising from the traffic risk-sharing mechanism (applied in 17 out of 34 TCZs); and,
- a gain of +1.4 M€₂₀₀₉, corresponding to a bonus from the capacity incentive mechanism.

5.11.5 Six ATSPs (DFS, ENAV, Finavia, LGS, Oro Navigacija and PANSA) reported a bonus in respect of activity in 2015 (for an overall amount of 1.4 M€₂₀₀₉) and none reported a penalty. The inclusion of these bonuses in the chargeable cost base will be examined by the EC as part of the compliance review of the 2017 unit rates.

5.11.6 Ex-post, the overall estimated surplus taking into account the net gain from the terminal activity mentioned above (33.3 M€₂₀₀₉) and the surplus embedded in the actual cost of

capital (39.7 M€₂₀₀₉) amounts to 73.0 M€₂₀₀₉ (7.0% of the 2015 terminal revenues, see right-hand side of Figure 36). At Union-wide level, the resulting ex-post rate of return on equity (RoE) is 11.6%, which is higher than the 6.1% planned in the PPs. Many TCZs are very small (122 out of 173 airports are below 70 000 air transport movement per year) and in many cases the asset base reported for the TCZ is also very small. The RoE expressed in terms of percentage should therefore be interpreted with caution since relatively high/low values do not necessarily reflect very large gains/losses in absolute values.

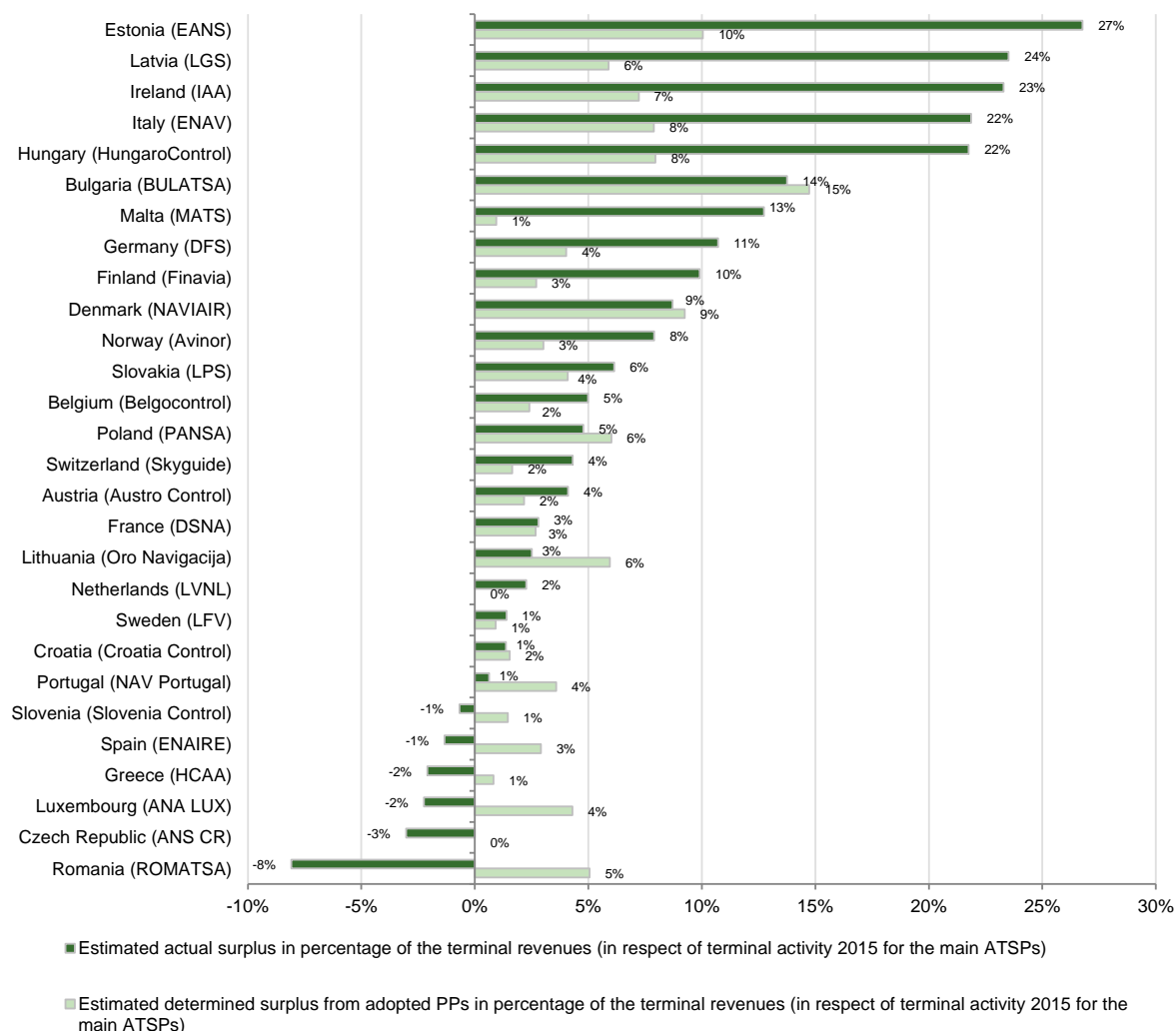


Figure 37: Estimated surplus for the 2015 terminal activity at (main) ATSPs level^{xi}

5.11.7 Figure 37 shows that a majority of ATSPs were in a position to achieve a higher actual estimated surplus than planned. In particular, for the five ATSPs operating in Estonia, Latvia, Ireland², Hungary and Italy, the overall estimated surplus exceeds 20% of ATSPs revenues. All these ATSPs achieved lower costs than planned (from -6.7% for IAA (Ireland)

² The estimated actual surplus shown in Figure 37 (23%) is overstated when considering that Ireland chose to charge a price lower than that calculated from strict application of the Charging Scheme (instead using the lower price determined by the Commission for Aviation Regulation, which in Ireland has been superseded by the SES RP2). It is estimated that the overall actual surplus represents 13% of the terminal revenues.

to -21.9% for HungaroControl (Hungary)). Where traffic risk sharing applies (Estonia, Ireland and Italy - Roma/Fiumicino), actual traffic was higher than planned.

5.11.8 On the other hand, Figure 37 indicates that six out of 29 ATSPs incurred an estimated economic loss in respect of the 2015 terminal activity:

- For Romania, Greece, Luxembourg and Slovenia, where traffic risk sharing does not apply, the observed losses are entirely due to higher actual costs compared to the planned values.
- In the case of Czech Republic, where traffic risk sharing applies, the observed loss is mainly due to lower than planned traffic which cannot be absorbed by the Return on Equity (RoE) since no cost of capital is charged by ANS CR to terminal ANS airspace users.
- In the case of Spain, the estimated surplus embedded in the cost of capital and the positive outcome of the traffic risk sharing were not sufficient to outweigh the significant increase in costs (+6.9%).

5.11.9 More details on the main ATSPs economic surplus are available in the PRB Monitoring Reports at State level (Volume 2).

5.12 Union-wide 2015 actual costs and cost for users

5.12.1 This sub-section analyses the actual terminal costs for airspace users in respect of ANS activities in 2015 (also referred to as the “true cost for users”) in the same way as it is done for en-route ANS (see p.56).

5.12.2 Figure 38 shows that the actual costs incurred by airspace users in respect of activities performed in 2015 (994.6 M€₂₀₀₉) are -13.8% (-159.9 M€₂₀₀₉) lower than the DCs billed based on actual TNSUs (1 154.4 M€₂₀₀₉).

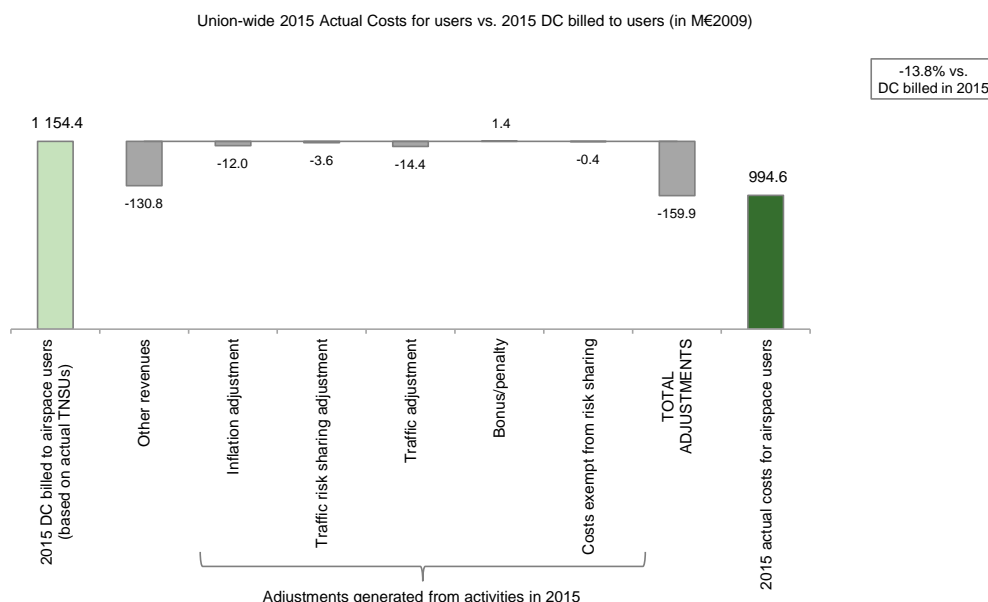


Figure 38: Union-wide 2015 actual costs for users vs. 2015 DCs billed to users (in M€₂₀₀₉) (SES level)

5.12.3 The most important factor contributing to the observed difference is the deduction of -130.8 M€₂₀₀₉ of other revenues. In a large majority of TCZs, there are either no, or only small amounts of other revenues deducted from the determined costs. However, particular

circumstances in a few TCZs have a large impact at Union-wide level. This is especially the case for:

- Spain (-80.9 M€₂₀₀₉) mainly reflecting two elements: 1) the fact that terminal ANS costs are partly financed from commercial revenues, and 2) the reversal of a provision relating to employment costs in 2015;
- Belgium (-27.8 M€₂₀₀₉ in total for the five TCZs) where the financing of TANS in 2015 is partly (Brussels airport) or fully (regional airports) subsidised by the State or regional authorities; and,
- Cyprus (-7.5 M€₂₀₀₉) where terminal ANS was free of charge for the airspace users in 2015 since TANS costs were 100% subsidised by the State.

- 5.12.4 For almost all States (Croatia, Norway and Switzerland being the only exceptions), the actual inflation index in 2015 is lower than planned in the PPs. The overall net effect of inflation adjustments at State level is a forthcoming reimbursement (-12.0 M€₂₀₀₉) to airspace users.
- 5.12.5 Traffic risk sharing applies in 17 TCZs out of the 34 included in this monitoring report. In these TCZs, the net effect of differences between actual and planned TNSUs is a forthcoming reimbursement (-3.6 M€₂₀₀₉) to airspace users. Since traffic was in general higher than planned, the traffic adjustments relating to costs not subject to traffic risk sharing is again a forthcoming reimbursement (-14.4 M€₂₀₀₉) to airspace users.
- 5.12.6 Six ATSPs were in a position to generate a bonus in respect of capacity incentives (no penalties were reported at TCZ level in 2015). It represents an aggregated bonus of 1.4 M€₂₀₀₉. The inclusion of these bonuses in the chargeable cost bases will be examined by the European Commission as part of the compliance review of the 2017 unit rates.
- 5.12.7 Finally, eight TCZs reported costs exempt from cost sharing, representing a total amount of -0.4 M€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.

5.13 Gate-to-Gate ANS DCs monitoring

2015 Gate-to-gate ANS actual costs vs. PP					
SES States - Data from RP2 Performance Plans					
	2015D	2016D	2017D	2018D	2019D
Real en-route costs (determined costs 2015-2019) - (in EUR2009)	6 235 113 277	6 195 879 435	6 197 743 021	6 144 418 842	6 064 161 829
Real terminal ANS costs - (in EUR2009)	1 118 019 472	1 104 264 424	1 104 442 981	1 097 332 588	1 091 477 053
Real gate-to-gate ANS costs - (in EUR2009)	7 353 132 749	7 300 143 859	7 302 186 002	7 241 751 430	7 155 638 882
Share of en-route costs in gate-to-gate ANS costs	84.8%	84.9%	84.9%	84.8%	84.7%
SES States - Actual data from Reporting Tables					
	2015A	2016A	2017A	2018A	2019A
Real en-route costs - (in EUR2009)	6 077 537 050				
Real terminal ANS costs - (in EUR2009)	1 084 905 609				
Real gate-to-gate ANS costs - (in EUR2009)	7 162 442 659				
Share of en-route costs in gate-to-gate ANS costs	84.9%				
Difference between Actuals and Planned (Actuals vs. PP)					
	2015	2016	2017	2018	2019
Real gate-to-gate costs (EUR2009)					
in value	-190 690 090				
in %	-2.6%				
En-route share	0.1%				

Table 19: 2015 gate-to-gate ANS actual costs vs. PPs (SES level)

- 5.13.1 At Union-wide level, actual gate-to-gate ANS costs^{xii} in 2015 are -2.6% lower than planned in the adopted PPs (7 162 M€₂₀₀₉ compared to 7 353 M€₂₀₀₉) due to a combination of lower en-route costs and lower terminal costs.
- 5.13.2 The actual proportion of en-route in total ANS costs (84.9%) is in line with the proportion planned in the PPs (84.8%). This indicates that, at system level, there is no noticeable reallocation of costs from en-route to terminal ANS.

5.14 PRB Findings on Cost-Efficiency

- 5.14.1 The cost-efficiency monitoring results for the first year of RP2 show different economic and operational contexts compared to RP1. This is particularly the case for actual inflation which is for most of the SES States lower than planned in the PPs, and for actual traffic volumes which are on average higher than expected.
- 5.14.2 In 2015, the Union-wide actual en-route unit cost (52.85 €₂₀₀₉) was -4.5% lower than planned in the RP2 PPs (55.33 €₂₀₀₉), and -6.7% lower than the Union-wide target for 2015 (€56.64 €₂₀₀₉) which was adopted by the EC in 2014. The deviation between actual unit costs and the DUC reported in the PPs reflects the fact that actual en-route costs were -2.5% (-157.6 M€₂₀₀₉) lower than the DCs (6 235.1 M€₂₀₀₉), while the actual number of en-route TSUs was +2.0% higher than planned.
- 5.14.3 Due to the degree of uncertainty linked to the long forecasting period until 2019, the Commission Implementation Decision 2014/132/EU (whereas 13) foresees that the European Commission should review the traffic assumptions in 2016 and decide, if appropriate, to revise the Union-wide performance targets for the calendar years 2017 to 2019.
- 5.14.4 In view of the information on actual TSUs 2016 available to date (January to August) showing that actual TSUs are +4.3% higher than planned in the adopted PPs for the same period (i.e. within the ±10% alert threshold) and in view of the STATFOR February 2016 forecast for years 2017 to 2019 which are also within the ±10% alert threshold for both the low case and the baseline scenarios, the PRB recommends to the European Commission not to revise the Union-wide performance targets for the calendar years 2017 to 2019.
- 5.14.5 The current geopolitical situation influences the actual route choices of airspace users, generating large traffic shifts in the European airspace, leading to important increases in traffic in some States and balancing out important decreases in others. In 2015, the actual number of TSUs for six States have exceeded the +/- 10% threshold compared to the planned in the adopted PPs at the basis of their cost-efficiency targets (higher than +10%: Malta [+35.2%], Bulgaria [+22.7%], Greece [+15.8%], Romania [+13.9%] and Cyprus [+10.9%] and lower than -10%: Poland [-11.1%]). Based on the results of the 2015 monitoring, three of the above States have submitted a request for the revision of their cost-efficiency targets for years 2017-2019 to the Commission (Malta, Poland and Bulgaria). Revised data for these States has been provided and is currently being assessed by the European Commission/PRB.
- 5.14.6 The actual estimated surplus for the en-route activity amounts to 468.2M€₂₀₀₉ or some 8.7 % of en-route revenues. This amount comprises the surplus embedded in the actual cost of capital (262.1 M€₂₀₀₉) and the net gain/loss generated in respect of the en-route activity in 2015 (206.1 M€₂₀₀₉). It is noteworthy that in 2015, no ATSP generated an estimated actual economic loss on the en-route activity.
- 5.14.7 In the context of its cost-efficiency monitoring analysis, the PRB also examines the actual en-route costs for airspace users (also referred as “true costs”). The actual en-route costs for airspace users reflect the adjustments relating to 2015 activities which will be charged

or reimbursed to users in future years. The actual costs incurred by airspace users in respect of the en-route activity in 2015 (6 249.3 M€₂₀₀₉) are -2.3% (-143.9 M€₂₀₀₉) lower than the amounts billed in 2015 (based on the DUC and actual TSUs, 6 393.3 M€₂₀₀₉). A significant part of this difference is due to the inflation adjustment (-84.3 M€₂₀₀₉). Indeed, for most of the States, actual inflation for 2015 is much lower than planned in the PPs. This means that the inflation adjustment, which is part of the charging scheme, will lead to a reduction of the unit rates that will be charged to airspace users in 2017. This situation, which is different from that observed during RP1, is not expected to change in the coming years.

- 5.14.8 In 2015, the Union-wide actual terminal unit cost (171.69 €₂₀₀₉) is -5.1% lower than planned in the RP2 PPs. This deviation results from the combination of higher than planned TNSUs (+2.2%) and lower than planned terminal costs (-3.0%, or -33.1 M€₂₀₀₉).
- 5.14.9 The overall estimated surplus generated on the terminal activity in 2015 by the main ATSPs amounts to +73.0 M€₂₀₀₉. This figure comprises the net gains arising from the costs and traffic risk sharing mechanisms (+33.3 M€₂₀₀₉) and the surplus embedded in the actual cost of capital (+39.7 M€₂₀₀₉). Detailed analysis shows that a majority of ATSPs were in a position to achieve in 2015 a higher actual estimated surplus than planned on the terminal activity.
- 5.14.10 The monitoring of gate-to-gate DCs shows that in 2015 the actual proportion of en-route costs in total ANS costs (84.9%) is in line with the proportion planned in the PPs (84.8%). This indicates that, at system level, there was no noticeable reallocation of costs from en-route to terminal ANS.
- 5.14.11 No details were provided (against the draft business plan of 2014 version 0.2 held by the PRB) of the costs of Eurocontrol and in particular their evolution as compared with the evolution of the KPI set out in point 4.1(a). To this effect, Member States shall ensure that Eurocontrol communicates to the Commission its adopted budget and actual budget and cost-base during the reference period, as well as the evolution of the unit cost resulting from the ratio between the adopted cost-base and foreseen traffic evolution, with a breakdown showing the evolution of its various components and identifying separately the various service provision activities. The business plan was unsigned.

5.15 PRB Recommendations

- 5.15.1 The PRB advises the European Commission that they consider suspending the incentive mechanism pending the review of impact of effectiveness of the scheme and its impacts following the changes in delay calculation.
- 5.15.2 The PRB recommends that the Commission considers and assesses Malta, Poland and Bulgaria's requests to revise their RP2 performance targets for years 2017-2019 under the provisions of Article 17 of the Performance Regulation No 390/2013.
- 5.15.3 The PRB advises the European Commission that revision of the EU traffic forecast according to the findings developed in points 5.14.3 and 5.14.4. is not necessary.

5.16 Non compliance

Level Two: In accordance with Annex 1 item 4.2 of the Performance Implementing Regulation 390/2013 that member states provided no details on Eurocontrol performance contribution. (Please note as below in section six the Network Manager provided some details in the submission from the Network Manager it is believed this should have come from the Network Management Board to replicate State submissions).

6. NETWORK PERFORMANCE PLAN

- 6.1.1 The Network Manager’s (NM) Network Performance Plan (NPP) was submitted on 13 November 2014 and, to incorporate PRB comments, updated and approved by the Network Management Board (NMB). The Network Performance Plan for the second reference period of the SES performance scheme (2015-2019) was approved by Commission Implementing Decision (EU) 2016/1373 of 11 August 2016^{xiii}.
- 6.1.2 The NM monitoring report 2015 addressed the KPIs required in the SES performance scheme and also included a number of complementary indicators laid out in the NPP.
- 6.1.3 The monitoring of the NPP is carried out under the auspices of the Performance Steering Committee which, according to the NM monitoring report, held eight meetings in 2015. Selected issues were reported to the Network Directors Operations (NDOP) and the Network Management Board (NMB), the industry-led body governing the network management function.

6.2 Safety

- 6.2.1 Safety assessment of the NM Monitoring Report is developed in the Section 3 of the Volume 4 of the PRB Annual Monitoring Report.

6.3 Environment

- 6.3.1 The Network Manager has targets on the KEP and the KEA indicator. The former is based on flight plans while the latter is based on actual trajectories. As shown in Table 20, while the target has been met for the KEA indicator, the target has not been met for the KEP indicator.

AREA	INDICATOR	2015	2016	2017	2018	2019
SES	KEP	4.78%	4.61%	4.44%	4.27%	4.10%
		4.84%	---	---	---	---
	KEA	2.96%	2.87%	2.78%	2.69%	2.60%
		2.80%	---	---	---	---

Table 20: KEP & KEA Performance at Union-wide level

- 6.3.2 In the Network Manager’s report, the Network Manager explains that although the KEP for the SES area improved by 0.05pp in 2015, the target was missed. Justification for not achieving the target related to flight plans (KEP) relates primarily to capacity shortfalls due to strikes and special events with the unstable political situation on the borders of the NM-area playing a role as well.
- 6.3.3 The Network Manager states that a number of corrective measures have been developed and included in the ERNIP Part 2 – ARN Version 2015 – 2019 and subsequently adopted by the Network Management Board. Corrective measures were developed for BLUEMED FAB, DANUBE FAB, FAB-CE, FABEC, SW-FAB and UK/Irl FAB.
- 6.3.4 Additionally, the NM raises the issue that airspace users are interested in flight planning via the most economical route rather than the most direct route available. Since both route charges and fuel prices fluctuate, this can have an impact on the flight planning process.

6.4 Capacity

- 6.4.1 Average en-route ATFM delay in the SES RP2 area in 2015 was 0.76 minutes per flight which means that the Union-wide capacity target of 0.5 minutes was not achieved. A breakdown of the delay categories, as reported by NM, is shown in Figure 39.

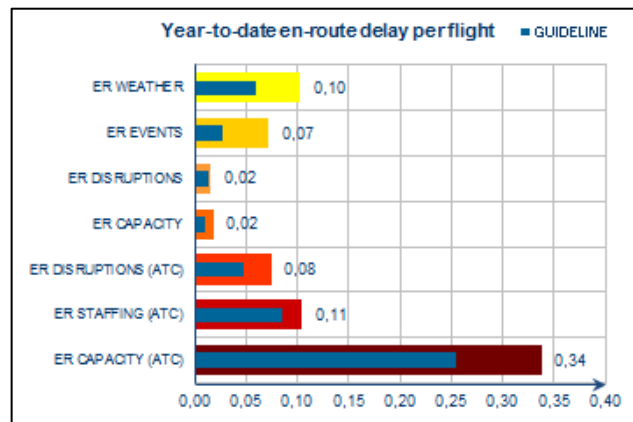


Figure 39: En-route ATFM delay (2015)

- 6.4.2 According to the NM report, the underperformance in the SES RP2 area in 2015 was mainly due to capacity and staffing issues (particularly in the third quarter of 2015 which was the busiest on record), ATC Industrial action in April, the ATC system change for Brest ACC (ERATO) in December and more weather related delays than in 2014.
- 6.4.3 Although the NM plan to mitigate ATC industrial actions has evolved over the past 5 years, the impact of ATC industrial action was substantial in 2015. According to the NM, the mitigation plan enables to reduce expected strike-related delays by 75% but no further reductions beyond this level are expected, unless the French national law regulating the strikes is reviewed.
- 6.4.4 The unstable transition planning of the ERATO system at Brest ACC accounted for close to 10% of total en-route ATFM delays in 2015 and lessons learned have been developed by NM together with DSNA for future system transitions.
- 6.4.5 Without the delay due to ATC industrial action and the disruptions due to the ERATO system upgrade in France, the average en-route ATFM delay would have been 0.63 minute per flight in 2015 which is closer to the Union-wide target but still above the required 0.5 minutes per flight.
- 6.4.6 The NM monitoring report states that social (e.g. French ATC strikes) or staffing issues (e.g. DSNA, NAV Portugal, HANSP, BELGOCONTROL, Cyprus DCA) put a limit on operational actions that can be performed by NM to achieve the Union-wide target. Although the NM reports that there are often limited possibilities for the NM to further reduce ATFM delays due to poor sector configurations (i.e. ANSPs not matching capacities declared in the Network Operations Plan (NOP)) or constant staffing/social issues, the NM works with ACCs causing those delays and has proposed a number of corrective measures which were included in the NOP 2015-2019.
- 6.4.7 Proposed corrective measures for DSNA, HCAA, and Cyprus DCA were included in the NOP 2015-2019 and adopted by the NMB. Specific action plans were launched for Cyprus DCA and the Hellenic CAA.
- 6.4.8 The NM monitoring report did not contain any information on the flexible use of airspace and on how closer cooperation and coordination between civil and military stakeholders

will result in additional capacity for general air traffic. It is stated that the updated NPP submitted in June 2015 responded to this issue.

6.5 Cost-Efficiency

- 6.5.1 The approved NPP cost-efficiency target is the total NM Costs in nominal terms.
- 6.5.2 The 2015 total actual NM costs in nominal terms amount to 213 908 K€ which is -1.3% lower than planned in the approved NPP (216 810 K€).
- 6.5.3 The cost efficiency target for the NM has therefore been met in 2015.
- 6.5.4 The costs are reported to be lower than planned due to a reduction of the overhead cost and an under spending of the operating expenditure.
- 6.5.5 It is noted that NM had applied for CEF funding in the context of the CEF Call 2014. It is reported that mechanisms will be developed to address the management of the CEF funds. Additional information could be made available based on the information provided to the NMB Budget TF.

NM Cost (nominal, '000€)	FORECASTS RP2					NM Cost (nominal, 000€)	Monitoring RP2 Actual costs				
	2015 F	2016 F	2017 F	2018 F	2019 F		2015 A	2016 A	2017 A	2018 A	2019 A
Grand Total	216 810	217 045	218 126	220 360	223 561	Grand Total	213 908				
						% deviation Actual vs. Forecast	-1.3%				

Table 21: Total NM costs forecast profile and 2015 actual NM costs

NM Costs (nominal, 000€)	RP2 PLANNED COSTS PROFILE from NPP					NM Costs (nominal, 000€)	Monitoring RP2 Actual costs				
	2015 F	2016 F	2017 F	2018 F	2019 F		2015 A	2016 A	2017 A	2018 A	2019 A
1 1a Staff Remuneration	91 883	93 189	94 725	96 360	98 927	Staff Remuneration	94 449				
1 2 Operating	45 609	44 693	43 656	43 873	43 366	Operating	42 068				
1 3 Depreciation	3 587	3 521	3 996	4 773	5 158	Depreciation	2 556				
1 4 Cost of capital	252	381	441	473	487	Cost of capital	84				
1 1a Staff Receipts	-974	-1 005	-1 025	-1 046	-1 087	Staff Receipts	-1 048				
1 2 Other Receipts	-1 140	-1 393	-1 643	-1 643	-1 643	Other Receipts	0				
1 2 Sales of services UPP	-913	-839	-842	-848	-848	Sales of services UPP	-1 240				
1 2 Sales of services UPP Overhead	-273	-252	-252	-254	-254	Sales of services UPP Overhead	0				
Indirect Costs	41 767	41 323	41 045	40 338	41 064	Indirect Costs	41 037				
Future (net) Costs Total	179 798	179 618	180 101	182 026	185 170	Future (net) Costs Total	177 906				
Costs of the Past	37 012	37 427	38 025	38 334	38 391	Costs of the Past	36 002				
Grand Total	216 810	217 045	218 126	220 360	223 561	Grand Total	213 908				

Table 22: Breakdown of total NM costs and receipt forecasts and actual

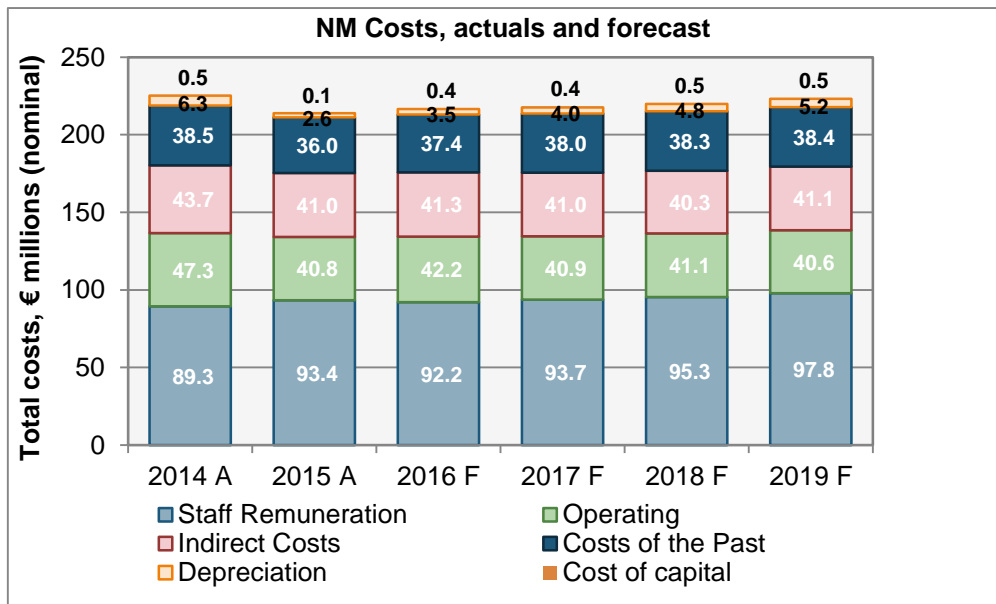


Figure 40: Evolution of total NM (net) costs - 2015 Actual and 2016-2019 forecasts

7. ALERT THRESHOLDS

7.1 Presentation of the Alert Thresholds

7.1.1 Article 19 of the Performance Regulation 390/2013 defines specific mechanisms to handle exceptional situations occurring in Reference Periods. These “alert mechanisms” can be triggered in Reference Periods at both Union-wide level and local level when unforeseeable circumstances occur that are both insurmountable and beyond the control of the States, ANSPs and Network Manager or when alert threshold(s) are reached at EU level.

7.1.2 Two traffic alert thresholds, one at Union-wide level and one at local level, were defined in Commission Decision 2014/132/EU of 11 March 2014ⁱⁱ setting the Union-wide performance targets and alert thresholds for the provision of ANS for the second reference period 2015-2019:

- a deviation over a calendar year by at least 10% of actual traffic expressed in en-route service units compared to Union-wide planned figure (108,541,000 in 2015) defined in the Annex of the Commission Implementing Decision of 11 March 2014 (2014/132/EU);
- a deviation over a calendar year by at least 10% of actual traffic expressed in service units compared with forecasts set out in the respective Performance planes at local level.

7.2 Union-wide level

7.2.1 The PRB has assessed the 2015 traffic data and has concluded that the traffic alert threshold of $\pm 10\%$ was not reached at Union-wide level. Actual en-route Service Units in 2015 were 114,994,014 i.e. +5.9% higher than the planned 2015 value in Article 5 Annex 1 of the Commission Decision (2014/132/EU) (see Figure 41). It is noteworthy that the Union-wide targets for RP2 were based on STATFOR low case scenario (September 2013).

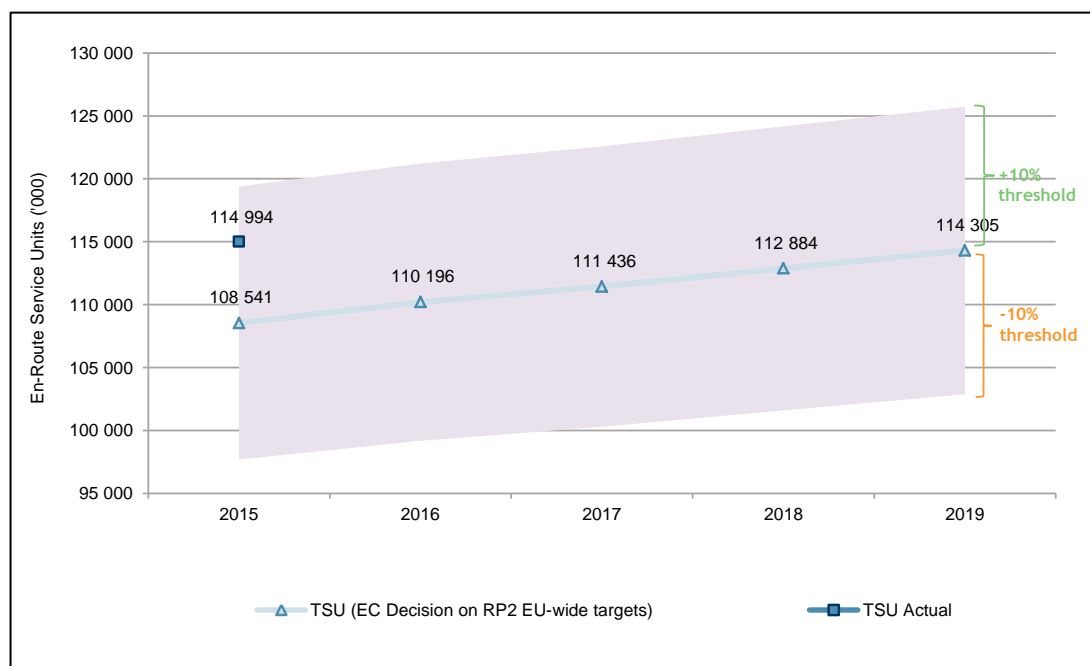


Figure 41: En-route service units at Union-wide level

7.3 Local Level

7.3.1 According to Article 19(3) of the Performance Regulation, States may decide to apply different alert thresholds than the Union-wide at local level. In this case, they shall describe and justify them in their Performance Plan. So far, no States decided to use a different alert threshold. Therefore the same threshold ($\pm 10\%$ compared to the traffic forecasts contained in each Performance Plan) applies to all the en-route charging zones.

7.3.2 Figure 42 presents the proportional difference between actual and planned en-route Service Units for charging zone in 2015.

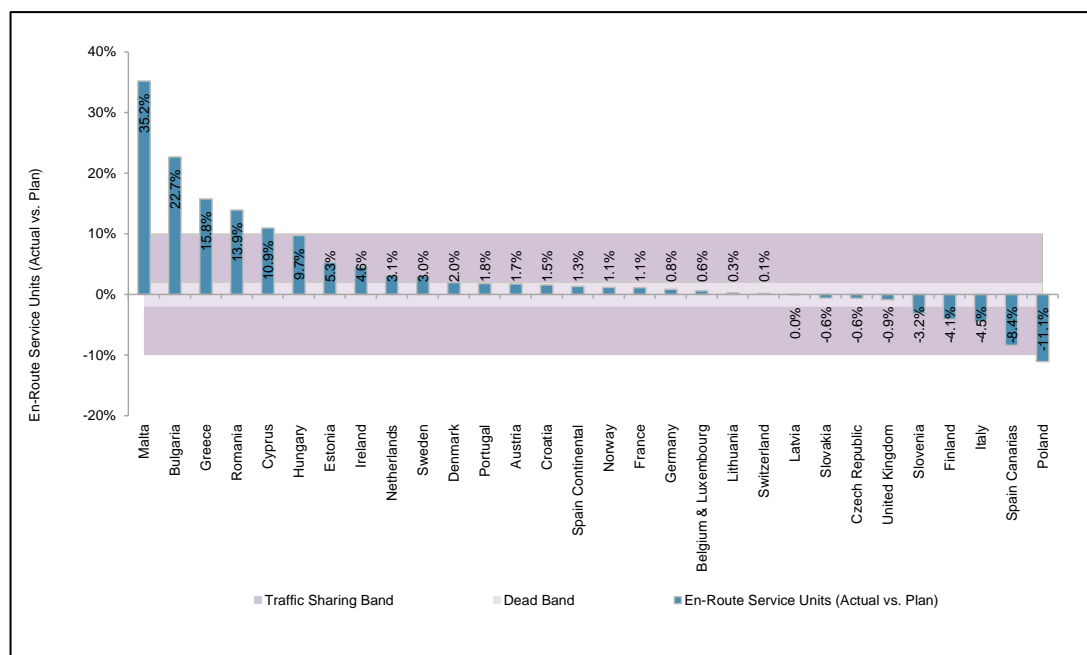


Figure 42: 2014 En-route actual service units versus PP by charging zone

7.3.3 Figure 42 shows that Malta (+35.2%), Bulgaria (+22.7%), Greece (+15.8%), Romania (+13.9%) and Cyprus (+10.9%) experienced a traffic in 2015 above the +10% threshold. On the other side, Poland (-11.1%) exceeded the -10% threshold.

7.3.4 Bulgaria, Malta and Poland have submitted a proposal to the European Commission for revising their RP2 performance targets.

7.3.5 It is noteworthy that, based on the traffic risk-sharing mechanism defined in the Charging Regulation 391/2013^{viii}, if traffic is below -10% (or respectively above +10%), all losses exceeding -10% (or respectively all gains exceeding +10%) may be recovered from (or shall be returned to) airspace users through an adjustment of the chargeable unit rate in n+2.

8. SUMMARY OF FINDINGS

8.1 Safety

- 8.1.1 The safety reporting environment is changing in Europe, due to introduction of the new Occurrence Reporting Scheme in November 2015, and it has to be accepted that the next few years will be a transition phase. During this time, in order to maintain and improve European reporting, it is important that actors responsible for the collection of safety data work together in order to create an optimum solution.
- 8.1.2 During this transition phase, availability, completeness and quality of safety data may change if there are no appropriate arrangements in place between all parties involved in the process.
- 8.1.3 The analysis of ANS accidents and serious incidents shows an overall decreasing trend in the number of serious incidents since 2010, whilst the number of accidents has remained approximately static with fluctuations within the analysed period.
- 8.1.4 Monitoring of trends of, as a minimum, separation minima infringements, runway incursions, airspace infringements, and ATM-specific occurrences at all air traffic services units, throughout the course of RP2, may be used to monitor whether reporting rates are improving and whether the risks are increasing. On the other hand, the trends might show whether the occurrence reporting regulation and subsequently the submitted data into the ECR are improving in terms of both quality and completeness.
- 8.1.5 The Polish Air Navigation Services Agency (PANSAs) has a significant decrease in effectiveness of safety management level (23%) - comparing to the levels declared in previous years. The Polish CAA, in its Monitoring Report, reports discrepancies between the information presented by PANSAs related to implementation and functioning of SMS and its findings during inspections conducted in the framework of the ongoing safety oversight of ATM/ANS. Hence, the CAA has challenged some of the ANSP's responses as the Polish CAA is particularly concerned about safety culture, understanding of safety management accountabilities by relevant staff and contractors and formal risk management process within the ANSP.
- 8.1.6 From the Union-wide perspective and taken all occurrences reported collectively, targets for 2017, as per Commission Implementing Decision (EU) 2015/19, are already achieved, except for ATM Overall for runway incursions and ATM-specific occurrences, which both are only 4% below the target.
- 8.1.7 In addition, the RAT methodology application targets for 2017 and 2019 have already been achieved in full by five (5) FABs: Baltic FAB, Danube FAB, FAB CE, FABEC, NEFAB and UK-Ireland FAB.

8.2 Environment

- 8.2.1 In terms of flight efficiency at Union-wide level, the KEP target has not been met, while the KEA target has been met. The KEA target has seen mixed results in terms of local achievements but could be considered positive in general, and as a result the corresponding target at Union-wide level has been met.
- 8.2.2 The gap between the values of KEP and KEA values is not closing and points to possible issues in terms of information sharing which in turn leads to inefficiencies. As the flight plans are ultimately filed by the airspace users, it is important to ensure that they are made aware of the different opportunities offered by the ANSPs, this is in order to reduce

wastage of efforts and disproportionate ANSP reorganization which is not used by the users.

- 8.2.3 The trajectories, on which the Horizontal Flight Efficiency indicators are calculated, are the results of complex interactions between stakeholders with differing objectives and constraints, which can be physical, economical, or organizational.
- 8.2.4 These interactions are difficult to quantify; the implementation of FRA, internal and cross-border is clearly linked to lower levels of inefficiency and lower gaps between the KEP and KEA and should be considered an essential component for the achievement of targets in the Reference Period.
- 8.2.5 Several States did not provide the requested information regarding Effective Booking Procedures, as listed in Article 4 paragraph 1 (m) & (n) of the FUA Regulation (EC) No 2150/2005.

8.3 Capacity

En-Route Capacity

- 8.3.1 That there is a significant and persistent drop in Capacity performance, in that, there is a deteriorating trend over three years and the size of the gap is 0.26 minute/flight and these are considered to be manageable items.
- 8.3.2 The Union-wide target for average en-route ATFM delay per flight for 2015, 0.5 minutes, was not achieved, with a capacity performance of 0.76 minutes per flight.
- 8.3.3 Current ANSP Capacity plans contained within the Network Operations Plan 2016-2019/20 are insufficient to achieve the Union-wide target for en-route ATFM delay for any year during RP2.
- 8.3.4 3 FABs provided performance levels below the capacity contribution required to be consistent with the Union-wide target. 6 of the 9 FABs achieved a capacity performance that was consistent with the Union-wide target of 0.5 minutes per flight.
- 8.3.5 The non-achievement of the Union-wide target for en-route capacity resulted in an additional cost to airspace users, estimated to be in the region of €240 million.
- 8.3.6 In accordance with the en-route capacity incentive schemes implemented by the various FABs and States, in 2015, 13 ANSPs achieved performance levels which resulted in an aggregated additional payment equivalent to over €14 million. 3 ANSPs achieved performance levels that result in aggregated financial penalties equivalent to €3.7 million. 2 ANSPs were not subject to an incentive scheme and the remaining 12 ANSPs achieved capacity performance within a dead-band of neither penalty nor bonus.

Airport Capacity

- 8.3.7 Across Europe, the airport-related performance of air navigation services varies significantly from State to State and locally for each of the airports subject to RP2. Details on the local performance can be found in Volume 2 of the PRB Annual Monitoring Report.
- 8.3.8 The European aggregated arrival ATFM delay ranges at 0.64 minutes per arrival (cf. Figure 16). FABEC and UK-Ireland exceed the European average, while the performance of SW-FAB ranges at approximately the European level. All other FABs show a significantly better performance in terms of arrival ATFM delay. This is primarily driven with the lower levels of traffic experienced at the airports of these FABs (cf. Volume 2).

- 8.3.9 Across Europe, there is a discernible number of flights not adhering to ATFM slots. This has an impact on the network as predictability and may negatively impact the capacity/demand balance. A compliance rate of 90% seems to be a natural bound in terms of good performance. States are encouraged to investigate with the local airport operators and service providers to investigate processes to ensure a higher level of compliance. This is particularly required for airport with a yearly traffic below 15000 departures.

8.4 Cost-Efficiency

- 8.4.1 The cost-efficiency monitoring results for the first year of RP2 show different economic and operational contexts compared to RP1. This is particularly the case for actual inflation which is for most of the SES States lower than planned in the PPs, and for actual traffic volumes which are on average higher than expected.
- 8.4.2 In 2015, the Union-wide actual en-route unit cost (52.85 €₂₀₀₉) was -4.5% lower than planned in the RP2 PPs (55.33 €₂₀₀₉), and -6.7% lower than the Union-wide target for 2015 (€56.64 €₂₀₀₉) which was adopted by the EC in 2014. The deviation between actual unit costs and the DUC reported in the PPs reflects the fact that actual en-route costs were -2.5% (-157.6 M€₂₀₀₉) lower than the DCs (6 235.1 M€₂₀₀₉), while the actual number of en-route TSUs was +2.0% higher than planned.
- 8.4.3 Due to the degree of uncertainty linked to the long forecasting period until 2019, the Commission Implementation Decision 2014/132/EU (whereas 13) foresees that the European Commission should review the traffic assumptions in 2016 and decide, if appropriate, to revise the Union-wide performance targets for the calendar years 2017 to 2019.
- 8.4.4 In view of the information on actual TSUs 2016 available to date (January to August) showing that actual TSUs are +4.3% higher than planned in the adopted PPs for the same period (i.e. within the ±10% alert threshold) and in view of the STATFOR February 2016 forecast for years 2017 to 2019 which are also within the ±10% alert threshold for both the low case and the baseline scenarios, the PRB recommends to the European Commission not to revise the Union-wide performance targets for the calendar years 2017 to 2019.
- 8.4.5 The current geopolitical situation influences the actual route choices of airspace users, generating large traffic shifts in the European airspace, leading to important increases in traffic in some States and balancing out important decreases in others. In 2015, the actual number of TSUs for six States have exceeded the +/- 10% threshold compared to the planned in the adopted PPs at the basis of their cost-efficiency targets (higher than +10%: Malta [+35.2%], Bulgaria [+22.7%], Greece [+15.8%], Romania [+13.9%] and Cyprus [+10.9%] and lower than -10%: Poland [-11.1%]). Based on the results of the 2015 monitoring, three of the above States have submitted a request for the revision of their cost-efficiency targets for years 2017-2019 to the Commission (Malta, Poland and Bulgaria). Revised data for these States has been provided and is currently being assessed by the European Commission/PRB.
- 8.4.6 The actual estimated surplus for the en-route activity amounts to 468.2M€₂₀₀₉ or some 8.7 % of en-route revenues. This amount comprises the surplus embedded in the actual cost of capital (262.1 M€₂₀₀₉) and the net gain/loss generated in respect of the en-route activity in 2015 (206.1 M€₂₀₀₉). It is noteworthy that in 2015, no ATSP generated an estimated actual economic loss on the en-route activity.
- 8.4.7 In the context of its cost-efficiency monitoring analysis, the PRB also examines the actual en-route costs for airspace users (also referred as “true costs”). The actual en-route costs for airspace users reflect the adjustments relating to 2015 activities which will be charged

or reimbursed to users in future years. The actual costs incurred by airspace users in respect of the en-route activity in 2015 (6 249.3 M€₂₀₀₉) are -2.3% (-143.9 M€₂₀₀₉) lower than the amounts billed in 2015 (based on the DUC and actual TSUs, 6 393.3 M€₂₀₀₉). A significant part of this difference is due to the inflation adjustment (-84.3 M€₂₀₀₉). Indeed, for most of the States, actual inflation for 2015 is much lower than planned in the PPs. This means that the inflation adjustment, which is part of the charging scheme, will lead to a reduction of the unit rates that will be charged to airspace users in 2017. This situation, which is different from that observed during RP1, is not expected to change in the coming years.

- 8.4.8 In 2015, the Union-wide actual terminal unit cost (171.69 €₂₀₀₉) is -5.1% lower than planned in the RP2 PPs. This deviation results from the combination of higher than planned TNSUs (+2.2%) and lower than planned terminal costs (-3.0%, or -33.1 M€₂₀₀₉).
- 8.4.9 The overall estimated surplus generated on the terminal activity in 2015 by the main ATSPs amounts to +73.0 M€₂₀₀₉. This figure comprises the net gains arising from the costs and traffic risk sharing mechanisms (+33.3 M€₂₀₀₉) and the surplus embedded in the actual cost of capital (+39.7 M€₂₀₀₉). Detailed analysis shows that a majority of ATSPs were in a position to achieve in 2015 a higher actual estimated surplus than planned on the terminal activity.
- 8.4.10 The monitoring of gate-to-gate DCs shows that in 2015 the actual proportion of en-route costs in total ANS costs (84.9%) is in line with the proportion planned in the PPs (84.8%). This indicates that, at system level, there was no noticeable reallocation of costs from en-route to terminal ANS.
- 8.4.11 No details were provided (against the draft business plan of 2014 version 0.2 held by the PRB) of the costs of Eurocontrol and in particular their evolution as compared with the evolution of the KPI set out in point 4.1(a). To this effect, Member States shall ensure that Eurocontrol communicates to the Commission its adopted budget and actual budget and cost-base during the reference period, as well as the evolution of the unit cost resulting from the ratio between the adopted cost-base and foreseen traffic evolution, with a breakdown showing the evolution of its various components and identifying separately the various service provision activities. The business plan was unsigned.

9. SUMMARY OF PRB RECOMMENDATIONS

9.1 Safety

- 9.1.1 The PRB advises all States that, in accordance with the provisions of Article 21.1 and 21.2 of the Regulation (EU) 390/2013, they have to improve the completeness of safety data reported to EASA for the Performance Scheme.
- 9.1.2 The PRB advises that the Commission to ensure that arrangements are put in place during RP2 between all parties involved in the process of safety data, to ensure that during RP2, availability, completeness and quality of safety data reported to the Performance Scheme improves on European level.
- 9.1.3 The PRB observes that PANSAs have a significant lower score and level for the EoS safety indicator than those reported in previous years, as a result of the Polish CAA oversight. To reverse this trend, PANSAs will need to ensure that measures are put in place that will improve the EoS indicator. The PRB advises the Commission to closely monitor safety management implementation levels by PANSAs in the next years of RP2 as to ensure that the measures are effective in reaching the targets in 2019. This can be done by way of inspections and audits by EASA and/or the NSA to track progress towards achieving the target set for EoS.

9.2 Environment

- 9.2.1 The PRB observes that in accordance with the provisions of Article 18.1 of the Performance Regulation 390/2013, the Network Manager and States should report, in the next reporting cycle, specific information on the analyses and activities undertaken to improve flight efficiency, and their expected impact on the value of the indicator.
- 9.2.2 The PRB observes that more could be done by FABs and the Network Manager to implement, to the fullest extent possible, cross-border Free Routes projects.
- 9.2.3 The PRB advises the European Commission that there is an absence of information from Member States on how civil military coordination and cooperation has increased capacity, in reference to Article 11 paragraph 3(f) of the performance Regulation. This concern means that the measure is ineffective. The PRB would like to see this reviewed with a cross section of users and military, taking into account new developments in this area, with a view to improving the measure with clear guidance to States on how this should be reported. Review of the Annual Monitoring Reports shows the lack of a clear and consistent manner for States/FABs to determine if they are providing all airspace users with the full benefits of the Flexible Use of Airspace (FUA) concept. Without clear documentation and guidance, States/FABs are unable to describe how well they are performing in the objective of satisfying all airspace users' requirements. It is the opinion of the PRB that guidance could be developed for publication to States to improve reporting and transparency, or the measure removed.
- 9.2.4 The PRB observes that no impact statement was given during the implementation of the airport data requirement suggesting that there is a risk that the value of data versus the complexity and cost of obtaining it, is disproportionate. This issue should be examined with small airport operators to review the effectiveness of this measure with a view to either applying guidance to operators to ensure that the data is delivered, or that the application of measure is revised through a minimum application threshold.
- 9.2.5 The PRB recommends that the States focus on the achievement of full implementation of Free Route Airspace on a H24 basis throughout the SES area as soon as possible, and at the

latest by 2021 in line with the ATM Master Plan, using or applying a differentiated approach as necessary.

9.3 Capacity

En-Route Capacity

- 9.3.1 The PRB recommends to the European Commission that intervention is necessary under Article 18.2 of the performance regulation. The SW FAB should be invited to provide corrective measures; Blue Med and FABEC, who are already under consideration of corrective measures for planning, should be invited to include plans to improve capacity as soon as possible.
- 9.3.2 The PRB recommends that the Commission and the States ensure that ANSP capacity plans published in the Network Operations Plan should, at a minimum, be consistent with the Network's capacity requirements to meet the Union-wide targets in accordance with the provisions of the Performance Regulation 390/2013.
- 9.3.3 The PRB recommends that the Member States of BLUEMED, FABEC and SW-FAB instruct their ANSPs to develop capacity plans that will, at a minimum, meet the required level of FAB performance, in accordance with the provisions of the Performance Regulation 390/2013.
- 9.3.4 The PRB recommends that the Member States of BLUEMED and FABEC should provide information to the Commission on how the resources of the FAB are being deployed to resolve their capacity shortfalls in certain areas, in accordance with the provisions of the Performance Regulation 390/2013.
- 9.3.5 The PRB recommends to the Commission and the States that the issue of incentive schemes should be considered for suspension during the evaluation of the effects of delay management changes in addition to the incentive concerns raised in cost efficiency.
- 9.3.6 The PRB advises that the Member States of BALTIC, BLUEMED, DANUBE, FAB-CE, FABEC, NEFAB, SW-FAB and UK-IRL FAB review the incentive schemes that have been applied. The review should consider, inter alia, compliance with the Charging and Performance Regulations, effectiveness of scheme in improving ANS provision to airspace users.

Airport Capacity

- 9.3.7 The PRB observes that the monitoring of operational performance at airports is dependent on the implementation of the airport operator data flow. Under Annex V of the Performance Regulation 390/2013, States are required to ensure the airport operator data flow and to empower the identified reporting entities in their task to collect the required data locally at airport level. The PRB opinion is that the European Commission should conduct a data collection review in order to either; improve the required collection of data, or provide enforcement of data requirement to ensure data is received.
- 9.3.8 The PRB observes to the European Commission and the States that the application of the incentive scheme for the national target on arrival ATFM delay needs to be carefully reviewed. In particular, the incentive mechanism needs to be in compliance with Article 12 of the Performance Regulation 390/2013 and Article 15 of the Charging Regulation 391/2013.

9.4 **Cost-Efficiency**

- 9.4.1 The PRB advises the European Commission that they consider suspending the incentive mechanism pending the review of impact of effectiveness of the scheme and its impacts following the changes in delay calculation.
- 9.4.2 The PRB recommends that the Commission considers and assesses Malta, Poland and Bulgaria's requests to revise their RP2 performance targets for years 2017-2019 under the provisions of Article 17 of the Performance Regulation No 390/2013.
- 9.4.3 The PRB advises the European Commission that revision of the EU traffic forecast according to the findings developed in points 5.14.3 and 5.14.4. is not necessary.

Annex I. Review of 2014 Recommendations

Safety

Recommendation No1 (RP1 Annual Monitoring Report 2014, 8.5.18): The PRB advises the Commission to closely monitor safety management implementation levels in the early years of RP2, especially in light of the requirement to meet EoS targets by the end of 2019.

- Improvements are made in implementation of safety management at both the State (still to be verified by EASA) and ANSP level, thanks to the EASA’s audit mechanism and feedback.

Recommendation No2 (RP1 Annual Monitoring Report 2014, 8.5.19): The PRB advises the Commission to closely monitor the application of severity classification in the early years of RP2, especially in light of the requirement to meet severity classification targets by the end of 2019.

- Results of the application of RAT severity methodology in the first year of RP2 cannot be compared with RP1 due to changed scope (see above).

Recommendation No3 (RP1 Annual Monitoring Report 2014, 8.5.20): The PRB recommends that States improve the completeness of data reported to them via their national occurrence reporting schemes, such that the data reported to the Performance Scheme also improves.

- Due to reporting and data collection process timeline completeness of data could not have been assessed for this initial report. This analysis will be presented in the final PRB RP2 Monitoring Report 2015.

Recommendation No4 (RP1 Annual Monitoring Report 2014, 8.5.21): The PRB recommends that States devote the necessary investment to the effective implementation of the JC, especially in view of RP2 and necessary coordination at FAB level.

- Analysis of this point will be presented in the final PRB RP2 Monitoring Report 2015.

Environment

Recommendation No1 (RP1 Annual Monitoring Report 2014, 8.6.19): The PRB recommends that the Network Manager continues and expands those activities that have led to improvements in horizontal flight efficiency of the last filed flight plan.

- As described in the Annual Monitoring Report of the Network Manager submitted to the NMB, the activities to improve the horizontal flight efficiency of the last filed flight plan continued into 2015 but were insufficient, in light of the unstable political situation in the south-east of the network combined with capacity shortfalls due to strikes or special events, to achieve the 2015 target.

Recommendation No2 (RP1 Annual Monitoring Report 2014, 8.6.20): The PRB recommends that the EC requests the States to review the impact of allocating or activating individual restricted or segregated areas on either the available ATC capacity, or on the availability of route options within the relevant airspace.

- The PRB is not aware of any resulting action stemming from this recommendation.

Recommendation No3 (RP1 Annual Monitoring Report 2014, 8.6.21): The PRB recommends that the EC clarifies that the reporting requirement for the “effective use of civil military

airspace structures” performance indicator relates exclusively to all restricted or segregated areas, which the States have identified as having an impact on available ATC capacity, or on available route options within the relevant airspace.

- The PRB notes that the requested clarification has not yet been provided to the States.

Recommendation No4 (RP1 Annual Monitoring Report 2014, 8.6.22): The PRB recommends that the environment performance indicators described in Regulation (EU) No 390/2013, Annex 1, Section 1, paragraph 2.2 (a), (b) & (c) should be reviewed in terms of their relevance to the performance of air navigation providers and the impact on aircraft operations.

- The PRB is not aware of any resulting action stemming from this recommendation.

Recommendation No5 (RP1 Annual Monitoring Report 2014, 8.6.23): The PRB recommends that the Commission invites EDA to place focus on monitoring how the national / regional civil and military authorities actually manage the airspace to satisfy the requirements of both civil and military airspace users.

- The PRB understands that such an invitation was made to the EDA, verbally, at SSC 57 on 17/18 June 2015 but that the EDA stated that such activities were beyond their mandate.

En-route Capacity

Recommendation No1 (RP1 Annual Monitoring Report 2014, 8.7.22): The PRB recommends that the Commission requests the States to review en-route capacity performance, including planned capacity levels, implementing remedial action where necessary, to ensure that their respective ANSPs meet the Union-wide target of 0.5 minutes ATFM delay per flight.

- The PRB is not aware of any resulting action stemming from this recommendation.

Recommendation No2 (RP1 Annual Monitoring Report 2014, 8.7.24): The PRB recommends that the Commission takes cognisance of the Istanbul airports' impact on the SE Regional plans.

- The PRB is not aware of any resulting action stemming from this recommendation.

Recommendation No3 (RP1 Annual Monitoring Report 2014, 8.7.25): The PRB invites the Commission in association with the Network Manager, to pay careful attention to the traffic changes in the SE region, and its knock-on effect on the capacity planning of certain States.

- The PRB is not aware of any resulting action stemming from this invitation.

Recommendation No4 (RP1 Annual Monitoring Report 2014, 8.7.26): The PRB recommends that the Commission reminds States of their obligation to report on specific remedial actions being taken with their ANSPs to ensure that both local and Union-wide en-route capacity targets are achieved.

- The PRB is not aware of any resulting action stemming from this recommendation.

Recommendation No5 (RP1 Annual Monitoring Report 2014, 8.7.27): The PRB recommends that the Commission requests States to review their application of the FUA concept, in accordance with the governing principles of FUA as contained in Article 3 of Regulation (EC) No 2150/2005, with the aim of meeting the needs of all airspace users.

- The PRB is not aware of any resulting action stemming from this recommendation.

Airport Capacity

Recommendation No1 (RP1 Annual Monitoring Report 2014, 8.7.24): The PRB invites the Commission to note that the two Istanbul airports currently in operation (Istanbul Ataturk and Sabiha Gökçen) have a major impact on the SE Region, although Turkey is not subject to the provisions of the SES legislation. A new airport, to replace Istanbul Ataturk airport, is being built and it is scheduled to become operational in 2018. The PRB recommends that the Commission takes cognisance of the Istanbul airports' impact on the SE Regional plans.

- The significant traffic growth observed in Turkey is recognised by all stakeholders and – in particular – considered in the EU aviation policy. Adaptations of the respective plans for the SE Region are anticipated as part of the regular performance monitoring and update process. The latter gains more momentum with a view to the planned realisation of the new Istanbul Airport by 2018.

Recommendation No2 (RP1 Annual Monitoring Report 2014, 8.7.28): The PRB advises the Commission to request all the SES States to comply with the data provision specifications established by the EUROCONTROL's Performance Review Unit for RP2.

- Operational performance monitoring at and around airports is dependent on the timely availability of the required data. To support national authorities in ensuring the quality of reported data, the PRU has established a respective airport operator data specification. Furthermore, the data submission process entails now a data parsing stage that immediately assesses the level of compliance with the data specification.
- SES Member States are requested to ensure the timely transition of the RP1 airports to the new reporting scheme. Compliance with the data specifications will also ensure the consistency of reporting and the closure of pending actions plans concerning the data requirements under Annex V of IR390/2013 for all RP1 airports.

Cost-efficiency

Recommendation No1 (RP1 Annual Monitoring Report 2014, 8.8.39): The PRB recommends that States and ANSPs take careful note that, following the costs reductions achieved in RP1, the effort required to meet the RP2 targets is less than assumed when these targets were set. The PRB therefore expects that the RP2 targets will be fully met.

Recommendation No2 (RP1 Annual Monitoring Report 2014, 8.8.40): The PRB recommends that the Commission takes careful note of performance achieved in RP1 in considering changes to the Performance Scheme in future. RP1 can be judged a relative success, taking into account it was the first time there have been binding cost-efficiency targets with financial incentives.

Recommendation No3 (RP1 Annual Monitoring Report 2014, 8.8.41): The PRB recommends that the Commission reviews the financial achievements of RP1 along with the mechanisms of the performance scheme, as part of any wider-ranging review of RP1 that it might conduct. It should also consider future resourcing to include mechanisms to include facilities hitherto unused, as these are important requirements of the scheme. In particular, examples such as Article 20 Compliance monitoring provisions and Article 21 Data supervision are fully resourced to be used accordingly.

Annex II. PRU Technical Note on future liabilities resulting from the carry-overs of adjustments foreseen in the Charging Regulation

Route Charges billed to users for 2015 and future liabilities resulting from the carry-overs of adjustments foreseen in the Charging Regulation

The objective of this note is to:

- Reconcile the route charges billed to users in 2015 by the CRCO with the data from the PRB 2015 monitoring report based on the latest applicable Performance Plans;
- Identify the components of the 2015 unit rate basis (DCs, adjustments from previous years);
- Present the proportions of the 2015 route charges borne by the airspace users and borne by the States in respect of exempted IFR flights;
- Present the consolidation of the future net liabilities for users resulting from the adjustments foreseen in the Charging Regulation in relation to the en-route services provided up to 2015.

1. Reconciliation of the 2015 route charges billed to users

Table 1 below presents the reconciliation of the 2015 route charges billed to users by the CRCO (Report on the Operation of the Route Charges System in 2015, Table 15 on p. 18)³ and the amounts calculated on the basis of the final unit rate 2015 from the RP2 performance plans (as considered in the PRB 2015 Monitoring Report).

En-route charging zone	2015 route charges billed to users (CRCO) in MEUR	2015 route charges billed to users (revised PP) in MEUR	Difference (revision of the 2015 unit rate) in MEUR
Austria	200.3	200.3	
Belgium-Luxembourg	172.3	167.7	-4.7
Bulgaria	98.8	98.8	
Croatia	82.6	82.6	
Cyprus	56.4	56.4	
Czech Republic	109.3	109.3	-0.0
Denmark	99.5	99.5	
Finland	42.6	42.6	
France	1 309.9	1 297.5	-12.4
Germany	1 159.5	1 134.6	-24.9
Greece	183.9	183.9	
Hungary	96.7	96.7	
Ireland	122.7	122.6	
Italy	632.7	646.3	13.5
Latvia	22.0	22.0	
Lithuania	22.9	22.9	
Malta	17.8	17.8	
Netherlands	190.5	190.5	
Norway	110.4	110.4	
Poland	133.5	133.5	
Portugal	116.0	116.0	
Romania	168.3	168.3	
Slovakia	58.4	58.2	-0.3
Slovenia	31.8	31.8	
Spain Canarias	81.3	81.3	
Spain Continental	639.1	639.1	
Sweden	217.4	217.4	
Switzerland	161.1	161.1	
United Kingdom	1 004.3	1 004.3	
Total	7 342.1	7 313.2	-28.8

Table 1 – Reconciliation of 2015 amounts billed to users (MEUR) – excluding Estonia

³ Excluding Estonia, not yet technically integrated in the Multilateral Route Charges System in 2015.

The 2015 unit rates for the SES en-route charging zones are established on the basis of the 2015 determined costs and determined service units established for the cost-efficiency targets in the FAB performance plans for RP2 (2015-2019) and adjustments carried over from previous years, as defined in the Charging Regulation.

The unit rates billed by the CRCO from 1 January 2015 were based on the cost-efficiency targets from the RP2 performance plans adopted by the States in 2014. However, some of these targets had to be revised as a result of the RP2 PP assessment by the European Commission.

The revision of the targets led to the revision of the 2015 unit rates and their retroactive application from 1 January 2015 for six en-route charging zones. On the basis of Article 17(2) of the Charging Regulation, the difference in revenue due to the temporary application of the initial unit rate is to be charged / reimbursed through the unit rate of the following year, hence the difference identified in the last column of Table 1. This **difference** in revenue amounts to **28.8 MEUR** to be reimbursed to users through the 2016 and 2017 unit rates.

2. Components of the 2015 unit rate basis

Table 2 below presents, for each en-route charging zone, the components of the 2015 unit rate basis in national currency (i.e. the 2015 determined costs plus/minus the different adjustments carried-over to 2015 from previous years), which is presented per determined service unit in Volume 2 of the PRB 2015 Monitoring Report (cost-efficiency, item 7). Detailed data per charging zone is also provided at Annex 1. Figure 1 below shows the consolidation of this information at SES level (in EUR).

En-route charging zone	Curr.	2015 determined costs (RP2 PP)	Adjustments from previous years carried-over to 2015						Total adjustments	2015 unit rate basis	2015 unit rate basis vs. determined costs (%)
			inflation adjustment	Traffic Risk Sharing	Traffic adjustment	Financial incentives	Legacy	Other revenues			
Austria	EUR	188.2	2.5	2.7	4.1				9.3	197.5	4.9%
Belgium-Luxembourg	EUR	168.3	-0.2	0.8	1.9			-3.0	-0.5	167.8	-0.3%
Bulgaria	BGN	166.8	-8.0		-0.0				-8.1	158.7	-4.9%
Croatia	HRK	670.1					7.6	-58.9	-51.3	618.8	-7.7%
Cyprus	EUR	52.7	-1.1		-0.1				-1.2	51.5	-2.3%
Czech Republic	CZK	3 022.3	-8.6		4.7				-3.9	3 018.4	-0.1%
Denmark	DKK	726.9	0.7		6.3	-2.2			4.8	731.7	0.7%
Estonia	EUR	23.1	0.4	0.4	0.3			-0.1	1.0	24.1	4.3%
Finland	EUR	45.1	0.2	0.8	1.0		-0.1	-2.5	-0.5	44.6	-1.1%
France	EUR	1 290.6	0.7	6.7	4.0			-8.0	3.4	1 294.1	0.3%
Germany	EUR	1 069.1	2.0	39.7	18.5				60.2	1 129.3	5.6%
Greece	EUR	147.8	-0.9	12.6	2.8				14.6	162.4	9.9%
Hungary	HUF	28 133.1	181.3	82.5	49.7			-931.5	-618.0	27 515.1	-2.2%
Ireland	EUR	118.0	-0.1	0.3	0.2				0.4	118.4	0.3%
Italy	EUR	674.7	9.1		5.1				14.1	688.9	2.1%
Latvia	EUR	22.7	-0.4		-0.0			-0.2	-0.6	22.1	-2.5%
Lithuania	EUR	23.3	0.3		-0.0			-0.7	-0.3	23.0	-1.4%
Malta	EUR	17.7	-0.1	-2.8	-1.2				-4.1	13.6	-23.3%
Netherlands	EUR	184.9	3.1		0.8		-1.8	-0.3	1.9	186.8	1.0%
Norway	NOK	1 006.9	-7.1	-29.1	6.0				-30.1	976.8	-3.0%
Poland	PNL	658.6	-7.6		0.3		-23.5		-30.8	627.8	-4.7%
Portugal	EUR	111.3	2.2	1.1	0.3				3.6	114.9	3.2%
Romania	RON	690.5	-11.5		0.8		-18.2	-1.1	-30.0	660.5	-4.3%
Slovakia	EUR	59.3	0.2		-0.0		-0.1		0.0	59.3	0.0%
Slovenia	EUR	32.1	-0.2	1.0	0.1				0.8	32.9	2.6%
Spain Canarias	EUR	98.5	1.7		0.5			-11.3	-9.2	89.3	-9.3%
Spain Continental	EUR	620.4	10.6		2.9		12.5	-9.9	16.2	636.6	2.6%
Sweden	SKK	1 951.5	-105.6	10.3	11.4		124.3	-8.2	32.2	1 983.7	1.6%
Switzerland	CHF	158.2	-4.2	7.2	4.2		7.5		14.6	172.8	9.3%
United Kingdom	GBP	686.3	27.5	28.8	7.8	-1.0	0.8	-1.2	62.6	748.9	9.1%
Total	EUR	7 146.9	43.7	107.6	58.9	-1.6	23.1	-49.6	182.1	7 329.0	2.5%

Table 2 – Components of the 2015 en-route unit rates basis (in Million National Currency)

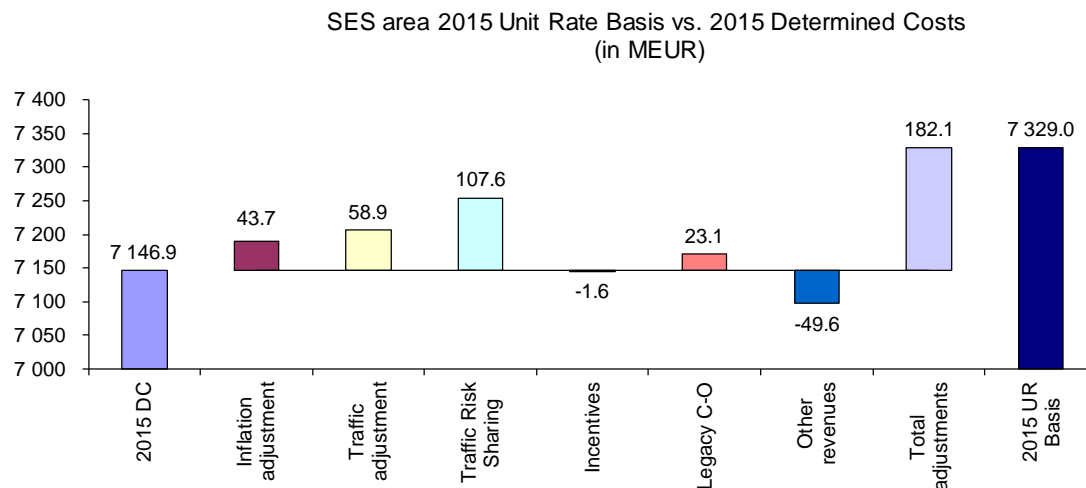


Figure 1 – Components of the 2015 en-route unit rate basis at SES area level (MEUR)

As a result of the adjustments carried-over to 2015, the overall 2015 en-route unit rate basis for the SES area is +2.5% higher than the determined costs set in the RP2 performance plans, when consolidated in EUR. The “Traffic Risk Sharing” and the “Traffic” adjustments are the largest factors explaining this difference and are due to globally lower actual traffic than planned in 2013, which is reflected in the 2015 unit rates.

3. Total route charges 2015 (chargeable and exempted)

The chargeable service units (service units for chargeable flights) are billed to airspace users, while the costs for the services provided in relation to the IFR exempted service units (service units for exempted flights) are covered by the State (Art. 10 4 (b) and 5 of the Charging Regulation).

Table 3 below presents the breakdown of the total actual 2015 service units for the SES en-route en-route charging zones. The exempted service units represented 1.1% of the actual total en-route service units in the SES area in 2015.

Total SES en-route charging zones	2015 actual total service units	2015 actual chargeable service units	2015 actual exempted service units
Service units (millions)	115.0	113.7	1.3
Service units (%)	100.0%	98.9%	1.1%

Table 3 – 2015 actual en-route service units (Millions)

Table 4 below presents the 2015 route charges borne by the airspace users (in respect of chargeable flights) and those borne by the States (in respect of exempted IFR flights):

- The route charges billed to airspace users for flights carried out in 2015 in the SES area amounted to €7338.6 M (including Estonia).
- The amounts borne by the States in respect of exempted IFR flights carried out in 2015 in the SES area totalled €80.0 M. The policy on exemptions applied in State, as well as the financing means to cover the related costs are described in the Additional Information on the unit rates provided by the States each year (Article 9.2, and specifically Annex VI 2(b) of the Charging Regulation).

En-route charging zone	2015 route charges billed to users (revised PP) in MEUR	in %	2015 route charges borne by the States in respect of exempted IFR flights in MEUR	in %	Total route charges 2015 in MEUR
Austria	200.3	99.5%	1.0	0.5%	201.2
Belgium-Luxembourg	167.7	99.2%	1.4	0.8%	169.0
Bulgaria	98.8	98.9%	1.1	1.1%	99.9
Croatia	82.6	99.7%	0.2	0.3%	82.8
Cyprus	56.4	98.3%	0.9	1.7%	57.3
Czech Republic	109.3	98.1%	2.1	1.9%	111.4
Denmark	99.5	99.3%	0.7	0.7%	100.2
Finland	42.6	99.5%	0.2	0.5%	42.8
France	1 297.5	99.0%	12.8	1.0%	1 310.3
Germany	1 134.6	99.5%	5.4	0.5%	1 140.0
Greece	183.9	97.5%	4.7	2.5%	188.5
Hungary	96.7	98.7%	1.2	1.3%	97.9
Ireland	122.6	98.7%	1.6	1.3%	124.3
Italy	646.3	98.1%	12.3	1.9%	658.6
Latvia	22.0	99.2%	0.2	0.8%	22.2
Lithuania	22.9	99.2%	0.2	0.8%	23.1
Malta	17.8	96.4%	0.7	3.6%	18.5
Netherlands	190.5	98.7%	2.4	1.3%	192.9
Norway	110.4	99.1%	1.0	0.9%	111.4
Poland	133.5	99.4%	0.9	0.6%	134.4
Portugal	116.0	98.9%	1.3	1.1%	117.3
Romania	168.3	99.0%	1.8	1.0%	170.0
Slovakia	58.2	98.5%	0.9	1.5%	59.0
Slovenia	31.8	99.5%	0.2	0.5%	31.9
Spain Canarias	81.3	99.1%	0.7	0.9%	82.0
Spain Continental	639.1	98.9%	6.9	1.1%	646.0
Sweden	217.4	99.5%	1.1	0.5%	218.5
Switzerland	161.1	99.7%	0.5	0.3%	161.6
United Kingdom	1 004.3	98.5%	15.8	1.5%	1 020.1
Estonia*	25.4	N/A	N/A	N/A	25.4
Total SES charging zones	7 338.6	98.9%	80.0	1.1%	7 418.6

Table 4 – total route charges 2015 billed to users and borne by the States (MEUR) – including Estonia

Note: 7 418.6 MEUR (Table 4) reflects the amounts ex-post based on actual traffic (globally higher than planned), while 7 329.0 reflects the amounts set ex-ante at the time of establishing the unit rates (see Table 2 above).

4. Future liabilities for airspace users / States

The different adjustments built in the Charging Regulation generate amounts to be charged or reimbursed through future years' unit rates, and in particular:

- inflation adjustment (to be carried over to N+2)
- traffic risk sharing adjustment (to be carried over to N+2 or beyond)
- traffic adjustment (to be carried over to the following year(s))
- costs exempt from cost-sharing (to be carried over in the following Reference Period(s))
- financial incentives (to be carried over to N+2)
- retroactive application of unit rate (see above)
- legacy from before RP1 (to be carried over up to end of RP2)
- deduction of other revenues

Table 5 below presents the consolidation of the future net liabilities for users resulting from these adjustments in relation to the en-route services provided up to 2015⁴. The breakdown per charging zone is provided in Table 6 below.

Carry-overs onto unit rates of:	in MEUR *	Main item(s) impacting the total adjustments
2016	87.1	charged, mainly adjustments relating to lower traffic than planned in 2014
2017	- 114.7	to be reimbursed, mainly as a result of the 2015 inflation adjustment;
2018	72.5	to be charged, mainly adjustments relating to lower traffic than planned in RP1 (largest amounts are for Spain and Italy).
2019	77.3	to be charged, mainly adjustments relating to lower traffic than planned in RP1 and 2015 (largest amounts are for Spain and Italy).
Beyond RP2	108.0	to be charged, mainly adjustments relating to lower traffic than planned in RP1 for Spain, and 2015 costs exempt from cost-sharing for Sweden.
Total future liabilities	230.1	

*at April 2016 average exchange rate

Table 5 – Consolidation of future net total liabilities resulting from adjustments incurred up to 2015 (MEUR)

En-route charging zone	2016	2017	2018	2019	After RP2
	MEUR	MEUR	MEUR	MEUR	MEUR
Austria	9.5	2.5	4.7	6.7	-5.2
Belgium-Luxembourg	-8.6	-3.1	-0.6	-0.6	-0.1
Bulgaria	-28.1	-19.7	-1.8	0.0	-0.8
Croatia	-6.3	-8.9	0.9	0.6	0.6
Cyprus	-5.7	-6.3	0.0	0.0	1.3
Czech Republic	-1.0	-1.6	0.2	0.2	-0.1
Denmark	-0.2	-2.8	1.1	0.8	0.0
Estonia	-0.2	-2.1	-0.4	-0.3	0.0
Finland	0.1	0.4	1.1	1.9	2.4
France	-1.4	-26.9	-9.9	-9.9	-4.2
Germany	38.8	-23.3	0.0	0.0	-8.0
Greece	4.3	-23.4	0.0	0.0	-5.7
Hungary	-11.0	-10.4	-4.1	-3.3	-1.4
Ireland	-1.3	-3.9	0.0	0.0	-0.2
Italy	16.4	24.6	43.9	37.7	6.1
Latvia	-0.6	-0.7	0.0	0.0	-0.1
Lithuania	-0.5	-1.0	-0.3	-0.3	0.1
Malta	-3.1	-4.2	0.0	0.0	0.0
Netherlands	5.2	1.5	0.0	-1.5	-12.1
Norway	-13.9	-0.1	0.0	0.0	0.7
Poland	-6.1	-1.8	-5.0	-4.7	0.1
Portugal	6.8	4.1	6.3	6.3	0.0
Romania	-7.9	-19.9	-0.2	-0.2	0.0
Slovakia	-2.7	-0.7	-0.5	-0.5	-0.4
Slovenia	-0.5	-0.6	0.0	0.0	-0.1
Spain Canarias	-9.6	-9.7	-8.8	-8.3	35.8
Spain Continental	18.5	24.3	28.8	34.5	49.5
Sweden	-6.6	-3.3	1.4	1.4	47.3
Switzerland	10.0	10.8	12.9	14.1	-0.4
United Kingdom	92.8	-8.8	2.8	2.8	2.7
Total	87.1	-114.7	72.5	77.3	108.0

* At April 2016 average exchange rate

Table 6 – Future net total liabilities resulting from adjustments incurred up to 2015 per charging zone (MEUR)

⁴ Note: Some amounts are still provisional and may be revised as a result of the EC scrutiny of the 2015 cost exempt and on the compliance of the 2017 unit rates with the Charging and Performance Regulations.

Annex III. References

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- i http://www.eurocontrol.int/prudata/dashboard/rp2_2015.html
- ii Commission Implementing Decision of 11 March 2014 setting the Union-wide performance targets for the air traffic management network and alert thresholds for the second reference period 2015-19. OJ L 71, 12.3.2014, p.20.
- iii University of Westminster calculations for “Network average cost of ATFM delay per minute” <http://www.eurocontrol.int/sites/default/files/publication/files/european-airline-delay-cost-reference-values-final-report-4-1.pdf>
- iv Network Manager’s Annual Reporting on NM Performance RP2 (NPP), July 2016
- v European Network Operations Plan 2016-2019/20, published in June 2016.
<http://www.eurocontrol.int/publications/european-network-operations-plan-2016-2020>
- vi Revised target as per Commission Implementing Decision (EU) 2016/599 of 15 April 2016.
- vii European Network Operations Plan 2014-2018/19. <https://www.eurocontrol.int/.../european-network-operations-plan-2014-2018-2019.pdf>
- viii Commission Implementing Regulation (EU) No 391/2013 of 3 May 2013 laying down a common charging scheme for air navigation services. OJ L 128, 9.5.2013, p31.
- ix For the purposes of this analysis, the main ATSPs’ actual costs are aggregated from the monitoring reports produced at CZ level. For a few ATSPs, the analysis at State level is adjusted to take into account reporting issues or special circumstances. These adjustments are systematically explained in Volume 2 of the PRB monitoring report.
- x In the context of this analysis the calculation of the revenues is the sum of the net ATSP gain/loss on en-route activity and the actual costs of the ATSP, as reflected in Figure 27.
- xi Figure 37 reflects a mix of different situations with some TCZs applying the traffic risk sharing arrangements while others do not. In addition, it should be noted that five TCZs (Cyprus and the four Belgian regional airports) are not included in Figure 37 since the provision of ANS in these TCZs is 100% financed by State funds.
- xii UK TCZs were excluded from this analysis in order to ensure consistency with Section 5.10.
- xiii Commission Implementing Decision (EU) 2016/1373 of 11 August 2016 approving the Network Performance Plan for the second reference period of the Single European Sky performance scheme (2015-2019) (Text with EEA relevance) OJ L 217, 12.8.2016, p. 51–52