Performance Review Body
designated by
the European Commission

EUROCONTROL

PRB Annual Monitoring Report 2014

Volume 1 - European overview and PRB recommendations

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Volume 1 - European overview and PRB recommendations

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1 Introduction

1.1 About this document

1.1.1 This Annual Monitoring Report 2014 was prepared by the Performance Review Body (PRB) of the Single European Sky (SES). It provides a summary of European Air Navigation Services (ANS) performance in four Key Performance Areas (KPAs: safety, environment, capacity and cost-efficiency) in 2014 as well as over the first Reference Period (RP1: 2012-2014). It refers to, and uses data from, the States subject to the provisions of the SES Performance Scheme (RP1 SES States).

1.1.2 This report highlights specific issues raised by the States, identifies corrective actions planned by States and makes recommendations to the Commission.

1.1.3 The PRB Annual Monitoring Report consists of four Volumes:

- Volume 1 includes four chapters addressing the four KPAs at Union-wide level as well as some key highlights at Performance Plan level. Chapter 7 looks at the situation concerning alert thresholds, both at Union-wide and local levels. Chapter 8 presents an overview of performance over RP1.

  This Volume also reviews progress made on the recommendations contained in last year's report and presents new recommendations.

  (i) For ease of reference, the 2013 recommendations have been included in the respective sections. They are complemented by observations for the year 2014.

  (ii) The recommendations resulting from this report together with their rationale can be found in Chapter 8.

- Volume 2 presents the summary/overview pages of performance for each RP1 Performance Plan.

- Volume 3 presenting a specific analysis of capital expenditure (CAPEX) for the main ATSPs across the Union and by FAB was delivered to the Commission and has not been published at the time of writing this report.

- Volume 4 contains a detailed Safety Review, produced jointly by the Performance Review Unit (PRU) and the European Aviation Safety Agency (EASA) Safety performance team.

1.1.4 Much of the data used in this report comes from the PRB online monitoring dashboard, published on EUROCONTROL's website. It provides harmonised ANS performance data for all 29 States subject to the SES Performance Scheme in RP1. The dashboard can be accessed via the PRB website or by clicking on this link[1].

1.2 The SES Performance Scheme

1.2.1 ANS performance targets are set under the SES Performance Scheme at both Union-wide and national/FAB levels. Union-wide targets have been set for three of these KPAs during RP1:

- The Union-wide **Environment** target is a reduction of -0.75% point of the route extension in 2014 compared with 2009 (Flight plan vs. great circle distance);

- The Union-wide **Capacity** target is set at 0.5 of a minute en-route ATFM delay per flight for 2014;

- The en-route Union-wide **Cost-efficiency** target, set for each year of the Reference Period, is the en-route determined unit rate expressed in $€_{2009}$ per service unit: €57.88 in 2012, €55.87 in 2013 and €53.92 in 2014.

1.2.2 Unless otherwise indicated, the PRB Annual Monitoring Report for 2014 refers to ANS performance in the airspace shown in Figure 1, which is the geographical scope of the Union-wide targets for RP1.

1.2.3 It covers the airspace controlled by the RP1 SES States in the ICAO EUR and AFI regions at the start of the reference period. Therefore, it covers the airspace controlled by the 27 EU Member States, the airspace controlled by Norway and Switzerland (29 States in total) in the ICAO EUR region, as well as the Canaries FIR (Spain), Bodø FIR (Norway) and NOTA/SOTA (UK/IRL).

1.2.4 Performance monitoring is an iterative process using data collected and made available on the PRB online monitoring dashboard[1] and the data provided in the monitoring reports submitted by the RP1 SES States, including the reporting tables for ANS charges.

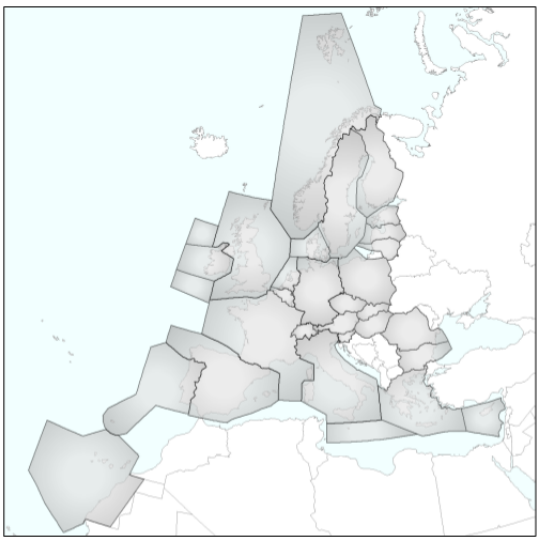


Figure 1: RP1 SES States

1.3 RP1 Key Performance Areas

1.3.1 Table 1 presents the Key Performance Areas (KPAs) and Performance Indicators (PIs) applicable for RP1 (2012-14) as set out in Regulation (EU) N° 691/2010. The three PIs with Union-wide targets in RP1 are referred to as the Key Performance Indicators (KPIs).

KPA	ANS PERFORMANCE INDICATOR	RP1
Safety	Effectiveness of Safety Management (EoSM)	Reporting
	Application of severity classification scheme (RAT methodology) • Separation Minima Infringements (SMI) • Runway Incursions (RI) • ATM-Specific occurrence (ATM-S)	Reporting
	Application of Just Culture (JC)	Reporting
Environment	Horizontal flight efficiency of last filed flight plan (KEP)	Union-wide target
	Utilisation of Conditional Routes	Reporting
	Effectiveness of booking procedures for FUA	Reporting
Capacity	En-route ATFM delay per flight	Union-wide target Nat/FAB targets
	Arrival ATFM delay	Reporting
	Additional time in taxi-out phase	Reporting
	Additional time in arriving sequencing and metering area (ASMA)	Reporting
Cost-efficiency	Determined Unit Rate (DUR) for en-route ANS	Union-wide target Nat/FAB targets

KPA	ANS PERFORMANCE INDICATOR	RP1
	Terminal costs	Reporting
	Terminal unit rate	Reporting

Table 1: KPAs and PIs in RP1

1.4 Air Traffic

1.4.1 In terms of average daily IFR flights, air traffic increased by +1.9% in 2014 after a two-year decrease, as shown in Figure 2. It was -6.4% below the highest level recorded in 2008.

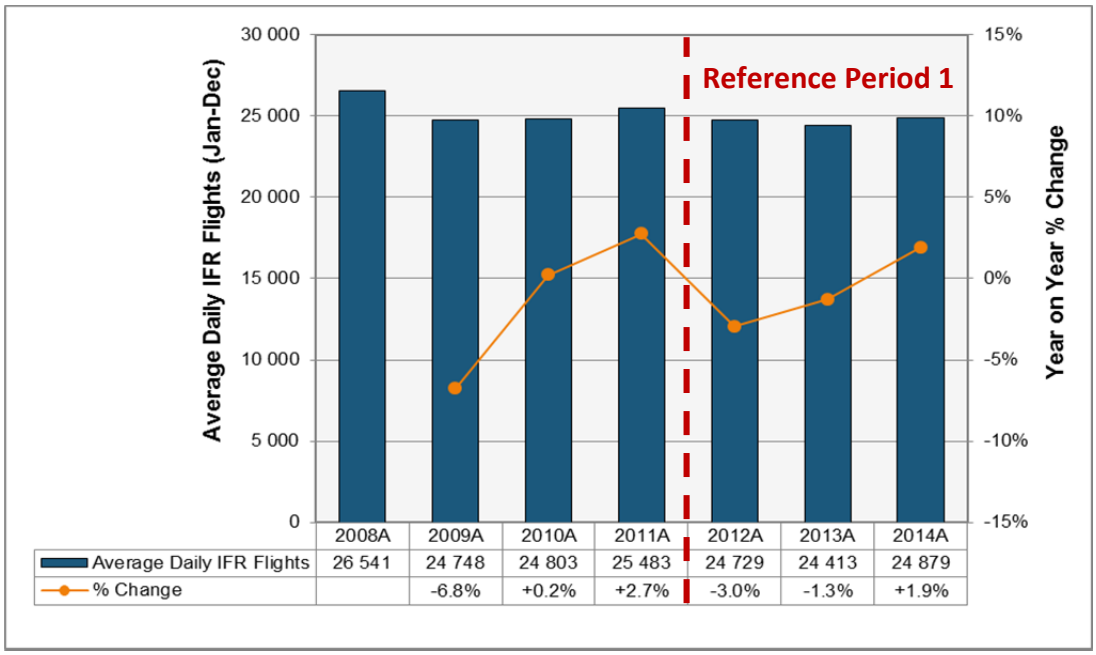


Figure 2: Traffic 2008-2014 (IFR flights)

1.4.2 It should be noted that these Union-wide averages mask considerable variations between States. For example, growth of IFR flights in 2014 vs. 2013 ranged from +24.1% in Bulgaria to -6.8% in Malta.

1.4.3 In terms of average daily en-route Service Units (SUs), the upward trend initiated in 2012 continued in 2014 with a +4.4% increase compared to 2013, as shown in Figure 3 below. This brings the 2014 SU traffic level to 109.8 million, which is +5.6% higher than in 2008 (104.3 million).

1.4.4 Higher growth in SUs (+4.4%) compared to IFR flights (+1.9%) can be explained by increases in both Maximum Take-Off Weight (MTOW) and average distance flown.

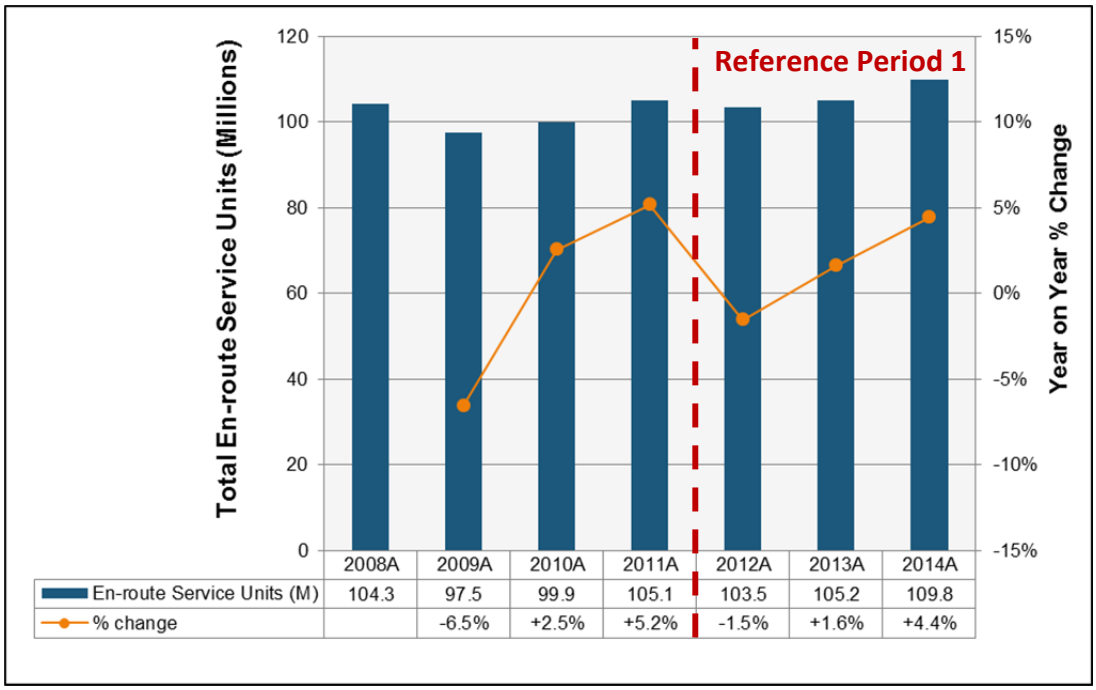


Figure 3: Total en-route service units 2008-2014

1.4.5 The volume of air traffic in 2014 was significantly impacted by the crises in Syria, Ukraine and Libya

1.5 Overview of Performance in 2014

1.5.1 **Safety**: in 2014, there were no fatal accidents with ANS contribution and a decreasing trend, initiated in 2010, in the number of reported serious incidents.

1.5.2 **Environment**: A significant improvement in horizontal route extension achieved in 2014 brought the Key Performance Indicator (KPI) down to 4.90%, as shown in Figure 4. This was not sufficient however to meet the target set for 2014: 4.67% (a 0.75% reduction compared to the 2009 baseline).

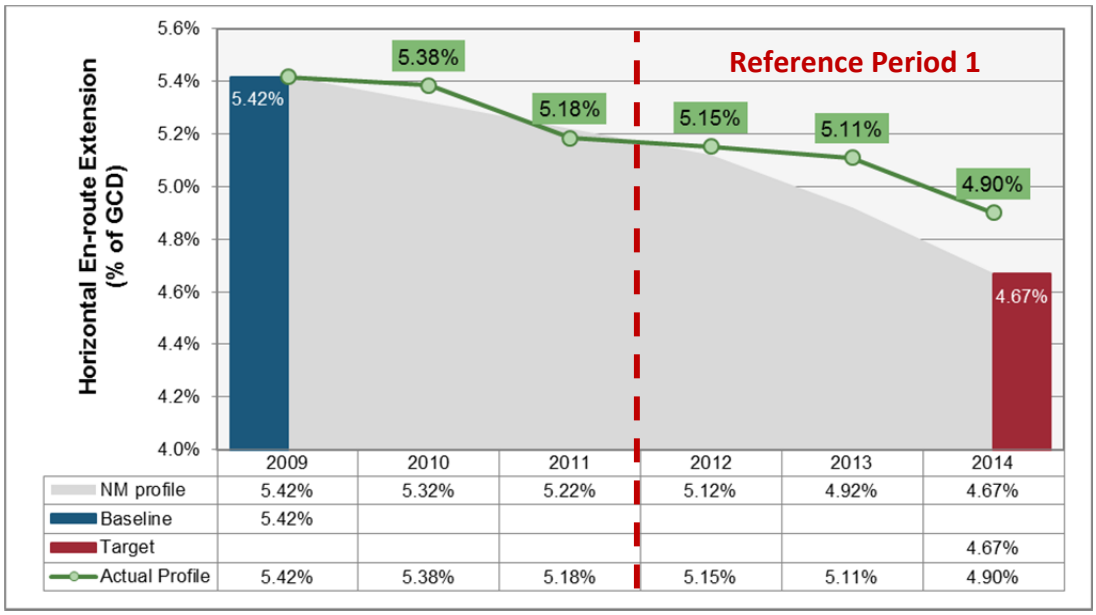
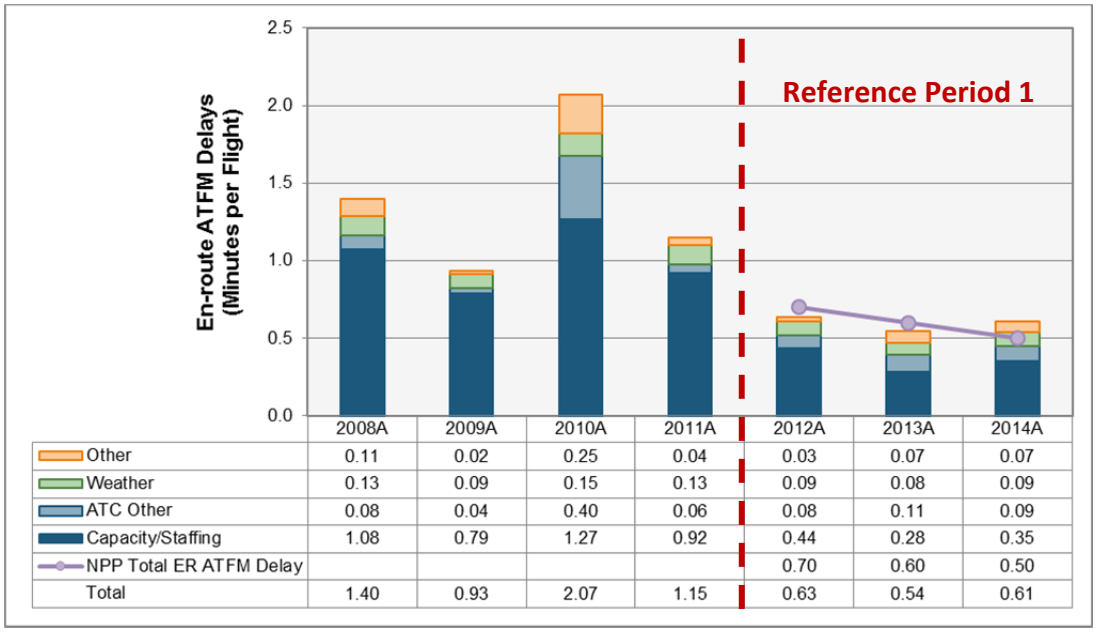


Figure 4: Target and achieved performance in flight efficiency

1.5.3 **Capacity**: In 2014, en-route ATFM delays increased by 15% compared with 2013, while IFR flights increased +1.9%. The Union-wide Capacity KPI for 2014 was 0.61 minutes ATFM delay per flight, which does not meet the target set for 2014: 0.50 minute/flight. This was however well below the levels recorded before RP1 as shown in Figure 5. En-route ATFM delays were concentrated in Cyprus, France, Greece, Poland and Portugal.



	2008A	2009A	2010A	2011A	2012A	2013A	2014A
Other	0.11	0.02	0.25	0.04	0.03	0.07	0.07
Weather	0.13	0.09	0.15	0.13	0.09	0.08	0.09
ATC Other	0.08	0.04	0.40	0.06	0.08	0.11	0.09
Capacity/Staffing	1.08	0.79	1.27	0.92	0.44	0.28	0.35
NPP Total ER ATFM Delay					0.70	0.60	0.50
Total	1.40	0.93	2.07	1.15	0.63	0.54	0.61

Figure 5: Target (2014) and achieved performance in en-route ATFM delays

Regarding arrival ATFM delay, Zurich (ZRH) is the only airport with an average above two minutes, while Amsterdam (AMS) and London Heathrow (LHR) are close to this threshold. The European overall average arrival ATFM delay decreased by -19%. Weather conditions remain the major cause of arrival ATFM delay, accounting for 69% in 2014.

The European average of additional taxi-out time decreased slightly to 3.0 min./dep.

Additional ASMA time showed little variation across all reporting airports in 2014 with a European average of 1.9 min./arrival.

1.5.4 **Cost-efficiency:** 2014 was the third year of the "Determined Costs" method with specific risk-sharing arrangements aimed at incentivising ANSPs' economic performance. While SUs were higher than in 2013, they were -4.5% lower than planned. In response, States/ANSPs reduced their planned costs by -5.7%. As a result, the actual Union-wide unit cost in 2014 was €54.13, which is lower than the target of €54.84 from the adopted NPPs although higher than the Union-wide target of €53.92. It is also significantly below the baseline assumption of €58.09 (RP2 baseline includes Croatia which was excluded from RP1) used in setting the RP2 targets.

No specific targets were set for TANS (terminal air navigation services) costs and unit rates in RP1. However, actual Union-wide TANS costs in 2014 were -8.6% lower than planned, which is a greater reduction in percentage terms than the reduction in en-route costs. Overall gate-to-gate costs were -6.2% lower than planned.

2 Safety

2.1 Presentation

2.1.1 Although there are no Union-wide safety targets, the States are required to report on a number of Safety Performance Indicators (SPIs) in RP1. These are described in Annex I of Regulation 390/2013[4] and shown in Table 2.

SAFETY	
Effectiveness of Safety Management (EoSM) of Member States and their air navigation service providers.	Reporting
Application of the severity classification based on the Risk Analysis Tool (RAT) methodology to the reporting of, as a minimum, • Separation Minima Infringements (SMI); • Runway Incursions (RI); and • ATM-specific occurrences (ATM-S) at all Air Traffic Service Units.	Reporting
Reporting by Member States and their air navigation providers on the level of presence and corresponding level of absence of Just Culture (JC).	Reporting

Table 2: Safety Performance Indicators for RP1

2.1.2 The Safety Review presented below summarises Volume 4 of this report. It was produced by the PRU/EASA Safety team and contains consolidated observations made during a review of the National/FAB Monitoring Reports and measurements of SPIs for the third year of RP1 of the Performance Scheme.

2.2 ANS-related accidents and serious incidents

2.2.1 Figure 26 shows the number of ANS-related accidents and serious incidents involving commercial air transport (CAT) aircraft above 2,250 kg maximum take-off mass (MTOM), alongside a rate calculated using the number of flight hours performed.

2.2.2 The review of ANS-related accidents and incidents is based on:

- accidents and serious incidents from the EASA database (2005 - 2014);
- incident data reported to EUROCONTROL via the Annual Summary Template (AST) reporting mechanism (2005 – 2014, 2014 preliminary).

2.2.3 In the ten year period analysed, there were two (2) fatal accidents that were ANS-related, one in 2005 and the other in 2006. In neither case was ANS considered to be a direct causal factor.

2.2.4 The Figure 6 shows the number of accidents and serious incidents per year that involved ANS, alongside a rate calculated using the number of flight hours performed. In the six year period analysed, there were no fatal accidents that were ANS-related. The figure shows an overall decreasing trend in the number of serious incidents since 2010, whereas the number of accidents has remained static. The lower rate and number of serious incidents in 2009 is also reflected in historical data for 2008 and appears to be related to the downturn in traffic over the two year period. Overall, historical movement data and serious incident data from EASA indicate that in a ten year period, both the number and rate of serious incidents has reduced. A reversal in the decreasing trend of serious incidents is shown in 2014 and in the overall accident and serious incident rate, per million flight hours. This reversal is also reflected in other measures of aviation system safety, such as the global fatality rate for CAT Aeroplanes, or the European CAT accident rate[2].

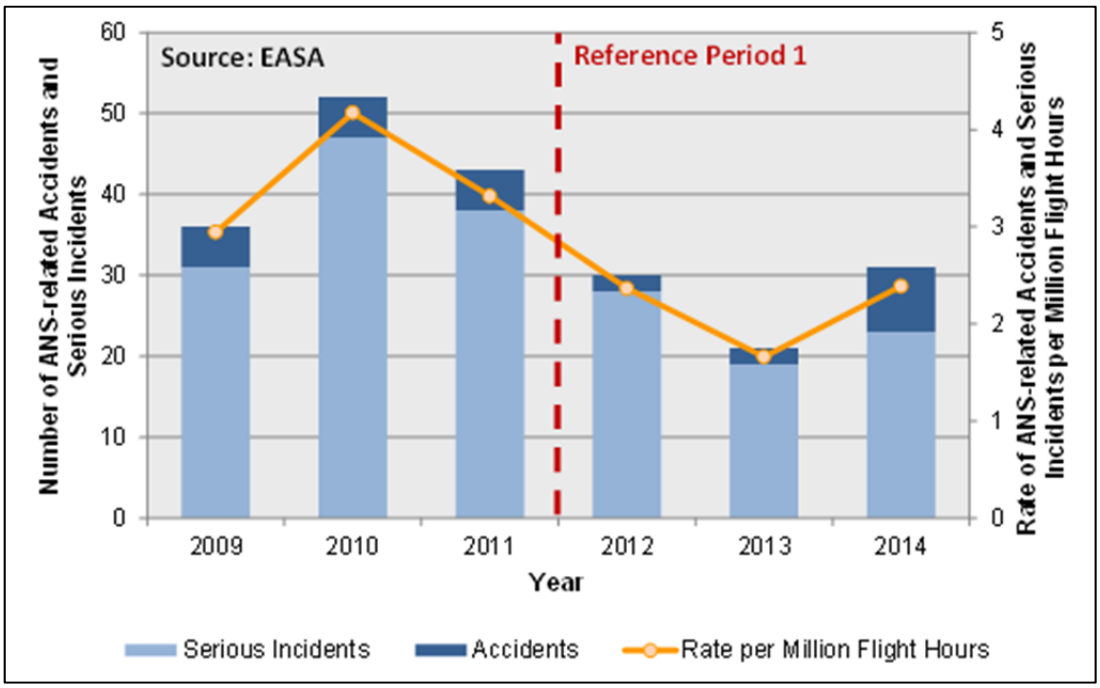


Figure 6: ANS-related accidents and serious incidents (2009-2014)

2.2.5 Serious incidents are often a better measure of the performance of the ANS system, as they relate more closely to ANS itself and are more severe in their nature. As a whole, the RP1 period has shown a better level of ANS safety performance compared with the previous seven years. However, there has not been a measurable improvement (nor degradation) within the reference period itself.

2.2.6 Analysis of occurrences with only an ANS-contribution (Figure 7) show that the rate of ANS-contribution accidents and serious incidents has significantly decreased since 2010 and also decreased consistently during the whole RP1. Historical movement data indicate that there was a reduction in traffic during 2008-2009. The corresponding dip in 2009, as shown in Figure 7, suggests that the rate is not directly related to the number of flight hours. Earlier data had higher accident and serious incident rates and imply that overall, safety has improved over the past ten years. Therefore, it could be concluded that the ANS sector has improved at managing risks that directly relate to the service provided.

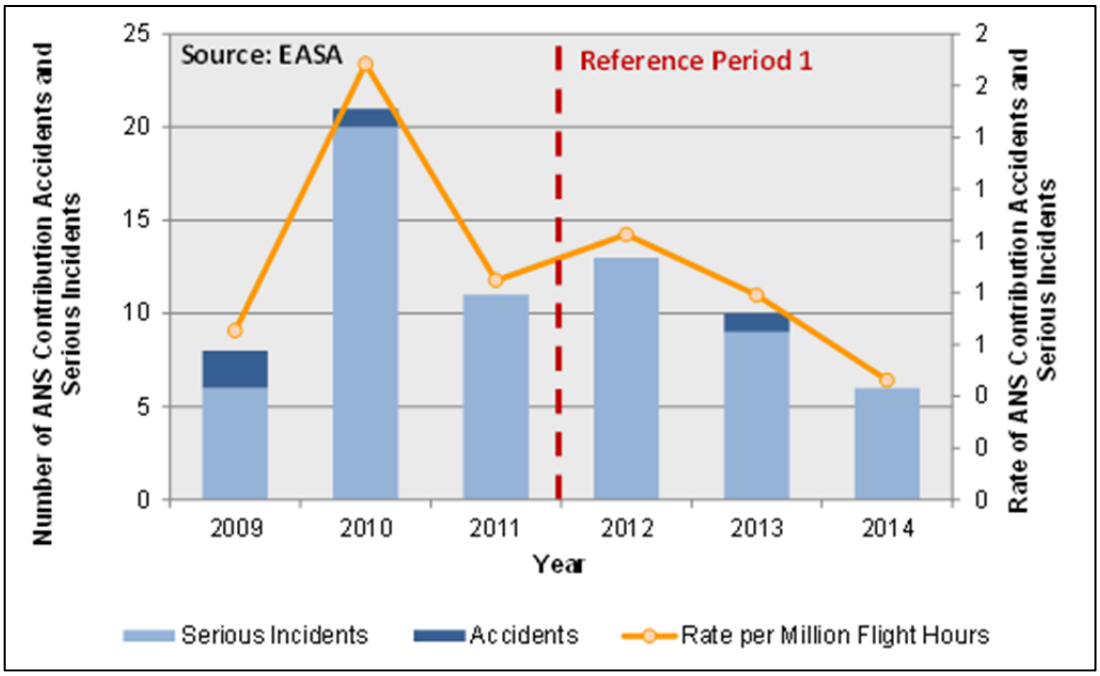


Figure 7: ANS contribution accidents and serious incidents (2009-2014)

2.3 Effectiveness of Safety Management

2.3.1 This section gives an overview of the responses to the questionnaires used for the measurement of the EoSM (provided by the States and service providers).

2.3.2 All 29 States and 37 (out of 38) ANSPs filled in the self-assessment questionnaires used for the measurement of the EoSM SPI in accordance with Acceptable Means of Compliance (AMC) and Guidance Material (GM) for the Implementation and Measurement of Safety Key Performance Indicators (EASA Decision 2011/017R). In accordance with the AMC, the responses of 28 States (out of 29) have been verified by EASA while the responses of the ANSPs have been verified by the State Competent authorities.

Note: Submission of the Italy EoSM questionnaire was made several months after the official closing date for submission of the results and after the verification and processing of all other data had been completed. As a consequence, the 2014 Italy EoSM State results could not be verified during the 2014 review cycle. Note that EoSM self-score for Italy is however available on the PRB Dashboard.

2.3.3 EASA examined the States' responses using two methods "thorough verification" (TV) or "light verification" (LV)). More details about EASA's method of verification can be found in Volume 4 of this report. Volume 4 also provides further analysis of the EoSM Scores provided by the States and ANSPs. In addition, results of this verification exercise at State level can be found in Volume 2.

2.3.4 The EoSM results achieved by individual States and their ANSPs in 2014, according to their own perception (before EASA's verification), are presented in Figure 8 and Figure 9. It is worth highlighting that a direct comparison of the results for 2014 with those of previous years should be taken with caution due to the necessary revision of EoSM questionnaires in view of RP2 (small revisions of questionnaires in light of RP2). More details about these changes can be found in Volume 4 of this report.

2.3.5 The minimum effectiveness Score, by the individual States in 2014, is 42 with five States scoring below 50. This is an improvement when compared to the 2013 scores. The maximum effectiveness score at State level in 2014 is 86.

2.3.6 The minimum effectiveness Score, by the individual ANSPs in 2013, is 44 with only

one (1) ANSP scoring below 50. The maximum effectiveness score at ANSP in 2014 is 92.

Note: One ANSP has not reported figures for 2014, i.e. NAV Portugal (Portugal).

2.3.7 The outcome of the 2014 exercise shows continuous improvement in the implementation of safety management at both State and ANSP levels.

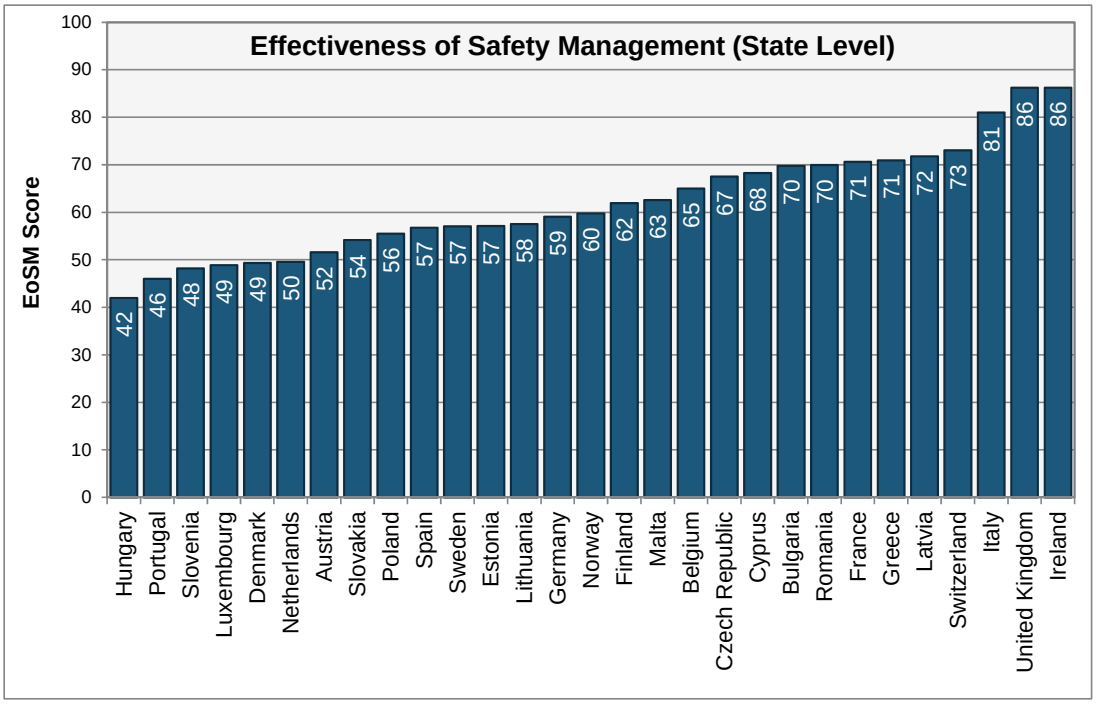


Figure 8: EoSM scores of individual States (self-assessment)

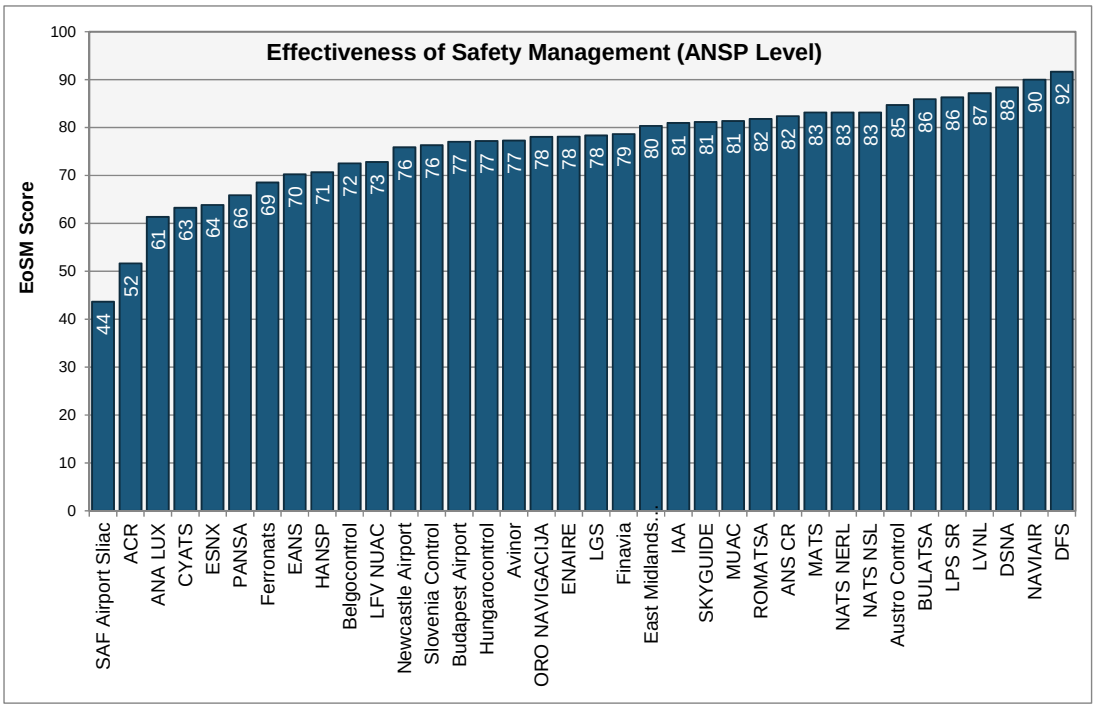


Figure 9: EoSM scores of individual ANSPs

2.3.8 Based on information provided during the 2014 monitoring exercise and the introduction of the second metric for EoSM (EoSM Maturity Level) it is possible to give an overview of achievements in implementation of safety management, both at State and ANSP levels, in view of RP2 safety targets set for 2019.

Note: The results of EoSM in RP2 will be measured both in terms of EoSM Maturity Score and in terms of Maturity Level. The Overall Score gives a high level overview of the organisation's SMS and it shows whether overall the State or service provider are mostly managing performance or it is still in the process of implementing the mandatory regulations and achieving the minimum standards of maturity. However, as this score may hide particular problems in certain areas as the methodology averages the scores by each of five EoSM safety Components (introducing a smoothing effect) and in order to identify whether the State or service provider still has a significant problem in at least one area (i.e. safety Component) the Maturity Level view is more appropriate.

2.3.9 RP2 EoSM FAB results are calculated using EoSM minimum/lowest level achieved principle (lowest level achieved of each Component, both at the State and ANSP level, is calculated as the lowest level of all questions within that Component; similarly this principle is then also applied at FAB level – as the RP2 Union-wide targets for safety are set at FAB level). By applying the 'lowest level achieved' principle in scoring at FAB level it is expected to encourage the States and the ANSPs with lower score to achieve the higher scores within the FAB in order not to reduce the overall FAB score.

2.3.10 The following two tables show the current results of achieved FAB EoSM minimum/lowest levels for all States (based on self-assessment) and their ANSPs.

EoSM State level *(FAB EoSM minimum level achieved)*		**Safety Policy**	**Risk Management**	**Safety Assurance**	**Safety Promotion**	**Safety Culture**
2019 RP2 Targets		***C***	***C***	***C***	***C***	***C***
2014 Results	Baltic FAB	B	B	B	B	B
	Blue Med FAB	A	C	B	B	B
	DANUBE FAB	B	B	C	B	B
	DK-SE FAB	B	B	B	A	A
	FAB CE	A	B	A	A	A
	FABEC	A	A	A	A	B
	NEFAB	B	B	B	B	B
	SW FAB	A	A	B	A	B
	UK-IR FAB	C	C	D	C	B

Table 3: EoSM State level (end of RP1 vs RP2 targets)

EoSM ANSP level *(FAB EoSM minimum level achieved)*		Safety Policy	Risk Management	Safety Assurance	Safety Promotion	Safety Culture
2019 RP2 Targets		***D***	***D***	***D***	***D***	***C***
2014 Results	Baltic FAB	C	D	C	C	C
	Blue Med FAB	C	D	C	C	C
	DANUBE FAB	D	D	C	C	C
	DK-SE FAB*	D	C	D	C	D
	FAB CE*	C	D	C	C	C
	FABEC	B	D	C	C	C
	NEFAB	C	C	C	C	C
	SW FAB**	C	D	C	C	C
	UK-IR FAB*	D	D	D	C	D

Table 4: EoSM ANSP level (end of RP1 vs RP2 targets)

* calculated including only ANSPs that are within the scope of RP2 – as indicated in the FAB RP2 Performance Plans (more information provided in Volume 4)

** to be taken with caution as NAV Portugal did not provide results for 2014 and new ANSP within RP2 (Ferronats) was not monitored in RP1, hence results are not available.

2.3.11 For a full report on the EoSM results, please refer to Volume 4 of this report.

2.4 Application of RAT methodology

2.4.1 States have reported the proportion of Separation Minima Infringements (SMIs), Runway Incursions (RIs) and ATM-specific occurrences (ATM-S) for which the severity of the occurrence is assessed using the severity classification based on the RAT methodology. Figure 10 presents EU averages for each SMI, RI and ATM-S (data submitted and updated at the end of April 2015). The verification of the application of the RAT methodology was done following the Annual Summary Template's (AST) safety data reporting system, with the exception of one State that used a different channel to report the RAT methodology application.

2.4.2 Further details about the verification method can be found in Volume 4 of this report.

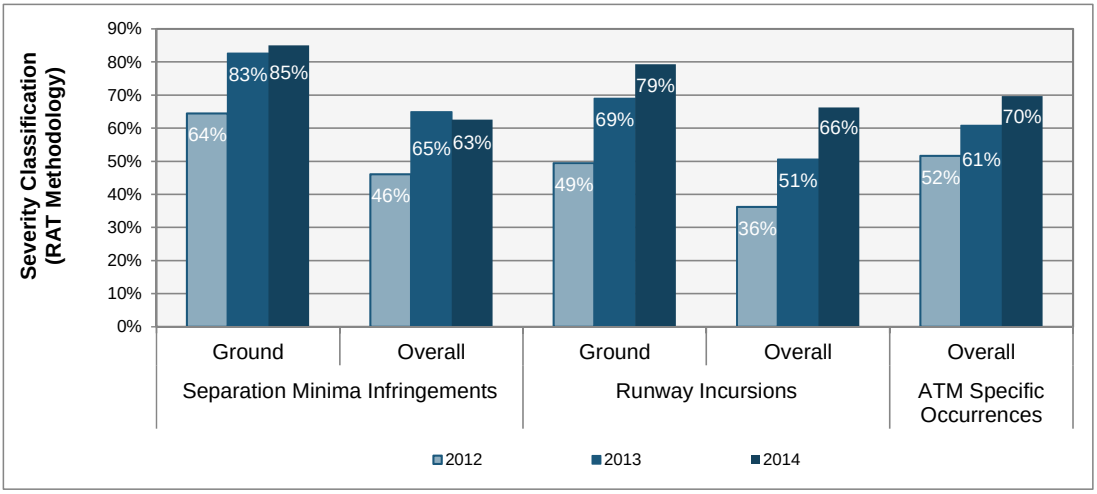


Figure 10: EU averages for severity assessment using the RAT methodology

Note: Percentages for 2012 and 2013 (where applicable) have been updated since

to take into account the final 2013 RAT methodology application data, which was received through the AST reporting mechanism at the end of September 2014.

2.4.3 The EU averages for the application of RAT severity methodology for RIs and ATM-S show overall improvement in the final year of RP1. On the other hand, severity classification of SMIs shows a slight drop in 2014. Overall, all three occurrence types are severity classified in approximately 60% of the cases on a State level (ATM Overall).

2.4.4 Summary information about the three types of occurrences (SMIs, RIs and ATM-S), for which the severity of the occurrence should be assessed using the RAT severity classification, is provided in the following paragraphs.

2.4.5 Preliminary 2014 data (Figure 11) show a small decrease of risk-bearing SMIs, in absolute numbers, compared with 2013 (approximately 5%):

- Serious incidents (severity class A) decreased in absolute numbers from 30 to 19.
- Major incidents (severity class B) decreased in absolute numbers from 229 to 227.

2.4.6 The total number of SMIs reported across all severity categories increased by 5% in 2014. Approximately 8.5% of the reported SMI incidents are still under investigation.

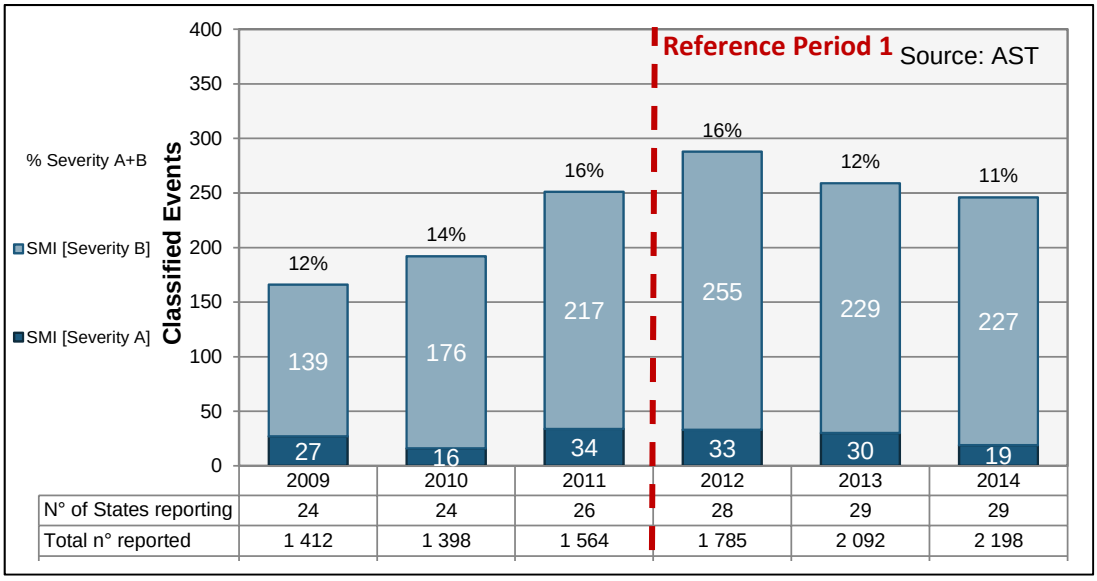


Figure 11: Reported SMIs in States (2009-2014P)

2.4.7 Preliminary 2014 data (Figure 12) shows an increase of risk-bearing RIs compared with 2013 (approx. 23%):

- Serious incidents (severity class A) increased in absolute numbers from 14 to 23.
- Major incidents (severity class B) increased in absolute numbers from 60 to 68.

2.4.8 The total number of RIs reported across all severity categories shows almost no change compared with the previous year (approx. 0.2%). Approximately 8.5% of the RIs reported in 2014 are still under investigation.

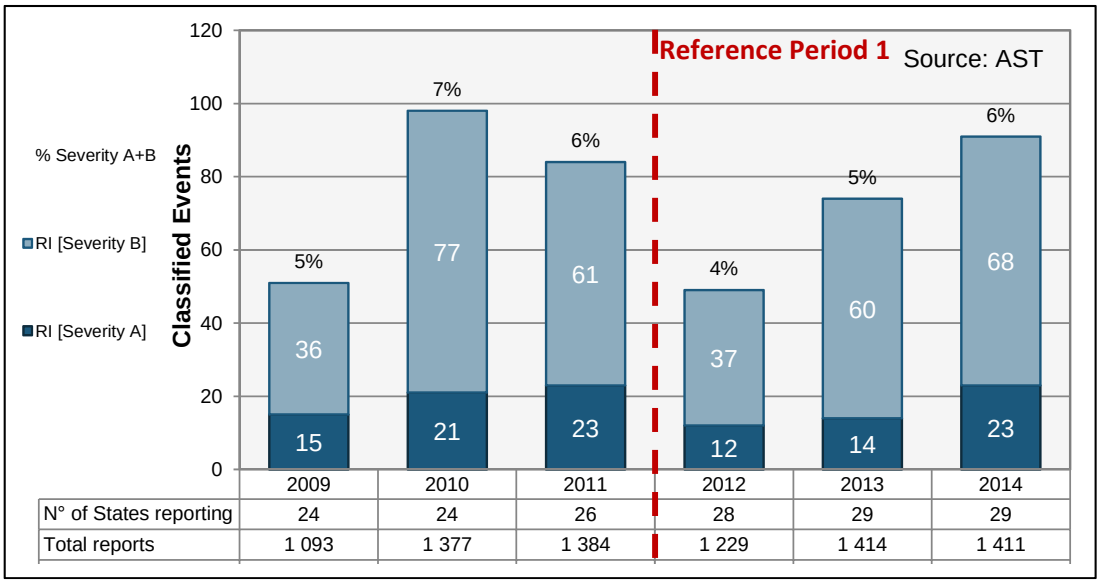


Figure 12: Reported RIs in States (2009-2014P)

2.4.9 ATM-S include those situations where the ability to provide safe ATM services is affected by the event reported. ATM-S occurrences typically include failure of ATM/CNS technical systems which could potentially have an impact on the safety of air navigation.

2.4.10 The total number of ATM-S occurrences reported across all severity categories decreased by approximately 18% in 2014.

2.4.11 In addition, preliminary 2014 data (Figure 13) shows an overall decrease of risk-bearing ATM-S occurrences compared with 2013 (approx. 11%). The number of occurrences that had a serious impact on the ANSPs' ability to supply ATM services has decreased in 2014 compared with the previous year as follows:

- Severity class AA (total inability to provide ATM Services) decreased from 21 to 20;
- Severity class A (serious inability to provide ATM Services) decreased from 90 to 87;
- Severity class B (partial inability to provide ATM Services) decreased from 390 to 343.

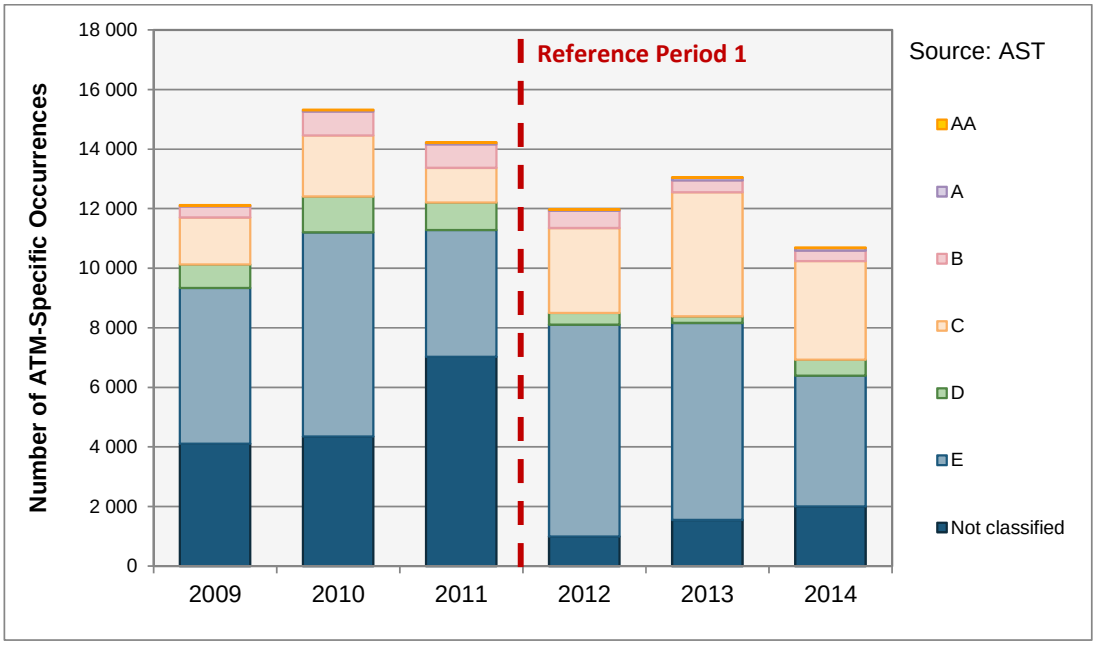


Figure 13: Reported ATM Specific Occurrences in States (2009-2014P)

2.4.12 Based on 2014 preliminary data, the number of severity not classified or severity not determined (category D) for the above categories of occurrences has overall decreased by almost 25% compared with the previous year's data (for more details see Volume 4 of this report).

2.4.13 The numbers of severity not classified or not determined have decreased for all three types of occurrences. For SMIs and RIs, an improvement in severity classification is almost 40% and 60% respectively compared to 2013. This improvement may have been achieved as a result of the new targeted requirements for the Safety KPIs in the Performance Scheme and increased support activities for States provided by DPS/SSR.

2.4.14 As for the completeness of data received through the AST mechanism, it can be observed that the ATM Occurrences contribution data is left blank in over 20% of the reported incidents. In addition, data related to the aircraft involved is not available for roughly 50% operational occurrences (more information available in Volume 4 of this report). In consequence, this lack of completeness diminishes still further the safety analysis capability at European level.

2.5 Just Culture

2.5.1 Just Culture is assessed by the responses given to the self-assessment questionnaires on Just Culture for both States and ANSPs in the three areas: 'Policy and its implementation'; 'Legal & Judiciary'; and 'Occurrence reporting and investigation'.

2.5.2 Under each area, the questions vary for the State and for the ANSP. The aim of review was to identify certain tendencies and approaches in place in the context of measuring the presence and corresponding level of absence of Just Culture.

2.5.3 All 29 States and 37 (out of 38) ANSPs filled in the self-assessment questionnaires used for the measurement of the JC SPI in accordance with EASA AMC/GM for the Implementation and Measurement of Safety Key Performance Indicators.

Note: Submission of Italy's Just Culture questionnaire was made several months after the official closing date. As a consequence, the 2014 JC State results could not be verified by EASA. Note that self-perceived JC Score for Italy (State level) are however available on the PRB Dashboard and Volume 2 of this report. In addition,

one ANSP has not submitted its response for 2014, i.e. NAV Portugal (Portugal).

2.5.4 Volume 4 of this report explains the methodology for EASA's verification of the responses and gives a detailed analysis of Just Culture implementation levels per FAB, in order to identify the JC elements, which are already in place (see Volume 4, section 2.3). It has to be noted that late assessment is solely based on the information provided by the States and ANSPs in their responses to the questionnaires and has not been verified by an on-site inspection.

2.6 Review of 2013 Recommendations on safety[3]

2.6.1 Recommendation made in 2013: *"States were requested to invest additional effort in the final year of RP1 to achieve higher levels of safety management".* The EoSM results have shown rather small improvements. In addition, States' implementation levels of safety management principles are still below that of ANSPs.

2.6.2 *"States were asked to make further efforts to enhance their reporting and application of the RAT methodology by seeking, planning and providing training for this matter"***.** There have been relatively small improvements in the application of RAT severity methodology.

2.6.3 *"States were requested to improve the completeness of safety data reported via the AST mechanism"* Continuous lack of completeness of AST data still diminishes the capability of improved safety analysis at European level.

2.6.4 *"States were requested to make the investment necessary for the effective implementation of the JC policy and to make every possible effort to encourage the conclusion of the necessary arrangements in order to have cooperation between the relevant actors involved in safety investigation"***.** The PRB notes that the reports have shown some improvements in the reporting of the level of JC.

2.7 2014 observations for safety

2.7.1 In 2014, there were no fatal accidents with ANS-contribution and a decreasing trend, initiated in 2010, in the number of reported serious incidents continued.

2.7.2 Submission of safety performance results by several States and ANSPs in this year was made several weeks and even months after the official closing date for submission of the results. As a consequence verification, processing and analysis of data were either rather delayed or in some cases even not possible.

2.7.3 The lack of completeness of data received through AST mechanism, continues to be a concern. Consequently, this lack of completeness of various safety information diminishes the capability of safety analysis at European level.

2.7.4 The PRB acknowledges the improvements made in safety management. The verified results of the EoSM questionnaires for States still show that their implementation of safety management principles is below that of ANSPs.

2.7.5 There have been relatively small improvements in the application of RAT severity methodology. States are encouraged to continue additional efforts to enable further enhancements in the reporting and application of severity classification using the RAT methodology by seeking, planning and applying training on this matter. States requiring support in applying severity classification using the RAT methodology should contact EUROCONTROL DPS/SSR.

2.7.6 With regards to the reporting by States and their ANSPs the level of presence and corresponding level of absence of JC, the PRB notes that the reports have shown some improvements in the reporting of the level of JC.

2.7.7 Recommendation based on the observations and overall RP1 recommendations can be found in Section 8.5 of this report.

3 Environment

3.1 Presentation

3.1.1 The Performance Indicators for the Environment KPA in RP1 are listed in Table 5. While the 'average horizontal en-route flight efficiency of the last filed flight plan trajectory' is a KPI with a target, the Commission is required to monitor and report against the effective use of civil military airspace structures in RP1.

ENVIRONMENT	
Horizontal flight efficiency of last filed flight plan (KEP)	Union-wide target
Utilisation of Conditional Routes	Reporting
Effectiveness of booking procedures for FUA	Reporting

Table 5: Environment Indicators for RP1

3.2 Flight Efficiency

3.2.1 A flight efficiency target of 4.67% (measured as the flight extension as a proportion of the great circle distance) has been established for 2014; this represents a -0.75% point reduction compared to the 2009 baseline.

3.2.2 The Route Network Design function and the ATFM function carried out by the Network Manager (NM) directly support the achievement of this flight efficiency target.

3.2.3 Figure 14 shows the recorded horizontal flight efficiency figures for the period 2009-2014. The average horizontal en-route flight efficiency of the last filed flight plan trajectory for 2014 is equal to 4.90%. This corresponds to a major improvement over the 2013 value, but is not enough to meet the target of 4.67% in 2014.

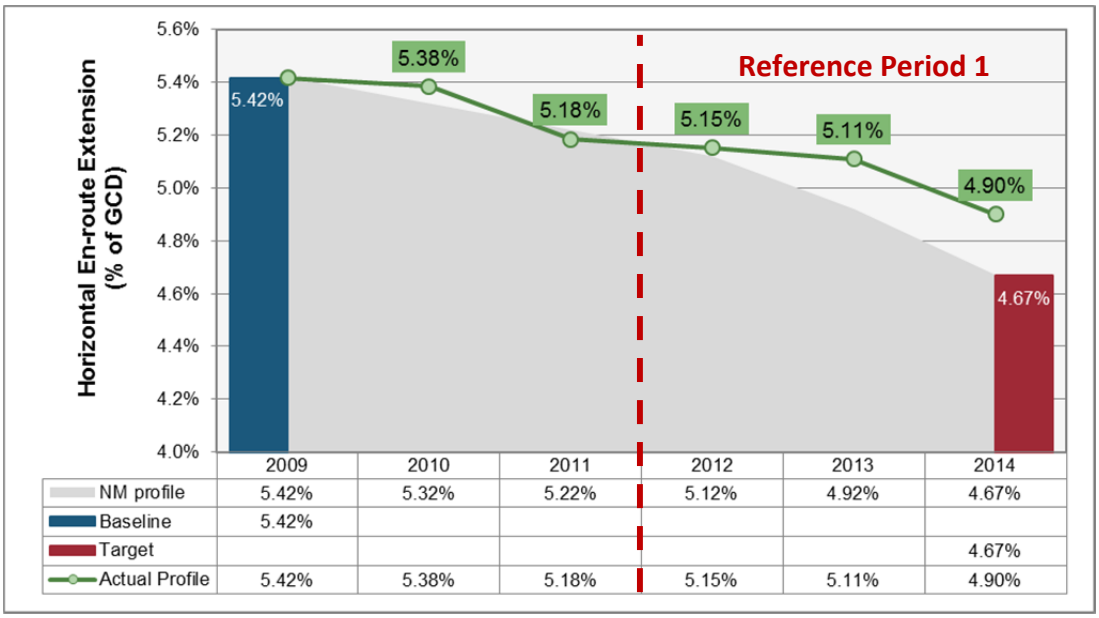


Figure 14: Target and achieved performance in flight efficiency

3.2.4 The comparison of the monthly values over the period 2012-2014 (Figure 15) shows a consistent improvement – in every month the recorded value in 2014 is the best over the three years considered.

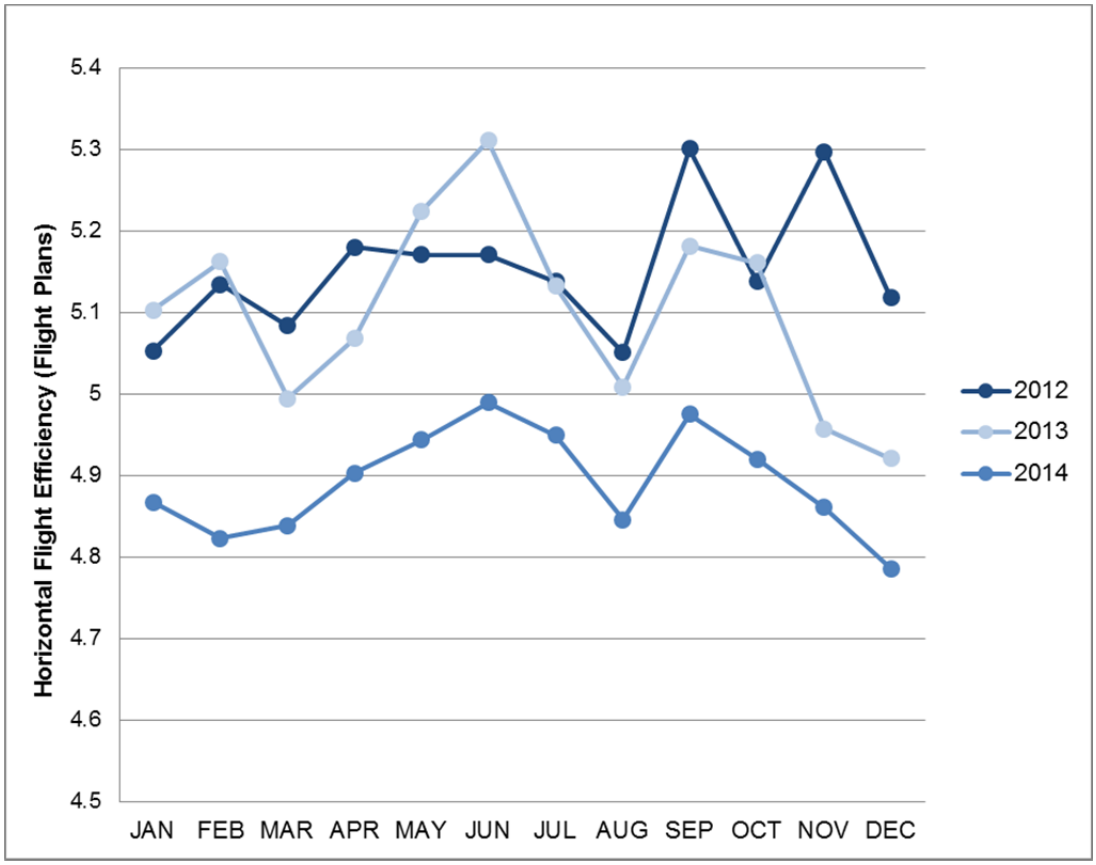


Figure 15: Monthly evolution of horizontal flight efficiency during RP1

3.2.5 Figure 16 provides a geographical breakdown by FAB, with the values of flight efficiency for the FABs and their share in terms of the additional distance taken into consideration for the Union-wide calculation. What is shown as contribution combines the effects of the horizontal flight efficiency in the area with the distances considered for the same area.

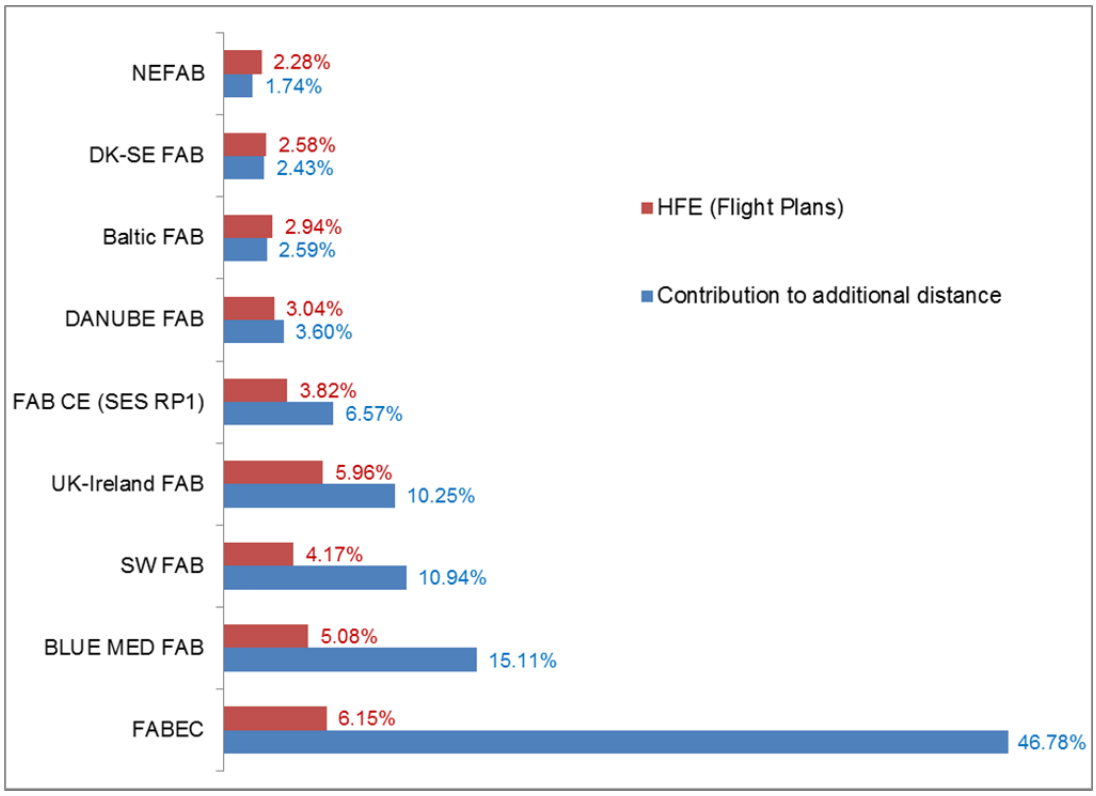


Figure 16: FAB breakdown of horizontal flight efficiency and contribution to additional distance in 2014

3.3 Effective Use of Civil Military Airspace Structures

UTILISATION OF CONDITIONAL ROUTES

3.3.1 Data on this indicator is only available on a network level. Figure 17 shows the ratio of aircraft which filed flight plans using conditional routes. Figure 17 (left) shows that 70% of aircraft that could have used CDR1s (which are available by default) filed flight plans that included conditional routes. Figure 17 (right) shows that 64% of aircraft that could use CDR2s (which, by default, are not available) filed flight plans that included conditional routes.

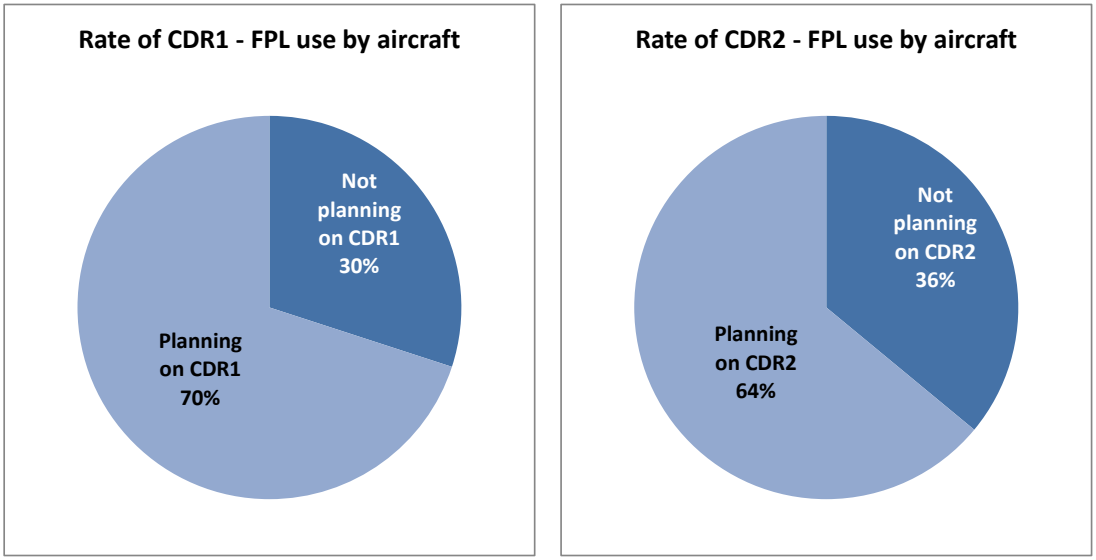


Figure 17: Utilisation of conditional routes 2014

UTILISATION OF CONDITIONAL ROUTES OVER RP1

YEAR	2012	2013	2014
Aircraft Planning on CDR 1	74%	73%	70%
Aircraft Planning on CDR 2	64%	66%	63%

Table 6: CDR FPL Use by aircraft 2012 - 2014

3.3.2 Table 6 shows that the rate of uptake of CDRs has been relatively static over the period 2012 – 2014. This could be explained by several reasons: civil military authorities may not be making the CDRs available when there is actual demand; aircraft operators may not know when CDRs are available, or may for business reasons simply prefer not to fly on them; CDRs availability may not be coordinated across national regional boundaries making individual segments unusable despite being available. The PRB understands that work continues between all stakeholders, including Network Manager, ANSPs, military authorities, aircraft operators and computer flight plan service providers to focus on each of the areas highlighted above.

Free Route Airspace (FRA) Concept

Free route airspace (FRA) is a key development with a view to the implementation of shorter routes and more efficient use of the European airspace.

FRA refers to a specific portion of airspace within which airspace users may freely plan their routes between an entry point and an exit point without reference to the fixed Air Traffic Services (ATS) route network. Within this airspace, flights remain at all times subject to air traffic control and to any overriding airspace restrictions.

3.3.3 The PRB is aware that, as Free Route Airspace is increasingly deployed across the Network, the monitoring of CDR planning and CDR usage becomes less relevant. Aircraft are no longer constrained to the limits of ATS routes, including conditional routes, but are able to plan individual trajectories that meet their business objectives in terms of fuel burn and flight efficiency.

3.3.4 The PRB considers that the focus in the future should be on monitoring whether or not the national/regional civil and military authorities manage the airspace effectively, in terms of capacity and flight efficiency, to meet the needs of civil and military users.

EFFECTIVENESS OF BOOKING PROCEDURES FOR FUA

3.3.5 For RP1, States were asked to provide data on the number of hours that airspace structures were allocated for activities requiring segregation or restriction of other traffic. From these hours, States were asked to provide information on the number of hours that were still allocated three hours prior to activation of the airspace structure, and the number of hours during which the airspace structures were actually used for activities requiring segregation or restriction of other traffic.

3.3.6 Due to the specific nature of national training and operational requirements, it is not possible to present a homogenous indicator for the Union, although a summary of the national indicators is presented in Table 7. Using the data provided by the States, it is possible to present the following characteristics:

- the percentage of hours that allocated airspace was used for an activity requiring segregation/restriction from general air traffic [Usage];
- the percentage of hours that allocated airspace, surplus to requirements, was released with more than 3 hours' notification to the Network Manager [H-3 Release];
- the percentage of hours in which allocated airspace was neither used for an

activity requiring segregation or restriction from general air traffic, nor released with at least 3 hours' notice to the Network Manager [Delta].

3.3.7 Each of the characteristics above was calculated by using the total number of hours that airspace was allocated, as being segregated or restricted on the day prior to operations (pre-tactical), as the baseline.

STATE	USAGE	H-3 RELEASE	DELTA
Austria	66%	No info	No info
Belgium	69%	0%	31%
Bulgaria	39%	No info	No info
Cyprus	No info	No info	No info
Czech Republic	40%	No info	No info
Denmark	17%	9%	74%
Estonia	No info	No info	No info
Finland	27%	0%	73%
France	63%	5%	32%
Germany	52%	2%	46%
Greece	No info	No info	No info
Hungary	30%	No info	No info
Ireland	No info	No info	No info
Italy	44%	0%	56%
Latvia	30%	0%	70%

STATE	USAGE	H-3 RELEASE	DELTA
Lithuania	(a)	(a)	(a)
Luxembourg	(a)	(a)	(a)
Malta	(a)	(a)	(a)
The Netherlands	88%	0%	12%
Norway	47%	No info	No info
Poland	45%	10%	45%
Portugal	(a)	(a)	(a)
Romania	62%	14%	24%
Slovakia	57%	No info	No info
Slovenia	51%	No info	No info
Spain	37%	0%	63%
Sweden	42%	9%	49%
Switzerland	59%	0%	41%
United Kingdom	40%	21%	39%

Table 7: Environmental KPA: effective booking procedures 2014

(a) These States reported that the allocation and activation of military areas had no adverse impact, either on available ATC capacity, or on route options for general air traffic.
'No info' refers either to no data being provided or insufficient data to calculate the KPI.

3.3.8 Evolution of Usage of Pre-tactically Booked Airspace from 2012 – 2014.

STATE	2012	2013	2014
Austria	38%	No info	66%
Belgium	54%	25%	69%
Bulgaria	40%	No info	39%
Cyprus	(a)	100%	No info
Czech Republic	38%	35%	40%
Denmark	58%	42%	17%
Estonia	No info	No info	No info
Finland	23%	22%	27%
France	64%	54%	63%
Germany	37%	45%	52%
Greece	No info	No info	No info
Hungary	33%	21%	30%
Ireland	(a)	No info	No info
Italy	48%	42%	44%
Latvia	7%	18%	30%

STATE	2012	2013	2014
Lithuania	(a)	(a)	(a)
Luxembourg	(a)	(a)	(a)
Malta	(a)	(a)	(a)
The Netherlands	90%	89%	88%
Norway	44%	46%	47%
Poland	48%	44%	45%
Portugal	(a)	(a)	(a)
Romania	41%	49%	62%
Slovakia	25%	26%	57%
Slovenia	72%	41%	51%
Spain	No info	58%	37%
Sweden	100%	96%	42%
Switzerland	69%	74%	59%
United Kingdom	30%	33%	40%

Table 8: Usage of Pre-tactically booked airspace 2012-2014

3.3.9 The huge variation across the States in the figures for the usage of pre-tactically

booked airspace can be due to many factors:

- After internal review, States may be reporting on a greatly different selection of areas than they did in 2012;
- States may be monitoring the actual use of airspace more closely than was previously the case;
- States may have revised national booking procedures to only book airspace when there is a need;
- States may have decided that there is no capacity or flight efficiency issue and that they have no objective to improve airspace booking procedures, etc.

3.3.10 However, it is of concern to the PRB that several States either do not provide any information (Greece), or provide only partial information which means that the KPI cannot be monitored (Austria, Bulgaria, Cyprus, Czech republic, Estonia, Hungary, Ireland, Norway, Slovakia, Slovenia).

3.3.11 Furthermore, since the PRB accepts that some States may not be adversely impacted by military operations and training, e.g. Malta, Luxembourg, it would appreciate if the Commission could confirm that such States may discharge their reporting requirements simply by providing the PRB with a statement to that effect.

3.3.12 States were also asked to provide information on the tactical allocation and use of airspace, whenever the airspace management technique "Procedure 3" was applicable within the State. Out of the 29 SES States, only Germany and Ireland provided information on the tactical allocation and use of airspace for 2014: Table 9.

STATE	ACTUAL USAGE	
	PRE-TACTICAL ALLOCATION	TACTICAL ALLOCATION
Germany	52%	58%
Ireland	No info	92%

Table 9: Comparison of Pre-tactical and Tactical airspace allocation 2014

3.4 Review of 2013 Recommendations on the Environment

3.4.1 Recommendation made in 2013: *"The PRB advised the EC to request the NM to continue and expand those activities which have led to the marked improvements in the latter part of 2013 so as to ensure that the Flight Efficiency target of 4.67% can be reached by end 2014".* The marked improvements in the latter part of 2013 have indeed continued in 2014, but were not sufficient to meet the target.

3.4.2 *"The PRB advised the EC to request the Member 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.

3.4.3 *"The PRB advised the EC to clarify to Member States 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 Member 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.

3.5 2014 observation for Environment

3.5.1 A significant improvement in horizontal route extension achieved in 2014 brought the Key Performance Indicator down to 4.90%. This was not sufficient however to meet the target set for 2014: 4.67% (a 0.75% reduction compared to the 2009 baseline).

3.5.2 Recommendations based on the 2014 observation and overall RP1 recommendations can be found in Section 8.6 of this report.

4 Capacity

4.1 Presentation

4.1.1 Under the Capacity KPA, a Union-wide target has been set for en-route ATFM delays per flight. Furthermore, the performance Regulation[4] stipulates that the three PIs related to airport capacity, as outlined in Table 10, be reported on.

CAPACITY	
En-route ATFM delay per flight	Union-wide target (Nat./FAB targets)
Arrival ATFM delay	Reporting
Additional time in taxi-out phase	Reporting
Additional time in arriving sequencing and metering area (ASMA)	Reporting

Table 10: Capacity indicators for RP1

4.2 En-route ATFM Delays

UNION-WIDE LEVEL

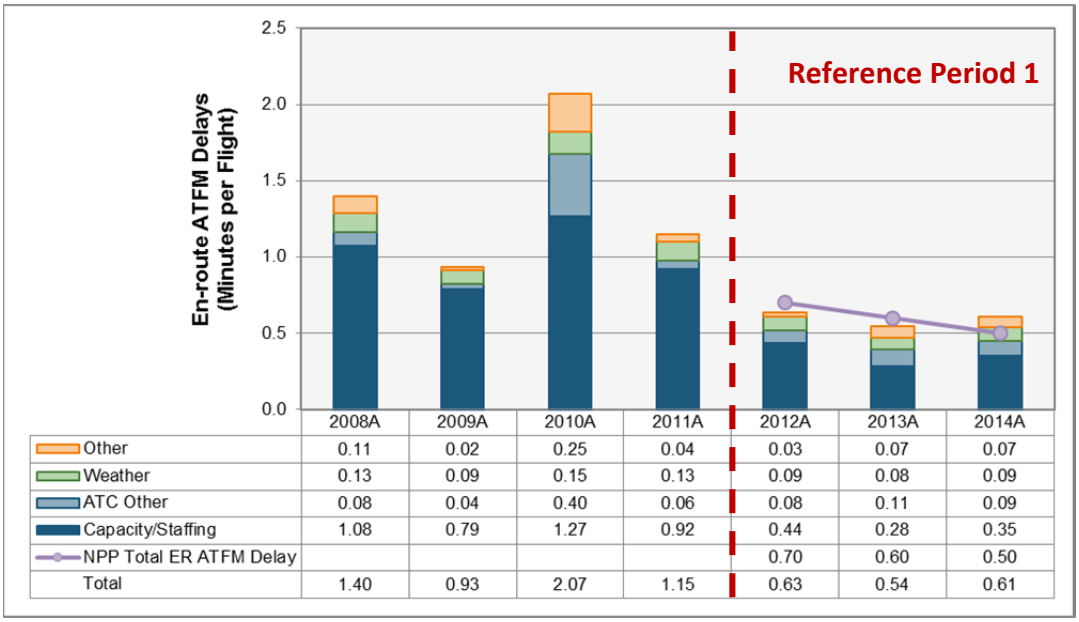
4.2.1 The Union-wide target for en-route ATFM delays in RP1 was 0.5 minutes per flight for 2014, with intermediate targets of 0.7 min./flight in 2012 and 0.6 min./flight in 2013. These targets are shown in Figure 18; which also presents a breakdown of en-route ATFM delays according to the causes, as classified by the Flow Management Position requesting the regulation for the period 2008-2014.

4.2.2 In 2014, the Union-wide target of 0.5 minutes was not met, with actual en-route ATFM delay per flight reaching 0.61 minutes. The Union-wide traffic level increased by 1.9% from 2013 levels, compared to a predicted increase of 1.4% (STATFOR September 2013 forecast).

4.2.3 There were several political events that significantly impacted traffic flows during 2014: the crises in Syria, Ukraine (including the downing of MH017 in July 2014), Libya and Israel / Palestine.

4.2.4 These events triggered significant and prolonged disruptions to traffic flows, with several States incurring substantial (more than 8%) increase in traffic volumes, and well above the levels previously forecasted. Such States include: Bulgaria, Romania, Hungary, Slovakia, Cyprus and Greece.

4.2.5 The PRB is pleased to report that Bulgaria (+24%), Romania (+16%), Hungary (+11%) and Slovakia (+9%) were able to handle the additional increase in traffic and still provide a positive contribution to the Union-wide target on en-route capacity. The PRB acknowledges the tremendous effort from the staff and management of the concerned ANSPs. The PRB also notes the value in planning additional capacity to deal with unexpected events.



	2008A	2009A	2010A	2011A	2012A	2013A	2014A
Other	0.11	0.02	0.25	0.04	0.03	0.07	0.07
Weather	0.13	0.09	0.15	0.13	0.09	0.08	0.09
ATC Other	0.08	0.04	0.40	0.06	0.08	0.11	0.09
Capacity/Staffing	1.08	0.79	1.27	0.92	0.44	0.28	0.35
NPP Total ER ATFM Delay					0.70	0.60	0.50
Total	1.40	0.93	2.07	1.15	0.63	0.54	0.61

Figure 18: En-route ATFM delays 2008-2014

LOCAL LEVEL

4.2.6 Table 11 shows the contribution of each FAB & States to the 2014 total en-route ATFM delay minutes per flight. The table shows the 2014 reference value provided by the Network Manager in 2011 and used to determine consistency with the Union-wide target; the adopted national or FAB target as contained in the national / FAB Performance Plans, and the actual value recorded in 2014. The colours indicate whether the actual value is consistent (green) or inconsistent (red).

PERIOD: JAN-DEC 2014 FAB	STATE	NM REFERENCE VALUE	TARGET (PP)	ACTUAL JAN-DEC
Baltic FAB		**0.24**	*No target*	**0.73**
	Lithuania	0.06	0.06	0.00
	Poland	0.26	0.48	0.79
Blue Med FAB		**0.21**	*No target*	**0.41**
	Cyprus	0.30	1.00	1.91
	Greece	0.26	0.95	0.41
	Italy	0.12	0.12	0.02
	Malta	0.05	0.05	0.00
Danube FAB		**0.08**	*No target*	**0.00**
	Bulgaria	0.12	0.11	0.00
	Romania	0.00	0.00	0.00
DK-SE FAB		**0.08**	**0.08**	**0.02**
	Denmark	0.07	*No target*	0.00
	Sweden	0.06	*No target*	0.03
FAB CE (SES RP1)		**0.33**	*No target*	**0.06**
	Austria	0.23	0.23	0.02
	Czech Republic	0.15	0.15	0.01
	Hungary	0.07	0.03	0.00
	Slovakia	0.19	0.19	0.14
	Slovenia	0.22	0.03	0.00
FABEC		**0.40**	**0.50**	**0.56**
	Belgium/Luxembourg	0.21	*No target*	0.02
	France	0.24	*No target*	0.66
	Germany	0.29	*No target*	0.26
	Netherlands	0.18	*No target*	0.12

PERIOD: JAN-DEC 2014 FAB	STATE	NM REFERENCE VALUE	TARGET (PP)	ACTUAL JAN-DEC
	Switzerland	0.14	*No target*	0.10
	MUAC	0.22	*No target*	0.17
NEFAB		**0.12**	***No target***	**0.05**
	Estonia	0.22	0.22	0.03
	Finland	0.16	0.02	0.12
	Latvia	0.05	0.03	0.00
	Norway	0.05	0.05	0.03
SW FAB		**0.34**	***No target***	**0.43**
	Portugal Continental	0.16	0.15	0.50
	Spain	0.31	0.50	0.30
UK-IR FAB		**0.29**	***No target***	**0.06**
	Ireland	0.14	0.14	0.00
	United Kingdom	0.27	0.26	0.06
SES AREA RP1		**0.50**	**0.50**	**0.61**

Table 11: En-route ATFM delay per flight – FAB / State contribution

4.2.7 Table 11 shows that, where a national target was published, all States except Poland, Cyprus, Portugal and Finland achieved their national target.

4.2.8 In the national monitoring reports:

- Poland attributed the poor performance to a combination of increased traffic demand, industrial action in France and the delay in the implementation of their new ATM system;
- Cyprus attributed the poor performance to a combination of increased traffic, re-routings due to political events (see above), a downward revision of available capacity and the inflexibility of ATC working practices, which it is claimed, is outside the control of the ANSP;
- Portugal attributed the poor performance to a combination of unexpected and significant increase in traffic demand and an inability to deploy capacity outside the peak summer period due to the general economic situation in Portugal, and the national Economic Adjustment Program;
- Finland attributed the temporary poor performance to the implementation of major airspace changes in November 2014. [*Note: Despite Finland failing to meet their national target, they still provided a positive contribution to the Union-wide target on en-route capacity by surpassing the respective national reference value of 0.16 minutes per flight*.]

4.2.9 When a FAB target was published (FABEC & DK-SE FAB), the DK-SE FAB achieved its FAB target, whereas FABEC did not.

4.2.10 In the FAB monitoring report, FABEC states that traffic levels in 2014 were 11% below the traffic levels considered during the drafting of the FABEC Performance Plan. FABEC states "analysis of the root causes of the remaining delay shows that most of them are local causes or, like weather, cannot be influenced."

INFLUENCE OF NATIONAL PERFORMANCE ON FAB PERFORMANCE

4.2.11 The national performance of France adversely impacted FABEC performance.

4.2.12 Unsurprisingly, as the larger of the two ANSPs in the FAB, Poland's national performance had significant adverse impact on the Baltic FAB's performance.

4.2.13 The national capacity performance of Cyprus adversely impacted the Blue Med FAB

performance, although it must be noted that Greece, despite meeting their national target, did not provide a positive contribution to the Union-wide target for en-route capacity.

4.2.14 The national capacity performance for Portugal adversely impacted the SW FAB performance.

4.2.15 As noted above, despite failing to achieve their national target, the national capacity of Finland still provided a positive impact on the NEFAB performance, resulting in NEFAB providing a positive contribution to the Union-wide target for 2014.

CAPACITY PLANNING

4.2.16 Capacity planning remains a significant issue. As noted above, when States make provisions for additional capacity they are able to handle unexpected rises in traffic volumes without penalising the airspace users.

4.2.17 However, when States fail to plan and implement sufficient capacity even for the forecasted traffic then they will not be in a position to provide acceptable capacity performance.

4.2.18 Despite the recommendations of the EC that FABEC should require their ANSPs to develop and implement capacity plans to meet the FABEC reference value of 0.4 minutes average ATFM delay per flight at the earliest possible date, failure to do so has resulted in FABEC being unable to deliver the required level of service even with traffic levels 11% below what was forecasted in 2011.

4.2.19 The PRB previously raised concerns about the continuous postponement and downgrading of capacity plans, especially in those States that were unable or unwilling to adopt the reference capacity values to be consistent with the Union-wide target for capacity.

4.2.20 The PRB remains concerned that the same States have not made adequate provisions for capacity planning during RP2, and that as traffic grows again, capacity will become a serious problem for the network.

ACTUAL CAPACITY PERFORMANCE AND TARGET SETTING

4.2.21 Table 12 below shows a graphical comparison between the actual en-route capacity performance for each State and FAB against the targeted capacity performance as adopted by the relevant FAB/national authorities. Once again it is important to recall that several individual States (Cyprus, Greece, Poland & Spain) and one FAB, (FABEC) adopted targets that were not consistent with the Union-wide target of 0.5 minutes ATFM delay per flight for 2014.

4.2.22 It shows that the vast majority of States adopted targets that were easily achieved by the respective ANSPs.

4.2.23 The graphic further shows that several of the States/FABs that did not set targets consistent with the union wide targets, could have pushed their ANSPs a lot further into providing better capacity performance. Greece and Spain easily surpassed the national targets over the three years of RP1. FABEC and Poland significantly surpassed their local targets in 2012 & 2013 but not in 2014.

4.2.24 The PRB considers that when States set easy targets for ANSPs it leads to downgrading or postponement of capacity plans, which creates problems in the future.

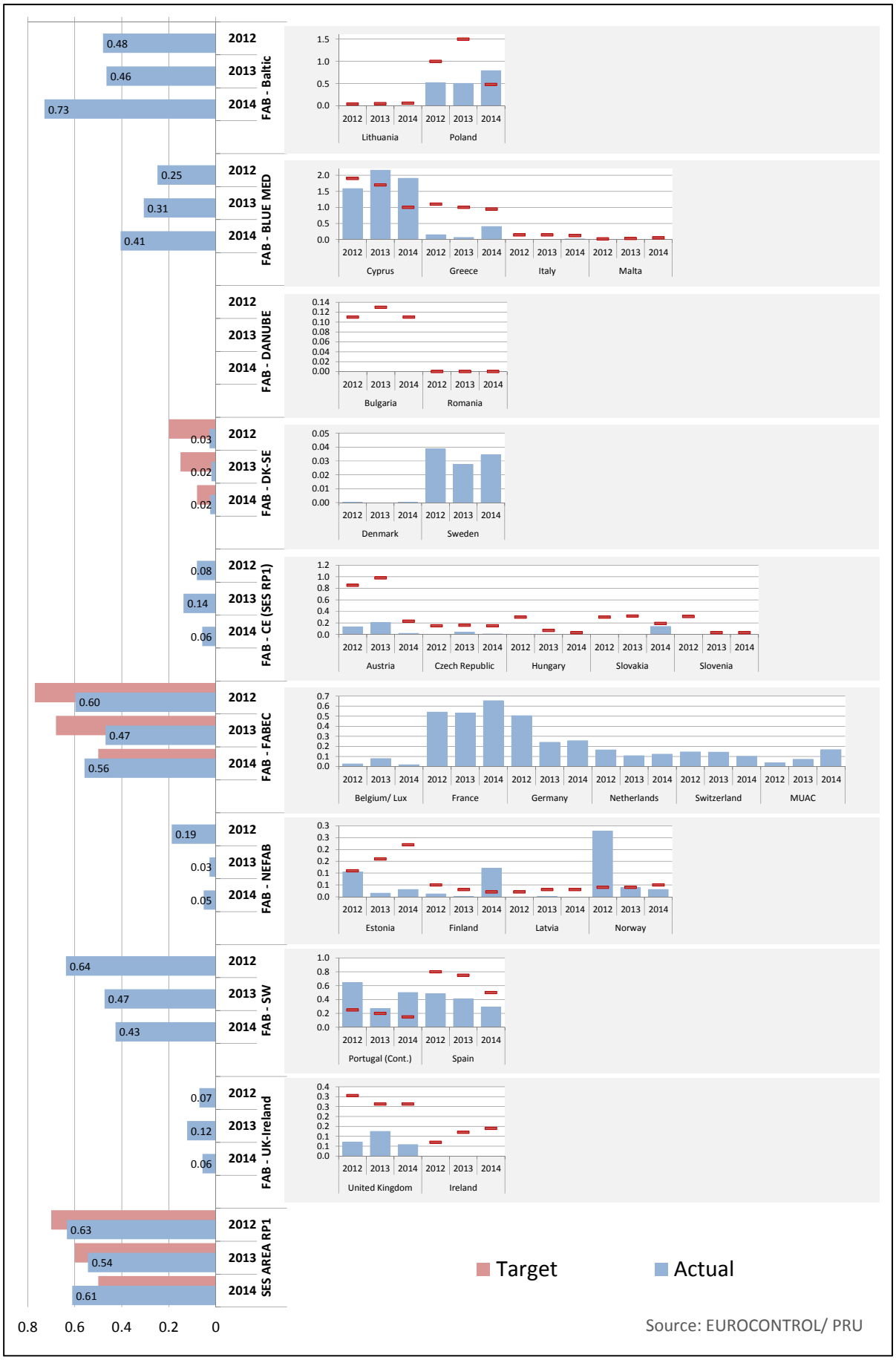


Table 12: Actual and targeted en-route ATFM delay per flight 2012 - 2014

4.3 ANS Capacity at Airports

UNION-WIDE LEVEL

4.3.1 No targets have been set for ANS capacity at airports in RP1.

4.3.2 77 airports are subject to the Performance Scheme during RP1, as shown in Figure 19 (Commission Implementing Regulation (EU) N° 691/2010 superseded by Regulation (EU) N° 390/2013). The full list of RP1 airports can be found in Volume 2 of this report. Operational ANS performance in terms of arrival ATFM delay and additional taxi-out time is monitored for all of these airports, whilst RP1 airports accommodating more than 100,000 movements per annum are subject to monitoring of additional ASMA time, i.e. 39 airports.

4.3.3 Performance Monitoring is carried out by using the data flow defined in Annex IV of Regulation (EU) N° 691/2010, and further on in Annex V of Regulation (EU) N° 390/2013. The PRU has been tasked with the organisation and day-to-day management of the respective airport data flows.

Figure 19: RP1 airports

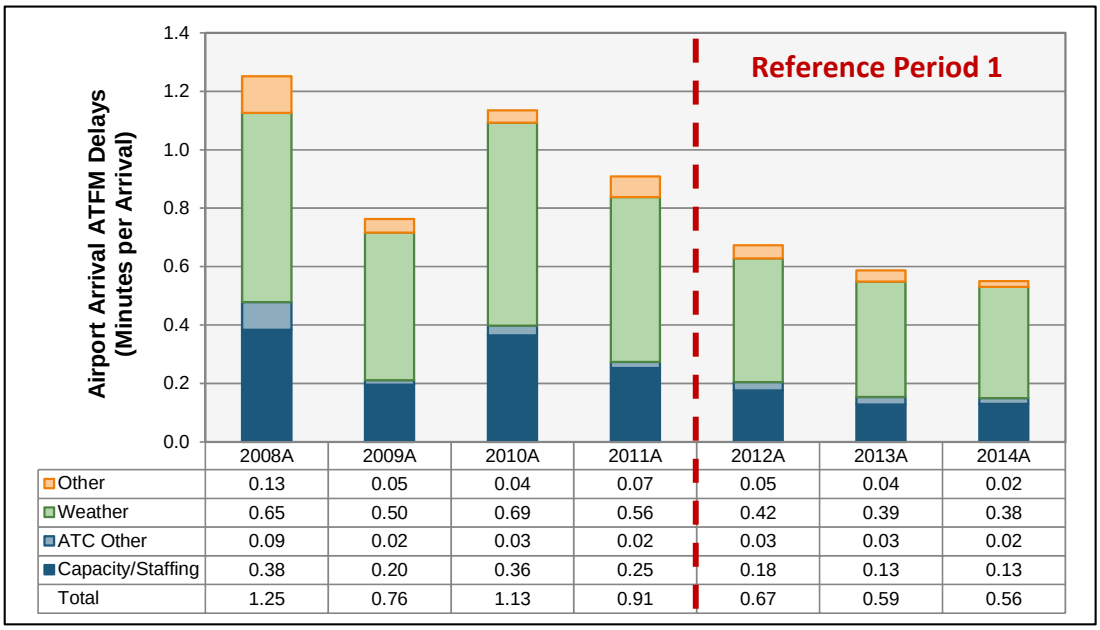
4.3.4 The technical processes and organisational measures to ensure regular airport performance monitoring have been established and are being maintained by the PRU. PRU has also established a quality assurance framework to ensure and improve the quality of data reported by airport operators. Few cases of substantial non-compliance of airports with the reporting requirements remain (e.g. establishment of data flow, completeness of data provision, accuracy/consistency of data). In such cases, remedial action has been planned by the PRU in close collaboration with the respective authorities and/or airports. These action plans have resulted in improvements to the reporting situation in 2013 and 2014 (e.g. integration of German and Italian airports). Work is on-going to iteratively close these action plans.

4.3.5 When data required for the calculation of additional ASMA and taxi-out times has not been provided by airports, these indicators are not published by the PRB. At the end

of RP1, additional ASMA time could be calculated for 36 airports out of 39 satisfying the threshold of 100,000 movements for the calculation of additional ASMA time (information was missing for Oslo/Gardermoen, Warsaw and Nice). Additional taxi-out time could not be computed for 17 airports out of the 77 airports subject to RP1; out of the 17 “missing” airports, 16 of them did not yet manage to provide data at acceptable quality standards[5], whilst another airport did not provide any data at all (Vilnius airport). As part of the above-mentioned quality assurance framework, the PRU coordinates and maintains the remedial action plans with the reporting entities regarding the identified instances of non-compliance with the reporting requirements (i.e. "missing" data).

4.3.6 The Union-wide averages of performance indicators are included in this chapter in order to provide a high-level trend. It needs to be acknowledged that the averages may hide significant variances between airports due to local specifics. The respective performance at airport level is detailed in Volume 2 as well as on the PRB online monitoring dashboard[1].

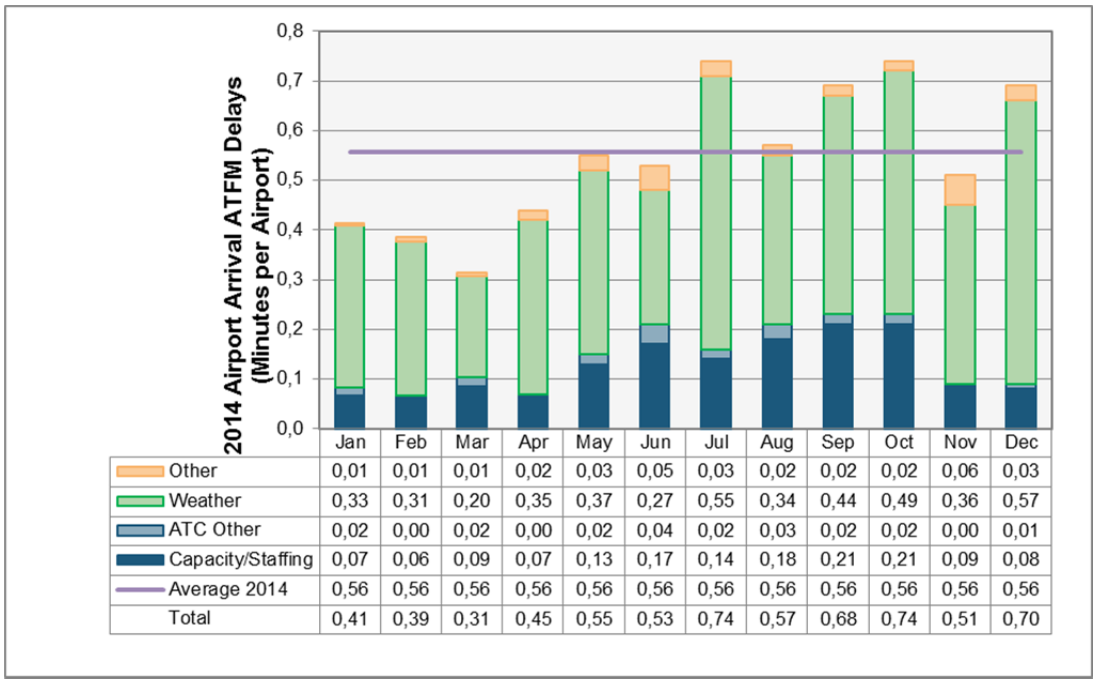
4.3.7 The European average for arrival ATFM delay decreased from 0.7 min./arr. in 2012 to 0.6 min./arr. in 2014 (representing a decrease of -19%). What could be deduced from Figure 20 is that the average arrival ATFM delay is at an all-time low since 2008 and that weather conditions remain the major cause of delay, accounting for 69% of arrival ATFM delay in 2014.



	2008A	2009A	2010A	2011A	2012A	2013A	2014A
Other	0.13	0.05	0.04	0.07	0.05	0.04	0.02
Weather	0.65	0.50	0.69	0.56	0.42	0.39	0.38
ATC Other	0.09	0.02	0.03	0.02	0.03	0.03	0.02
Capacity/Staffing	0.38	0.20	0.36	0.25	0.18	0.13	0.13
Total	1.25	0.76	1.13	0.91	0.67	0.59	0.56

Figure 20: Airport arrival ATFM delays

4.3.8 As depicted in Figure 21, July and October are the months during which the highest level of average arrival ATFM delay (0.7 min./arr.) was experienced in Europe in 2014. Nevertheless, the monthly distribution of arrival ATFM delay varies on a year-by-year basis. Indeed, the highest arrival ATFM delay in 2013 occurred in January (1.2 min./arr.) and December (0.9 min./arr.) (c.f. the PRB Annual Monitoring Report 2013). The two major causes of arrival ATFM delay remain weather and capacity/staffing shortages.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Other	0,01	0,01	0,01	0,02	0,03	0,05	0,03	0,02	0,02	0,02	0,06	0,03
Weather	0,33	0,31	0,20	0,35	0,37	0,27	0,55	0,34	0,44	0,49	0,36	0,57
ATC Other	0,02	0,00	0,02	0,00	0,02	0,04	0,02	0,03	0,02	0,02	0,00	0,01
Capacity/Staffing	0,07	0,06	0,09	0,07	0,13	0,17	0,14	0,18	0,21	0,21	0,09	0,08
Average 2014	0,56	0,56	0,56	0,56	0,56	0,56	0,56	0,56	0,56	0,56	0,56	0,56
Total	0,41	0,39	0,31	0,45	0,55	0,53	0,74	0,57	0,68	0,74	0,51	0,70

Figure 21: Airport arrival ATFM delay 2014 – Breakdown per month

4.3.9 The situation at airports may vary significantly due to local circumstances. In 2014, the greatest arrival ATFM delay was experienced at Zurich and London Heathrow airports, with respectively 2.7 and 1.9 min./arr., whilst it was relatively low at Charles-de-Gaulle (0.3 min./arr.). The time series for each airport is reported at the SES Performance Dashboard. The dashboard can be accessed via the PRB website or by clicking on this link[1].

4.3.10 Figure 22 shows the most significant changes in arrival ATFM delay observed on the local level throughout RP1. The five most significant improvements in terms of impact on the network have been achieved at Paris Charles-de-Gaulle, Madrid, Oslo, Manchester, and Tenerife. In analogy, as shown in Figure 23, the five most increases in arrival ATFM delay were observed at Brussels, Warsaw, Bergen, London City and Ibiza.

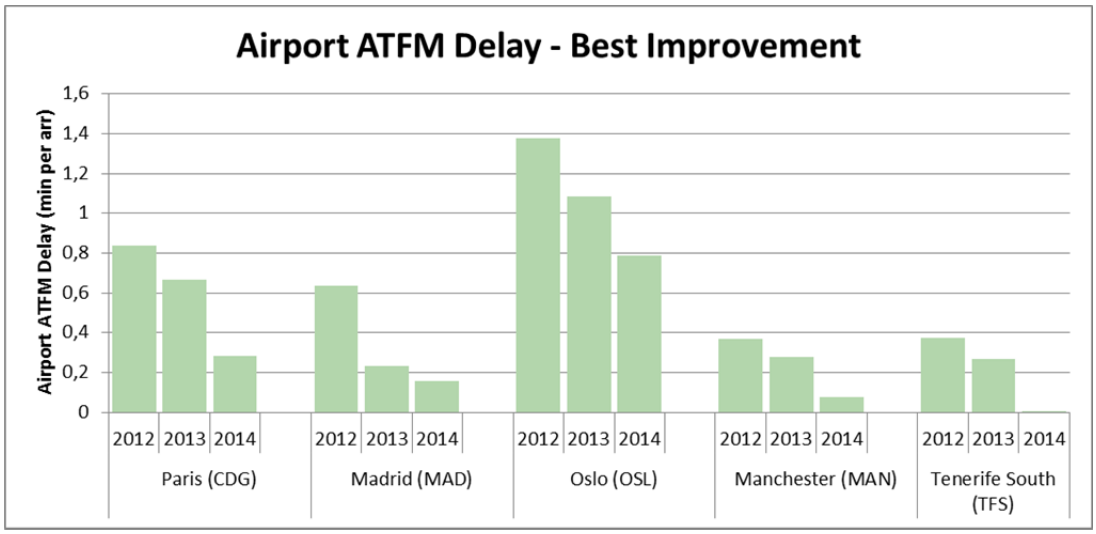


Figure 22: Airport ATFM delay – Best improvement

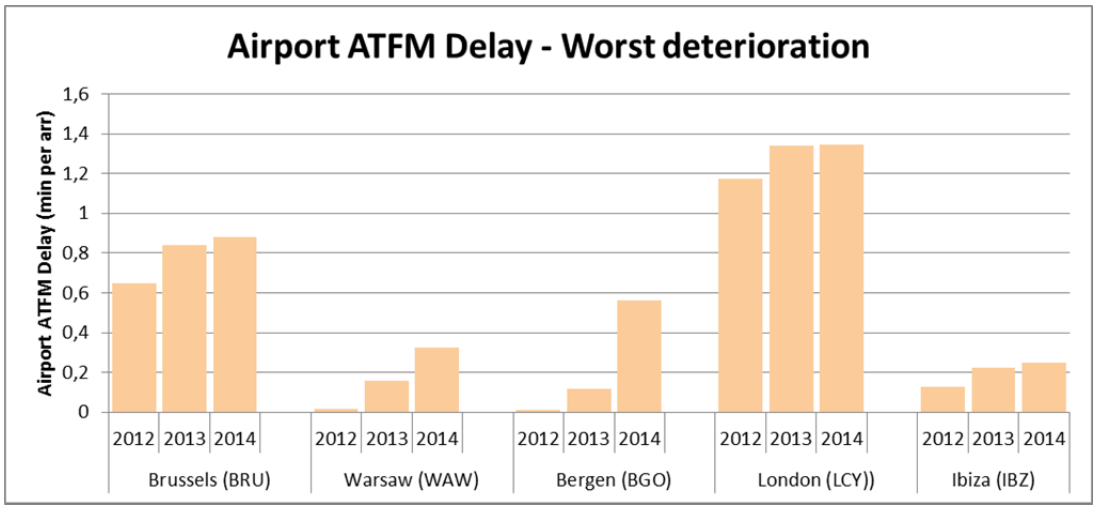


Figure 23: Airport ATFM delay – Worst deterioration

4.3.11 Both the traffic volume and the level of coordination at each airport are key factors to be considered before drawing conclusions on performance. For example in 2013, with an average arrival ATFM delay of 0.7 min./arr., Paris/Charles-de-Gaulle had a similar impact on the network than Vienna which recorded 1.2 min./arr. ATFM delay on average, because the traffic volume at Charles-de-Gaulle was 1.9 times greater than Vienna's over the same period of time. In absolute terms, the total airport arrival ATFM delay generated at Paris/Charles-de-Gaulle resulted in 158,869 minutes' extra time in 2013 compared with 153,171 minutes at Vienna Airport, representing 3 days 22 hours and 58 minutes less.

4.3.12 When compared to 2012, additional ASMA time remained relatively unchanged across all reporting airports in 2014 with a European average of 1.9 min./arr. (see Figure 24).

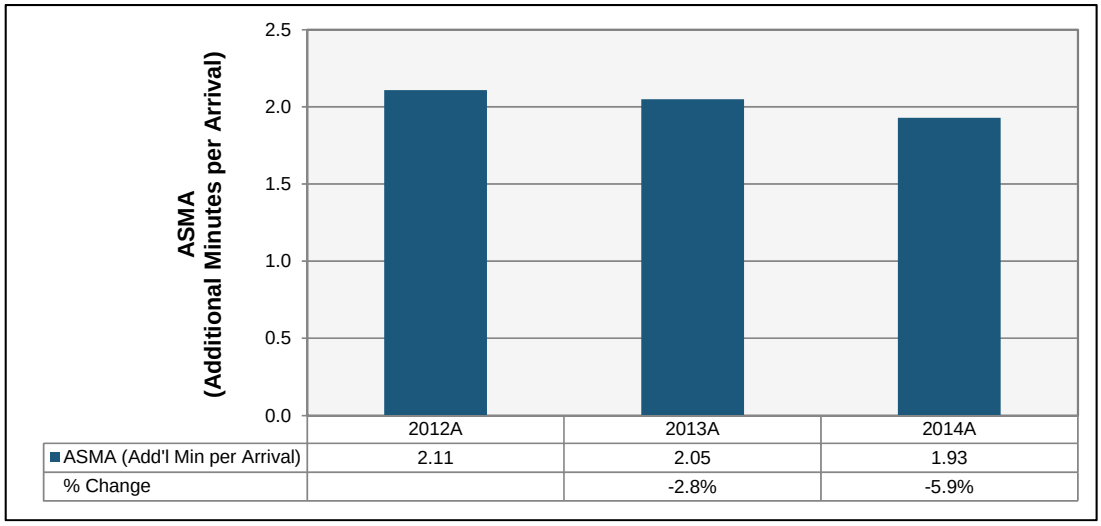
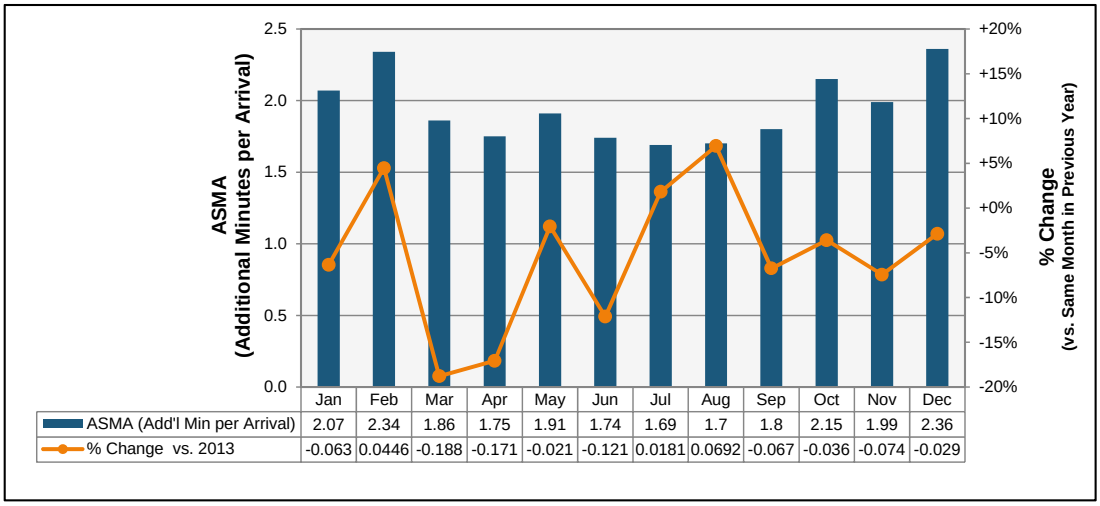


Figure 24: Additional ASMA time 2012-2014

4.3.13 The monthly fluctuation of additional ASMA time in 2014 is depicted in Figure 25. December remains the month during which the highest additional ASMA time was recorded in 2014. This is probably due to unpredicted adverse weather conditions and snow removal operations at some airports.

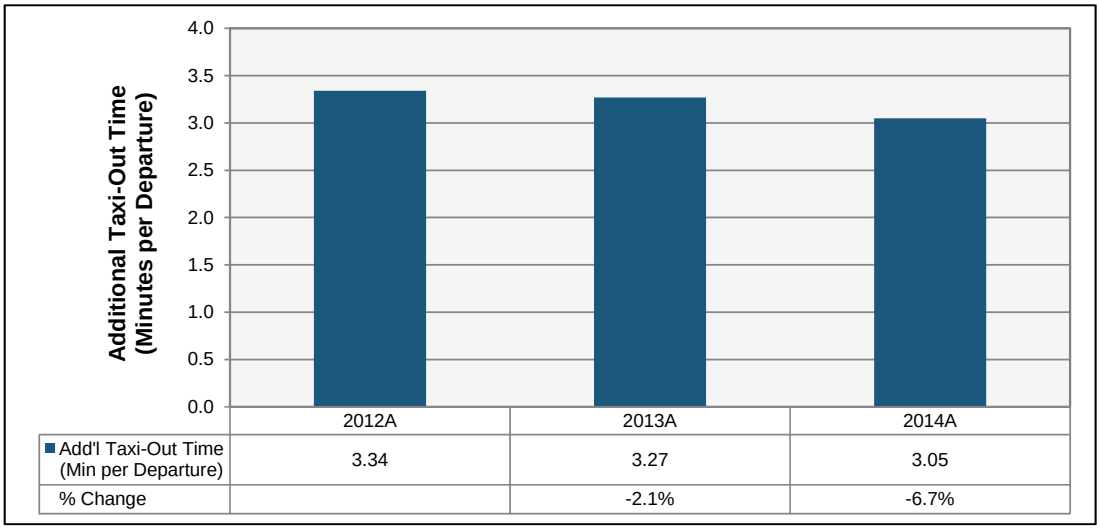


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ASMA (Add'l Min per Arrival)	2.07	2.34	1.86	1.75	1.91	1.74	1.69	1.7	1.8	2.15	1.99	2.36
% Change vs. 2013	-0.063	0.0446	-0.188	-0.171	-0.021	-0.121	0.0181	0.0692	-0.067	-0.036	-0.074	-0.029

Figure 25: Monthly fluctuation of Additional ASMA time during 2014 (vs 2013)

4.3.14 Reflecting local circumstances, the additional ASMA time varied from 0.5 min./arr. at Athens and Milano/Linate airports to 8.6 min./arr. at London Heathrow on average during 2014.

4.3.15 Additional taxi-out time slightly decreased over RP1, with a European average of 3.1 min./dep., as shown in Figure 26.



	2012A	2013A	2014A
Add'l Taxi-Out Time (Min per Departure)	3.34	3.27	3.05
% Change		-2.1%	-6.7%

Figure 26: Additional taxi-out time 2012-2014

4.3.16 Equally to the other two indicators, Figure 27 shows that additional taxi-out times vary on a seasonal basis. While in 2013, the times in the winter exceeded the times measured during the summer, shows that the peak month for additional taxi-out times in 2014 are June and July (when capacity shortages occurred), as well as December (due to winter conditions: remote de-icing and snow removal operations).

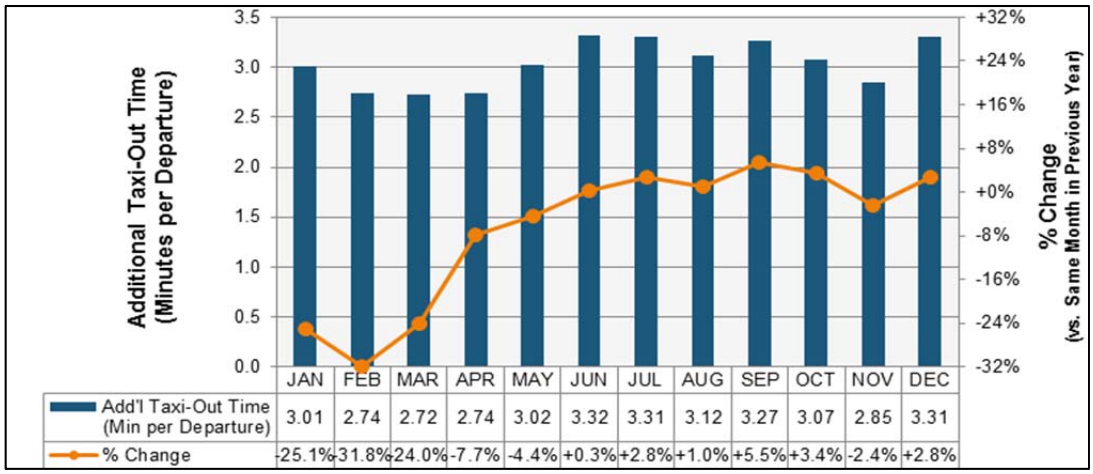


Figure 27: Monthly fluctuation of Additional taxi-out time during 2014 (vs 2013)

4.3.17 Similarly to arrival ATFM delay and additional ASMA time, there were significant local variations in additional taxi-out times, ranging from 1.0 min./dep. at Berlin/Schoenefeld airport to 8.7 min./dep. at London Heathrow. It is recognised at several airports that A-CDM can significantly reduce additional taxi-out time, due to a better predictability.

LOCAL LEVEL

4.3.18 Table 13 presents the SES performance indicators for airports clustered by traffic volume categories, at the end of RP1.

		IFR MOVEMENTS PER DAY		
		> 400	300-400	200-300
ARRIVAL ATFM DELAY	Above 2 min./arr.			**Zurich** (LSZH, 2.7 min./arr.)
	Between 1and 2 min./arr.	**London Heathrow** (EGLL, 1.9 min./arr.) **Amsterdam** (EHAM, 1.9 min./arr.) **Frankfurt** (EDDF, 1.3 min./arr.)		**Geneva** (LSGG, 1.5 min./arr.)
ADDITIONAL ASMA TIME	Above 2 min./arr.	**London Heathrow** (EGLL, 8.6 min./arr.) **Frankfurt** (EDDF, 2.6 min./arr.)		**Zurich** (LSZH, 3.2 min./arr.) **London/Gatwick** (EGKK, 3.0 min./arr.)
	Between 1 and 2 min./arr.	**Amsterdam** (EHAM, 1.4 min./arr.)	**Munich** (EDDM, 1.8 min./arr.) **Roma/Fiumicino** (LIRF, 1.7 min./arr.)	**Vienna** (LOWW, 2.0 min./arr.) **Geneva** (LSGG, 2.0 min./arr.) **Dusseldorf** (EDDL, 1.8 min./arr.) **Barcelona** (LEBL, 1.9 min./arr.) **Copenhagen** (EKCH, 1.3 min./arr.) **Paris/Orly** (LFPO, 1.0 min./arr.)

		IFR MOVEMENTS PER DAY		
		> 400	300-400	200-300
ADDITIONAL TAXI-OUT TIME	Above 4 min./dep.	**London Heathrow** (EGLL, 8.7 min./dep.)	**Roma/Fiumicino** (LIRF, 6.8 min./dep.)	**London/Gatwick** (EGKK, 5.2 min./dep.)
	Between 3 and 4 min./dep.	**Paris/Charles-de-Gaulle** (LFPG, 3.9 min./dep.) **Frankfurt** (EDDF, 3.6 min./dep.)	**Madrid** (LEMD, 3.9 min./dep.)	**Barcelona** (LEBL, 3.9 min./dep.)

Table 13: Mapping of SES Performance Indicators across Traffic Volumes for 2014

4.3.19 As shown in Table 13, London Heathrow remains the most critical airport in Europe from a performance perspective, for both inbound and outbound traffic flows. Despite a smaller traffic volume, a similar low level of performance for inbound operations was recorded at Zurich Airport.

4.3.20 Averages for the three performance indicators required by the Regulation (EU) N° 390/2013 are shown in Figure 28. These averages are weighted and based on airport traffic volume. The Performance Plan level generally matches the State level, and is also aggregated at FAB level for Belgium, France, Germany, Luxembourg and the Netherlands on one side (FABEC), and Denmark and Sweden on the other (DK-SE FAB).

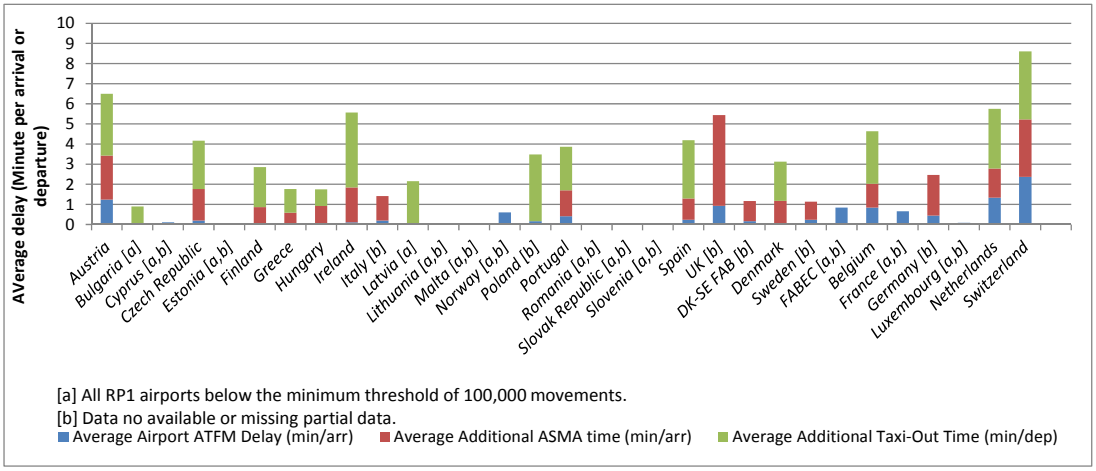


Figure 28: Airport capacity performance, State level, 2014

4.3.21 The three airport-related indicators are provided per State and/or FAB over RP1 in Table 14.

State	Average Arrival ATFM Delay (min./arr.)			Average Additional ASMA time (min./arr.)			Average Additional Taxi-Out Time (min./dep.)		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Austria	1.1	1.2	0.8	2.3	2.2	2.0	**2.4**	**3.1**	**2.2**
Bulgaria	0.0	0.0	0.0	[a]	[a]	[a]	**1.5**	**0.9**	**1.2**
Cyprus	0.2	0.1	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Czech Republic	0.0	0.2	0.2	**1.0**	**1.6**	**1.2**	**2.0**	**2.4**	**1.9**
Estonia	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Finland	0.5	0.1	0.2	1.1	0.8	0.9	**2.7**	**2.0**	**2.0**
Greece	0.0	0.0	0.0	0.7	0.5	0.5	1.3	1.2	1.2
Hungary	0.0	0.0	0.0	0.7	0.9	0.6	1.3	0.8	1.0
Ireland	0.1	0.1	0.0	1.6	1.7	1.5	**3.3**	**3.7**	**3.3**
Italy	0.1	0.2	0.1	1.3	1.2	1.2	[b]	[b]	[b]
Latvia	0.0	0.0	0.0	[a]	[a]	[a]	1.9	2.2	2.0
Lithuania	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Malta	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Norway	0.7	0.6	0.6	[a,b]	[a,b]	[a,b]	[b]	[b]	[b]
Poland	0.0	0.2	0.3	[b]	[b]	[b]	**2.5**	**3.3**	**2.9**
Portugal	0.8	0.4	0.7	1.3	1.3	1.3	[b]	2.2	2.2
Romania	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Slovak Republic	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Slovenia	0.0	0.0	0.0	[a]	[a]	[a]	[b]	[b]	[b]
Spain	0.4	0.2	0.3	1.1	1.1	1.3	**3.3**	**2.9**	**2.7**
UK	1.0	0.9	0.7	4.6	4.5	4.3	[b]	[b]	[b]
DK-SE FAB	0.2	0.2	0.1	1.0	1.0	1.2	[b]	[b]	[b]
Denmark	0.1	0.1	0.0	1.1	1.1	1.3	2.1	2.0	1.7
Sweden	0.3	0.2	0.2	0.9	0.9	1.1	[b]	[b]	[b]
FABEC	1.0	0.8	0.9	[a,b]	[a,b]	[a,b]	[b]	[b]	[b]
Belgium	0.6	0.8	0.9	1.1	1.2	0.9	**1.6**	**2.6**	**2.4**
France	0.7	0.7	0.4	[a,b]	[a,b]	[a,b]	[b]	[b]	[b]
Germany	0.9	0.4	0.6	[a,b]	2.0	1.8	[b]	[b]	[b]
Luxembourg	0.1	0.1	0.1	[a]	[a]	[a]	[b]	[b]	[b]
Netherlands	**1.4**	**1.3**	**1.9**	1.5	1.4	1.4	3.0	3.0	2.8
Switzerland	2.0	2.4	2.2	2.8	2.9	2.7	**3.3**	**3.4**	**2.9**

[a]	At least one RP1 airport below the minimum threshold of 100,000 movements for ASMA calculation.
[b]	Data not available or missing partial data for at least one of the indicators.

- *These statistics are based on the SES Dashboard released on 30/03/2015. Please connect to the SES dashboard for updated figures, if required.*
- *For predictability purposes, the figures in **bold** emphasize the airports that experienced a fluctuation by 0.5 minutes or more during RP1.*

Table 14: Airport capacity indicators – Performance Plan Level

4.3.22 The aggregation and comparison of local ANS performance indicators at airports result in a loss of granularity and detail when presented at a Performance Plan level. Further appreciation of the underlying number of airports and their local characteristics (e.g. traffic volume, cf. Table 13) should be considered when aggregated State/FAB results are compared with each other.

4.3.23 While the aggregation at Performance Plan level subsumes and balances local inefficiencies of the arrival flow into relatively small or moderate levels (c.f. arrival ATFM delays ranging mostly well below one minute), the prominence of additional taxi-out times is still clearly observable at that level. The threshold of 100,000 movements p.a. for the monitoring of the additional ASMA time indicator makes the appraisal difficult at the Performance Plan level, as the aggregated results hide nuances on the airport level. Details on airport performance are provided in Volume 2 of this report.

4.4 Review of 2013 Recommendations on En-route Capacity

4.4.1 Recommendation made in 2013: *"The PRB advised the EC to request the Member States to immediately review the en-route capacity performance for 2014, including planned capacity levels, implementing remedial actions where necessary, to ensure that their respective ANSPs meet the required level of capacity performance to achieve the Union-wide target of 0.5 minutes ATFM delay per flight for 2014".* No evidence has been provided to the PRB that this has been done.

4.4.2 *"The PRB advised the EC to remind Member States of their obligation to report on the specific remedial actions being taken with their ANSPs to ensure that the 2014 annual values in their Performance Plans and the union-wide en-route capacity target of 0.5 minutes per flight will be achieved".* The PRB is not aware if any official communication was made by the EC to the States in this regard.

4.4.3 *"The PRB advised the EC to request Member States, particularly those States experiencing capacity issues, to review their application of the FUA concept in accordance with the governing principles of FUA as contained in Article 3 of EC Regulation No. 2150/2005, with the aim of meeting the needs of all airspace users".* No evidence has been provided to the PRB that this has been acted upon.

4.5 2014 Observation for En-route Capacity

4.5.1 In 2014, en-route ATFM delays increased by 15% compared with 2013, while IFR flights increased +1.9%. The Union-wide Capacity KPI for 2014 was 0.61 minutes ATFM delay per flight, which does not meet the target set for 2014: 0.50 minute/flight. This was however well below the levels recorded before RP1 as shown in Figure 5. En-route ATFM delays were concentrated in Cyprus, France, Greece, Poland and Portugal.

4.5.2 Recommendation based on the 2014 observations and overall RP1 recommendations can be found in Section 8.7 of this report.

4.6 Review of 2013 Recommendations on Airport Capacity[3]

4.6.1 Recommendation made in 2013: *"The PRB advised the EC to request those States where data deficiencies prevent the calculation of the additional ASMA and/or taxi-out time indicators to urgently implement the remedial action plan established by the EUROCONTROL's Performance Review Unit".* The airport data flow has been implemented in 2011 in order to monitor and assess ANS performance at airports in RP1, as per Regulation (EU) N° 691/2010. Although the situation improved throughout RP1 (see Annex I: Airport data quality issues – Progress Report), there

are still a few cases of substantial non-compliance with the data provision requirements; these cases are explicitly reported in Volume 2. Data completeness and consistency, in particular, are key issues in these cases.

4.7 2014 Observation for Airport Capacity

4.7.1 Regarding arrival ATFM delay, Zurich (ZRH) is the only airport with an average above two minutes, while Amsterdam (AMS) and London Heathrow (LHR) are close to this threshold. The European overall average arrival ATFM delay decreased by -19%. Weather conditions remain the major cause of arrival ATFM delay, accounting for 69% in 2014.

4.7.2 The European average of additional taxi-out time decreased slightly to 3.0 min./dep.

4.7.3 Additional ASMA time showed little variation across all reporting airports in 2014 with a European average of 1.9 min./arrival.

4.7.4 There are still a few cases of substantial non-compliance with the data provision requirements regarding airports subject to RP1.

4.7.5 A recommendation can be found in Section 8.7 of this report.

5 Cost-efficiency

5.1 Presentation of the en-route cost-efficiency KPI and targets

5.1.1 Under the cost efficiency KPA, Union-wide targets have been set for the average Determined Unit Rate (DUR) for en-route ANS in 2012, 2013 and 2014 (Table 15). The aggregation of the individual national cost-efficiency targets for RP1 as adopted in the National Performance Plans provides for a slightly lower figure for 2012 and higher figures for 2013 and 2014 (Table 16) in comparison to the Union-wide targets.

COST EFFICIENCY UNION-WIDE TARGETS	2012	2013	2014
Real en-route unit costs per Service Units (in EUR_{2009})	57.88	55.87	53.92

Table 15: En-route cost-efficiency targets for RP1 as per EC Decision on Union-wide targets

COST EFFICIENCY DATA FROM NATIONAL PERFORMANCE PLANS	2012P	2013P	2014P
Real en-route unit costs per Service Units (in EUR_{2009})	57.75	56.69	54.84

Table 16: En-route cost-efficiency targets for RP1 as per aggregation of national targets

5.2 Actual 2014 unit cost vs. DUR in adopted Performance Plans

5.2.1 In order to ensure consistency with the Determined Costs (DCs) data provided in the adopted NPPs and to allow for Union-wide consolidation, actual costs are expressed in real terms ($€_{2009}$ prices). Figure 29 below shows that, in 2014, the Union-wide actual en-route unit cost (54.13 $€_{2009}$) was -1.3% lower than planned in the NPPs (54.84 $€_{2009}$). This is because in 2014 actual en-route costs were -5.7% (or -359.2 $M€_{2009}$) lower than the DCs in the NPPs (6,304.8 $M€_{2009}$), while the actual number of Total Service Units (TSUs) was -4.5% lower than planned. However the Union-wide actual en-route unit cost (54.13 $€_{2009}$) was 0.4% higher than the EU target of €53.92 set for 2014.

5.2.2 This report does not include Italy's most recent updates to their final actual costs 2014 data. These updates have no bearing on the cost-efficiency analysis and recommendations contained in this report.

Actual unit cost vs. DUR in adopted Performance Plans							
SES States - Data from RP1 national performance plans		**2009A**	**2010A**	**2011F**	**2012P**	**2013P**	**2014P**
Real en-route costs (determined costs 2012-2014) - (in EUR2009)		6 247 946 111	6 067 472 645	6 164 114 436	6 258 122 341	6 318 609 442	6 304 761 101
Total en-route Service Units		98 066 532	100 498 232	104 906 871	108 359 738	111 461 030	114 964 695
Real en-route unit costs per Service Units - (in EUR2009)		**63.71**	**60.37**	**58.76**	**57.75**	**56.69**	**54.84**
SES States - Actual data from June 2015 Reporting Tables		**2009A**	**2010A**	**2011A**	**2012A**	**2013A**	**2014A**
Real en-route costs - (in EUR2009)		6 247 946 111	6 069 483 962	5 971 774 986	6 047 812 097	5 947 919 729	5 945 539 166
Total en-route Service Units		98 066 532	100 486 603	105 044 077	103 501 763	105 171 670	109 836 771
Real en-route unit costs per Service Units - (in EUR2009)		**63.71**	**60.40**	**56.85**	**58.43**	**56.55**	**54.13**
Difference between Actuals and Planned in absolute value and in percentage (Actuals vs. NPP)					**2012**	**2013**	**2014**
Real en-route costs - (in EUR2009)	in value				-210 310 244	-370 689 713	-359 221 935
	in %				-3.4%	-5.9%	-5.7%
Total en-route Service Units	in value				-4 857 975	-6 289 360	-5 127 924
	in %				-4.5%	-5.6%	-4.5%
Real en-route unit costs per Service Units - (in EUR2009)	in value				**0.68**	**-0.13**	**-0.71**
	in %				**1.2%**	**-0.2%**	**-1.3%**

En-route unit costs in 2014 (actual vs. NPP)

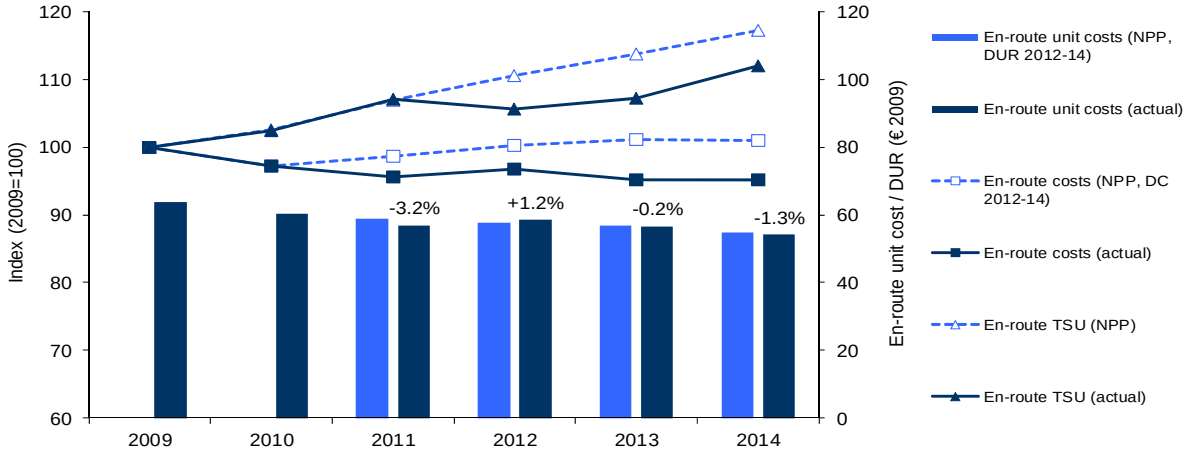


Figure 29: En-route unit costs (actual vs. National Performance Plans)[6]

5.2.3 These results confirm that the Performance Scheme for the cost-efficiency KPA is working as expected with ATSPs taking actions to reduce their costs in response to lower than planned traffic demand (TSUs) so as to preserve (or even increase) their economic surplus (see sub-section 5.6 below).

5.2.4 In 2014, in 19 States/Charging zones (CZs) actual traffic was lower than planned (especially Spain Canarias -16.9%, Finland -15.3%, Spain Continental -11.1%, and Austria -10.2%). Of these 19 States/Charging Zones, ten managed to reduce their costs by more than the fall in planned revenue, so that the actual unit costs were lower than planned. From this group, the largest reductions in unit costs against plans were achieved by Denmark (-4.12 €$_{2009}$), Ireland (-3.71 €$_{2009}$), Belgium/Luxembourg (-3.49 €$_{2009}$) and Sweden (-3.45 €$_{2009}$). The largest increases in the actual unit costs against the DUR adopted in the NPPs were in Spain Canarias (+7.14 €$_{2009}$), Germany (+5.31 €$_{2009}$), Italy (+5.29 €$_{2009}$) and Finland (+5.23 €$_{2009}$). Although cost reductions were achieved in these four States/Charging Zones, they were not sufficient to compensate for the reduction in en-route TSUs.

5.2.5 In ten States/Charging zones, actual traffic was higher than planned (especially Bulgaria +29.5%, Norway +20.5%, and Malta +19.8%). All ten States achieved actual unit costs in 2014 lower than planned as they kept any increases in costs to less than the increase in revenue. For example, although the actual traffic in Bulgaria was +29.5% higher than planned, actual costs were only +1.4% above planned, leading to an actual unit cost -7.52 €$_{2009}$ lower than planned.

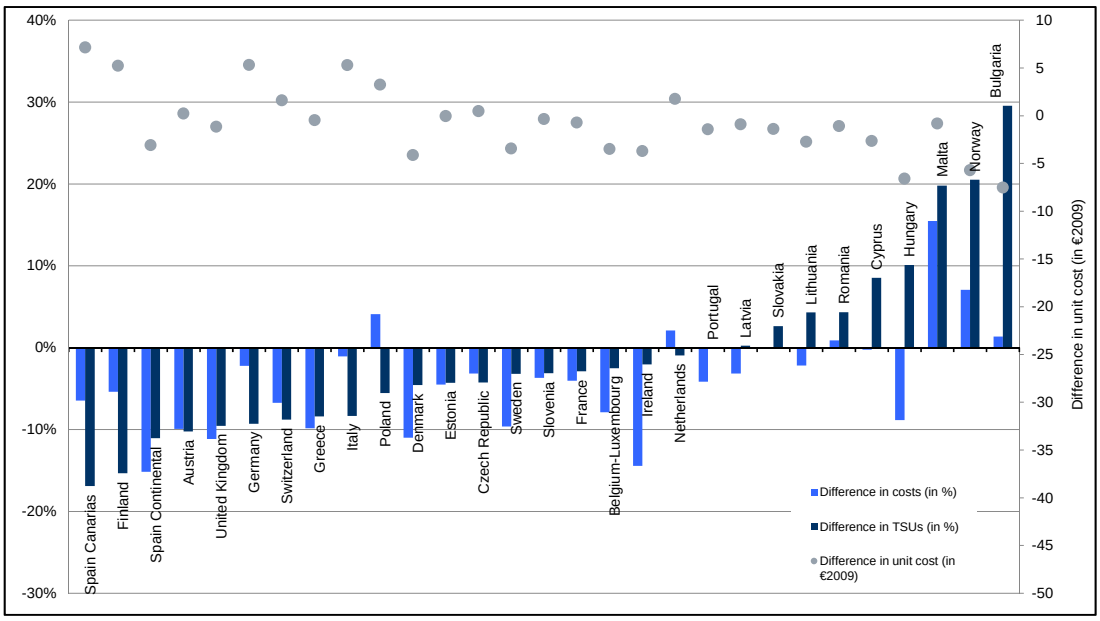


Figure 30: 2014 actual unit costs and service units vs. NPP by charging zone

5.3 Actual 2014 traffic vs TSUs in adopted Performance Plans (NPPs)

5.3.1 In 2014, Union-wide TSUs were -4.5% lower than planned in the adopted NPPs (i.e. within the ±10% alert threshold). At State level: Spain (Canarias & Continental), Finland and Austria exceeded the -10% threshold (see Chapter 6), while four States (Bulgaria, Norway, Malta and Hungary) experienced a traffic increase above the +10% threshold.

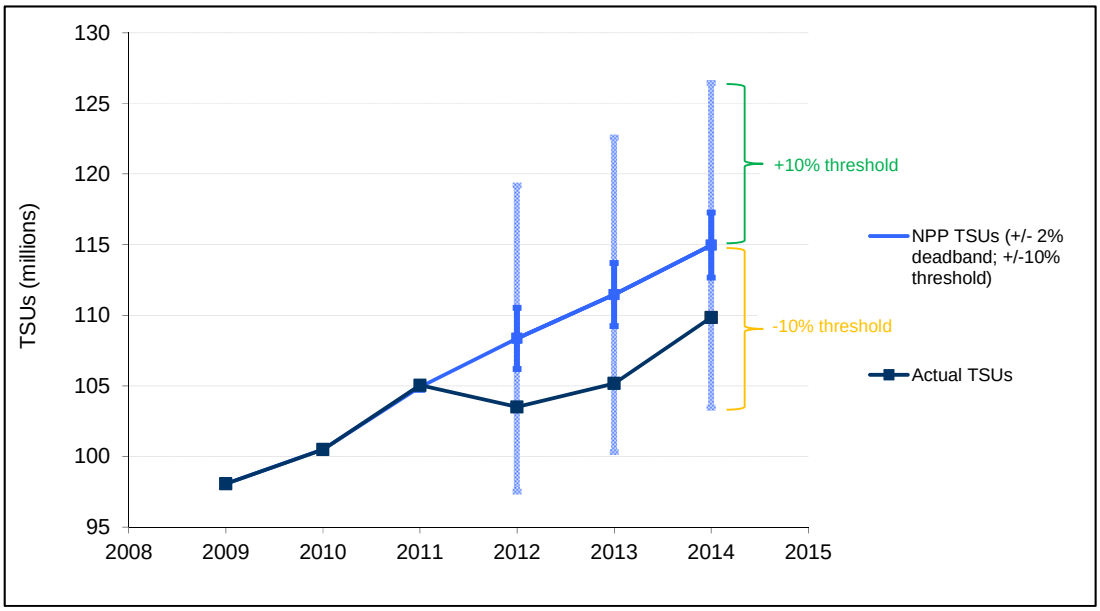


Figure 31: En-route traffic monitoring (Actual 2012-2014 TSU compared to NPP)

5.3.2 The traffic risk-sharing arrangements provided in the SES charging Regulation[7] 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 32 below) as follows:

- For a difference in TSUs falling within the dead band of ± 2%, the additional (or lost) revenue in respect of ATSP DCs is fully retained by the ATSP concerned. Note that Spain has invoked the application of Article 2 of EU Regulation 1191/2010 amending the charging Regulation 1794/2006 and has applied the exemption of the dead band for ENAIRE traffic risk-sharing. The application of this exemption and the Spanish interpretation of this article have not been approved and are under review by the European Commission at the time of drafting this report.
- For a difference in TSUs falling outside the threshold of ± 10%, the additional (or lost) revenue in respect of ATSP DCs is fully reimbursed (or charged) to the airspace users;
- For a difference in TSUs falling between the dead band of ± 2% and the threshold of ±10%, the additional (or lost) revenue in respect of ATSP DCs is shared between the ATSPs (30%) and the airspace users (70%).

5.3.3 The DCs of the other entities such as States/NSAs/EUROCONTROL and MET 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.

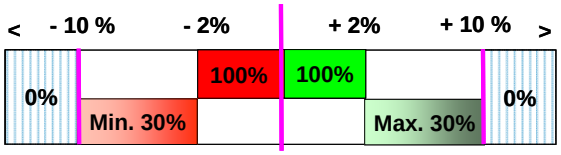


Figure 32: Traffic risk-sharing mechanism for the ATSPs

5.3.4 The net loss of revenues, due to the lower than planned traffic in 2014, amounts to 343.7 M€$_{2009}$.

5.3.5 As a result of the traffic risk-sharing arrangements, States/ATSPs bear 39.3% of the loss (135.2 M€$_{2009}$) and airspace users 43.8% (150.4 M€$_{2009}$) of the costs that are subject to traffic risk sharing. Additionally airspace users bear 16.9% (58.1 M€$_{2009}$) which relates to costs not subject to traffic risk-sharing as described in §5.3.3.

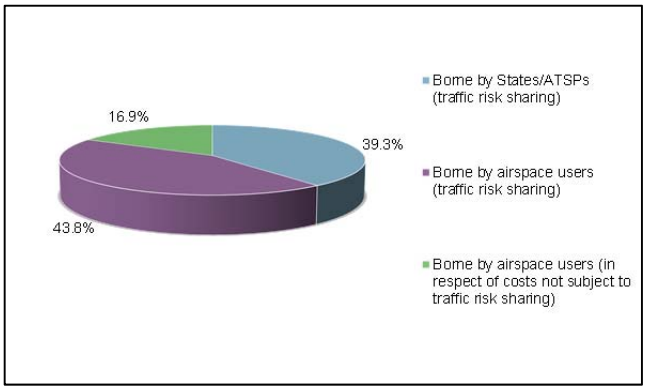


Figure 33: Outcome of 2014 traffic risk-sharing arrangements

5.4 Actual 2014 en-route costs vs. costs in adopted NPPs

5.4.1 At Union-wide level, total actual en-route costs in 2014 were -359.2 M€$_{2009}$ lower than planned (see Figure 29). Figure 30 above shows that in response to the lower than expected traffic levels, 23 of the 29 States/CZs were able to reduce their 2014 actual costs compared to the DCs adopted in their NPPs. The largest cost reductions compared to the adopted NPP are in Spain Continental (-15.2%) followed by Ireland (-14.4%), United Kingdom (-11.1%) and Denmark (-11.0%).

5.4.2 Figure 34 below shows the distribution of the difference between the actual costs and the planned DCs (-359.2 M€$_{2009}$ in 2014) categorised by entity at Union-wide state level and by nature at Union-wide ATSP level.

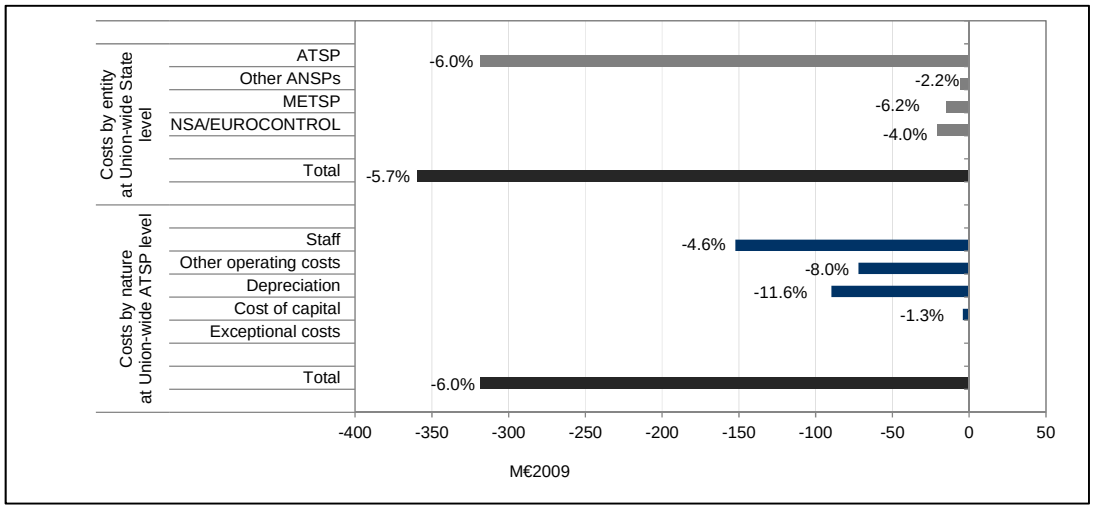


Figure 34: Breakdown of 2014 actual en-route costs compared to NPPs (by entity at Union-wide State level and by nature at Union-wide ATSP level)

5.4.3 While all entities have contributed to reducing costs, the bulk of the reduction

(-6.0%) is attributable to the main en-route ATSPs (i.e. the main designated ATSP subject to traffic risk-sharing arrangements). Figure 34 also indicates that savings were achieved by the MET service providers (-6.2%) and by the States/NSAs, including EUROCONTROL Agency costs (-4.0%).

5.4.4 71% (-224.4 M€$_{2009}$) of the cost savings achieved by ATSPs in 2014 relate to reductions in staff costs (-4.6%) and other operating costs (-8.0%) categories.

5.4.5 Depreciation costs are also significantly lower than planned in the NPPs (-11.6%). As in 2012 and 2013, NSA monitoring reports for 2014 explain that this is mainly due to the postponement of capital expenditures (CAPEX) to future years. This reflects, in some cases, an adjustment to the lower than expected traffic volumes for the RP1 period (-4.9% TSUs) but also temporary delays which are due to technical issues. At this stage, it is not clear whether some investment plans (and associated depreciation costs) presented in the RP1 NPPs might have been overestimated (see Volume 3 - Report on Capital Expenditure 2014). The unit rates charged to airspace users include the planned depreciation costs and cost of capital. It is therefore important that NSAs ensure that airspace users do not pay again in RP2 for the CAPEX projects already charged for in RP1 in cases where these projects were postponed.

5.4.6 The cost-sharing mechanism in the SES Regulations provides that, except for costs exempt from this mechanism (see below), the difference between the DCs set in the adopted NPPs and the actual costs for the year shall be retained by the States/ATSPs. Hence, the difference between the DCs and the actual costs for 2014 (359.2 M€$_{2009}$) will be retained by the States/ATSPs as a gain (see Figure 34 above).

5.4.7 The costs exempt from cost-sharing are taken into account in the calculation of the ATSP net gain for the 2014 en-route activity that is presented in sub-section 5.5 below. At the time of writing, final figures for the costs that will be reported for exemption in 2014 and allowed by the Commission are not known. Current estimates are that these costs will be relatively low and so do not change the overall conclusions. The PRB is preparing a separate report containing its advice on States' RP1 (2012-2014) exempted costs.

5.5 ATSP net gain for the 2014 en-route activity

5.5.1 The analysis of the overall economic surplus generated from the en-route activity by an ATSP[8] can be broken down in two main elements:

- the net ATSP gain/loss on en-route activity; and,
- the estimated surplus embedded in the cost of capital.

5.5.2 Sub-section 5.5 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 quality of service generated during the year. An analysis of the overall economic surplus, including the estimated surplus embedded in the cost of capital is provided in sub-section 5.6.

5.5.3 The (main) en-route ATSP is the most significant contributor to a State's en-route costs (around 84% 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 2014. 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.

5.5.4 The analysis of the ATSPs' results in 2014 shows that, at Union-wide level, the (main) ATSPs of the SES States have generated a net gain for the en-route activity

of +183.6 M€$_{2009}$ (see bottom of Figure 35 below), provided that the reported exemptions from cost-sharing are allowed by the Commission.

5.5.5 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 +308.1 M€$_{2009}$, corresponding to the difference between actual 2014 costs and the determined costs from the adopted NPPs for the (main) ATSPs, and claimed costs exempt from cost-sharing;
- a net loss resulting from the traffic risk-sharing mechanism of -135.2 M€$_{2009}$ for the (main) ATSPs; and
- a net gain resulting from the financial incentive mechanism for the capacity KPI, amounting to +10.7 M€$_{2009}$ (+7.3 M€$_{2009}$ for ENAV, +5.5 M€$_{2009}$ for NATS and -2.2 M€$_{2009}$ for Hungarocontrol[9]).

Cost sharing ('000€2009)	2014A
Determined costs for the ATSP (NPP)	5 305 652
Actual costs for the ATSP	4 999 315
Difference in costs: gain (+)/Loss (-) retained/borne by the ATSP	306 336
Amounts excluded from cost sharing to be recovered from (+) reimbursed to (-) users	1 755
Gain (+)/Loss (-) to be retained by the ATSP in respect of cost sharing	308 092

Traffic risk sharing ('000€2009)	2014A
Difference in total service units (actual vs NPP)	-4.46%
Determined costs after deduction of costs for exempted VFR flights	5 315 406
ATSP gain (traffic between 0 and +2% higher than NPP)	9 435
ATSP gain (traffic between +2% and +10% higher than NPP)	7 608
ATSP loss (traffic between 0 and -2% below NPP)	-81 198
ATSP loss (traffic between -2% and -10% below NPP)	-71 016
Gain (+)/Loss (-) to be retained by the ATSP in respect of traffic risk sharing	-135 171

Incentives ('000€2009)	2014A
ATSP bonus (+) / penalty (-)	10 672
Gain (+)/Loss (-) to be retained by the ATSP in respect of incentives	10 672

Net ATSP gain(+)/loss(-) on en-route activity	183 593

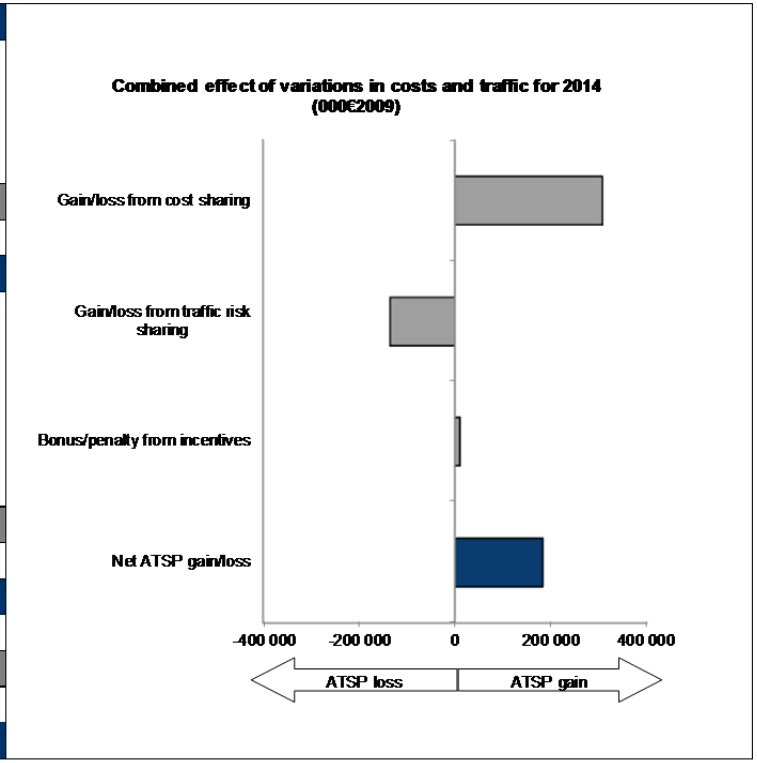


Figure 35: Net gain/loss on 2014 en-route activity for the (main) ATSPs

5.6 ATSPs actual 2014 overall economic surplus vs. Performance Plans

5.6.1 This analysis estimates the "economic surplus", comprising the net ATSP gain/loss on en-route activity (see sub-section 5.5 above), and the surplus embedded in the cost of capital. Economic surplus is a useful tool to monitor the financial strength of the ATSPs.

5.6.2 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.

5.6.3 During the Ad hoc Single Sky Committee of 24 October 2014 some States requested further clarification on the economic surplus calculation presented in the PRB Monitoring reports. Accordingly, the PRB provided an information paper on this subject at the SSC55 in January 2015. Some States have expressed reservations since the estimated surplus is calculated assuming that the eligible under-recoveries due to traffic shortfall will be charged to users in future years, and this may not be the case for some States, for example Spain (see also §5.6.11(v) below).

5.6.4 The overall economic surplus expressed as a percentage of the en-route revenues[10] is not directly comparable to the profit margin that would be calculated from ATSPs' financial statements. Furthermore, due to some inconsistencies in the data reported by a few ATSPs, the surplus analysis developed by the PRB is based on certain assumptions (in particular for the share of equity and debt used to calculate the weighted average cost of capital).

5.6.5 Based on the information reported by the States, the surplus embedded in the cost of capital in the planning phase is estimated at 222.5 M€$_{2009}$ for the 28 main ATSPs, based on a Union-wide level planned asset base of 6,258 M€$_{2009}$, of which on average 56% is financed through equity at an average (pre-tax) RoE rate of 6.4%.

5.6.6 However, when estimating the surplus embedded in the actual cost of capital (251.3 M€$_{2009}$ based on an actual asset base of 6,283 M€$_{2009}$ and an actual share of financing through equity of 59%) and adding the net gain/loss generated in respect of the en-route activity in 2014 (see sub-section 5.5 above), the PRB computes that the actual Union-wide overall surplus for 2014 amounts to some 434.9 M€$_{2009}$ (see column 2014A in Figure 36 below).

5.6.7 When expressed as a percentage of the en-route revenues[10], the actual Union-wide overall surplus reaches 8.4%, which is higher than planned in the NPPs (4.2%). This corresponds to a (weighted average) ex-post actual RoE of 11.8%, which is also higher than planned in the NPPs (6.4%).

5.6.8 The actual overall surplus includes the reported exemptions from cost-sharing (i.e. 1.8 M€$_{2009}$) within the ATSP net gain/loss generated in respect of the en-route activity in 2014. If these exemptions are not allowed by the Commission, the actual estimated surplus would be slightly lower (i.e. 433.1 M€$_{2009}$ of the en-route revenues, compared to 434.9 M€$_{2009}$ if exemptions are allowed).

ATSP estimated surplus ('000€2009)	2012P	2012A	2013P	2013A	2014P	2014A
Total asset base	6 315 471	6 154 400	6 331 904	6 207 755	6 258 276	6 282 816
Estimated proportion of financing through equity (in %)	55.0%	59.9%	55.4%	59.2%	55.9%	58.8%
Estimated proportion of financing through equity (in value)	3 476 104	3 689 519	3 507 753	3 676 298	3 497 649	3 693 342
Estimated proportion of financing through debt (in %)	45.0%	40.1%	44.6%	40.8%	44.1%	41.2%
Estimated proportion of financing through debt (in value)	2 839 366	2 464 881	2 824 151	2 531 457	2 760 627	2 589 475
Cost of capital pre-tax (in value)	330 433	333 526	334 047	319 084	326 225	331 265
Average interest on debt (in %)	3.8%	3.6%	3.8%	2.9%	3.8%	3.1%
Interest on debt (in value)	106 872	87 959	106 719	72 735	103 789	79 676
Determined RoE pre-tax rate (in %)	6.4%	6.7%	6.5%	6.7%	6.4%	6.8%
Estimated surplus embedded in the cost of capital for en-route (in value)	223 650	245 580	227 419	246 369	222 517	251 273
Net ATSP gain(+)/loss(-) on en-route activity	-	87 810	-	165 039	-	183 593
Estimated surplus (+/-) for the en-route activity	**223 650**	**333 390**	**227 419**	**411 408**	**222 517**	**434 866**
Revenue/costs for the en-route activity	**5 254 052**	**5 182 055**	**5 319 957**	**5 182 462**	**5 305 652**	**5 182 908**
Estimated surplus (+/-) in percent of en-route revenue/costs	**4.3%**	**6.4%**	**4.3%**	**7.9%**	**4.2%**	**8.4%**
Estimated ex-post RoE pre-tax rate (in %)	**6.4%**	**9.0%**	**6.5%**	**11.2%**	**6.4%**	**11.8%**

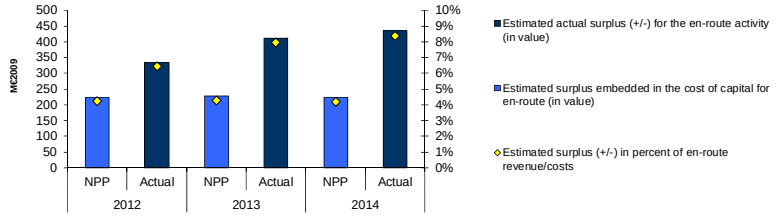


Figure 36: Estimated surplus for en-route activity for the (main) ATSPs at Union-wide level

5.6.9 This is an important result since it indicates that in 2014, for a third consecutive year, at Union-wide level, ATSPs succeeded in retaining their (ex-ante) surplus and even increasing it substantially, in a context of significantly lower traffic levels than planned.

5.6.10 The situation differs at individual ATSP level across the States, as shown in Figure 37 below, depending on the surplus embedded in the determined cost of capital and the net loss (or gain) resulting from the cost and traffic risk-sharing arrangements. Figure 37 shows that 20 of the 28 main ATSPs have succeeded in increasing their surplus in 2014 in percentage terms compared to the NPPs.

5.6.11 Figure 37 also shows that four ATSPs (LFV, LVNL, PANSA and MATS) have incurred losses and show a negative actual estimated surplus in 2014.

(i) For LFV, in 2014 the overall estimated surplus is negative by a small amount (-0.1% of the en-route revenues/costs). The surplus embedded in the cost of capital (+3.3 M€$_{2009}$) and the gain to be retained by the ATSP in respect of cost sharing (+0.4 M€$_{2009}$) were not quite sufficient to cover the losses arising from the traffic risk sharing (-3.8 M€$_{2009}$). LFV reported negative costs exempted from cost sharing (relating to pensions) amounting to -23.1 M€$_{2009}$. If allowed by the Commission, these costs will be returned to airspace users in the following reference period(s). Without this, LFV's estimated surplus for 2014 would be 15.9% of en-route revenues.

(ii) In 2014, LVNL actual costs were higher than planned (+8.0% in real terms) while traffic was lower than planned (-1.0%). Taking into account the claimed costs exempt from cost sharing, LVNL generated a net loss of -5.0 M€$_{2009}$ on en-route activity, some 4.6% of the en-route revenues for 2014. This is the third consecutive year that LVNL has incurred a loss on en-route activity. It is important to note that before RP1, LVNL was fully financed through debt and did not have any equity. Therefore there was no return on equity embedded in LVNL determined cost of capital. In order to enable LVNL to cope with the traffic risk sharing arrangements while preserving its financial strength, a mechanism was established to progressively build up equity capital over RP1. Further information on this mechanism can be

found in the PRB monitoring report for FABEC.

(iii) For PANSA, the overall estimated surplus in 2014 is negative at -6.9% of en-route revenues/costs. PANSA actual costs were +3.9% higher than planned, generating a loss of -4.7 M€$_{2009}$ in respect of cost sharing and traffic was -5.5% lower than planned, resulting in a loss of -3.8 M€$_{2009}$ in respect of traffic risk sharing. The surplus embedded in the cost of capital amounted to +0.4 M€$_{2009,}$ which was not sufficient to cover the losses. This embedded surplus was much lower than in 2012 and 2013 (3.9 M€$_{2009}$ and 4.1 M€$_{2009}$, respectively) due to a lower return on equity (0.3% in 2014, compared to 3.5% in 2012 and 2013).

(iv) For MATS, the overall estimated surplus in 2014 is negative at -7.5% of en-route revenues/costs. MATS actual costs were +15.3% higher than planned, due to higher staff costs and capital-related costs, generating a loss of -1.9 M€$_{2009.}$ in respect of cost sharing. Traffic was +19.8% higher than foreseen due to the closure of Libyan airspace and diversion of flights through Maltese airspace in the first half of 2014. This resulted in a gain of +0.6 M€$_{2009}$ in respect of traffic risk sharing. However the surplus embedded in the cost of capital (+0.4 M€$_{2009}$) was not sufficient to cover the losses arising from higher costs.

(v) As mentioned in 5.3.2 above, Spain applied the exemption from the dead-band for ENAIRE traffic risk sharing. Thus any gains/losses in the dead-band range are not shared and are allocated 100% to users. As a result the loss of -15.1 M€$_{2009}$ of the traffic risk sharing mechanism for Spain in 2014 is lower, and therefore impacts positively on ENAIRE's overall estimated surplus of +111.6 M€$_{2009}$. However, Spain has indicated that their entitlement positive under-recoveries generated due to traffic risk sharing mechanism, now foreseen to be recovered in the last 2 years of RP2 and in RP3, based on the June 2015 Reporting tables, may not be finally charged to users in future years. If this is finally the case, the genuine value of the economic surplus over RP1 would significantly lower.

5.6.12 For completeness, the estimated surplus of the main ATSPs for each year of RP1 is shown in Annex II: Estimated economic surplus for the en-route activity for the main ATSPs. A detailed analysis at State/Charging zone level and for each (main) ATSP is provided in the companion Volume 2.

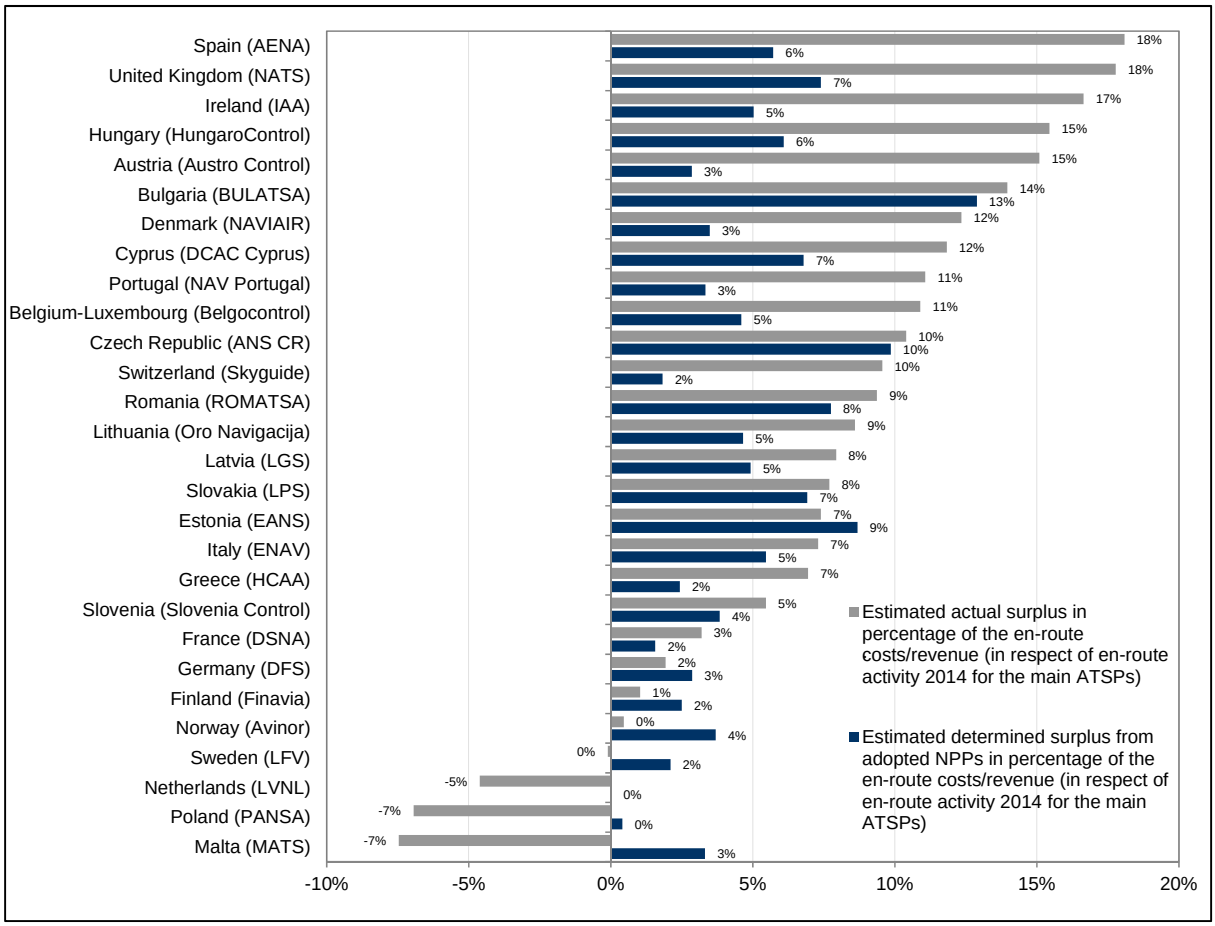


Figure 37: Estimated surplus for the 2014 en-route activity for the main ATSPs

5.7 Union-wide 2014 actual costs and unit cost for users ("True en-route costs for users")

5.7.1 This sub-section analyses the actual en-route unit cost for airspace users in respect of ANS activities in 2014 (also referred to as the "true cost for users"). Note that the "true cost" for users is different from the cost **charged** during RP1 due to the adjustments foreseen in the performance[4] and charging[7] Regulations.

5.7.2 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 2014 which comprise:

- the amounts that have already been charged to the users through the 2014 unit rates, and;
- the different adjustments relating to 2014 activities which will be charged or reimbursed to users in future years.

5.7.4 Annex IV: Union-wide 2014 actual costs and unit cost for users (“True en-route costs for users”)Table 30 (in Annex IV, p.89) presents more detailed information on the calculation of the figures discussed below. It should be noted that the PRB computation of the “true costs” for users does not comprise 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.

5.7.5 The amount relating to the 2014 activities which has already been charged through the 2014 unit rate is 5,955.5 M€$_{2009}$. It corresponds to the DCs (after deduction of costs for exempted VFR and of other revenues) that have been billed in 2014 according to the actual traffic.

5.7.6 The additional amount relating to the 2014 activities which will be billed to users through future years' unit rates is +160.5 M€$_{2009}$ and is broken down as follows:

- inflation adjustment: -48.9 M€$_{2009}$;
- adjustments resulting from the implementation of traffic risk-sharing (ATSP): +150.4 M€$_{2009}$;
- adjustments resulting from the difference in traffic (for costs not subject to traffic risk-sharing): +58.1 M€$_{2009}$;
- bonuses and penalties arising from incentives: +10.7 M€$_{2009}$;
- the net amount of costs exempt from cost-sharing (if deemed eligible by EC): -9.7 M€$_{2009}$.

5.7.7 The main driver for the adjustments to be billed to users is related to the traffic shortfall in 2014 compared to what was planned in the NPP (actual TSUs were -4.5% lower than planned).

5.7.8 As a result, the "true costs" for users for 2014 are estimated at 6,115.9 M€2009, which is -129.8 M€2009 (or -2.1%) lower than the amounts that were forecasted to be charged for 2014 activities on the basis of the RP1 PPs (6,245.7 M€2009,). Based on the actual traffic, it is computed that the actual unit cost incurred by users for the en-route activity in 2014 is 55.68 €2009 (see Annex IV: Union-wide 2014 actual costs and unit cost for users ("True en-route costs for users") for details).

5.7.9 So, while States/ATSPs collectively reduced their 2014 costs in line with lower revenues and managed to increase their economic surplus, airspace users will end up incurring a higher actual unit cost (55.68 €$_{2009}$) than the one incurred by the States (54.13 €$_{2009}$, see Figure 29 above).

5.8 Presentation of the terminal ANS (TANS) cost-efficiency PI

5.8.1 Under the cost-efficiency KPA, TANS costs and unit rates for RP1 are to be monitored. The aggregation of the TANS costs from the NPPs is shown in Table 17 below. Due to the non-uniform application of the formula for calculating the terminal unit rates before the charging Regulation[7] requirements for 2015, it is not possible to provide an aggregation or consolidation of a Union-wide unit cost for TANS services.

SES States - Data from RP1 national performance plans	2012P	2013P	2014P
Real terminal ANS costs - (in EUR2009)	1 476 675 685	1 469 589 294	1 475 519 179

Table 17: TANS cost-efficiency performance indicator for RP1

5.9 Actual 2014 TANS costs vs. forecast in adopted NPPs

SES States - Data from RP1 national performance plans		2012P	2013P	2014P
Real terminal ANS costs - (in EUR2009)		1 476 675 685	1 469 589 294	1 475 519 179
SES - Actual data from June 2015 Reporting Tables		**2012A**	**2013A**	**2014A**
Real terminal ANS costs - (in EUR2009)		1 395 162 571	1 343 328 825	1 348 795 857
Difference between Actuals and Planned in absolute value and in percentage (Actuals vs. NPP)		**2012**	**2013**	**2014**
Real terminal ANS costs - (in EUR2009)	in value	-81 513 114	-126 260 469	-126 723 322
	in%	-5.5%	-8.6%	-8.6%

Table 18: 2014 TANS actual costs vs. NPPs

5.9.1 In 2014, large savings were achieved in Spain (actual costs were -25.6 M€$_{2009}$ lower than forecast in the NPP), Italy (-23.7 M€$_{2009}$), the UK (-22.1 M€$_{2009}$), Germany (-12.7 M€$_{2009}$) and France (-12.1 M€$_{2009}$). A further 16 States achieved smaller savings in 2014.

5.9.2 Terminal ANS costs were higher than planned for seven States, with the largest deviations observed for Norway (+5.5 M€$_{2009}$) and Romania (+4.0 M€$_{2009}$). More details are provided in Figure 38 below.

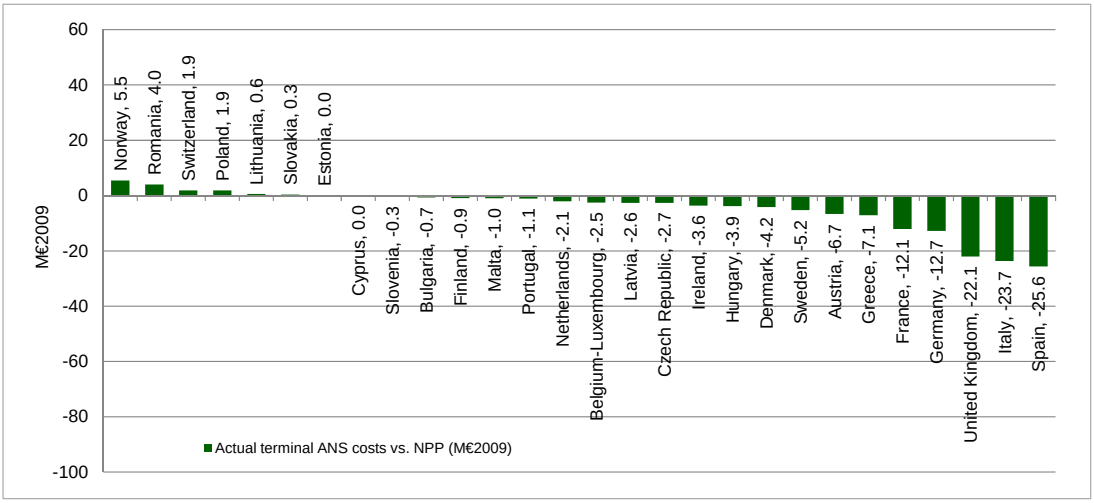


Figure 38: 2014 TANS actual costs vs. NPP at State level

5.10 Actual 2014 gate-to-gate ANS costs vs. forecast in adopted NPPs

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
Real terminal ANS costs - (in EUR2009)		1 476 675 685	1 469 589 294	1 475 519 179
Real gate-to-gate ANS costs - (in EUR2009)		**7 734 798 026**	**7 788 198 736**	**7 780 280 280**
Share of en-route costs in gate-to-gate ANS costs		**80.9%**	**81.1%**	**81.0%**
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	5 945 539 166
Real terminal ANS costs - (in EUR2009)		1 395 162 571	1 343 328 825	1 348 795 857
Real gate-to-gate ANS costs - (in EUR2009)		**7 442 974 668**	**7 291 248 553**	**7 294 335 024**
Share of en-route costs in gate-to-gate ANS costs		**81.3%**	**81.6%**	**81.5%**
Difference between Actuals and Planned in absolute value and in percentage (Actuals vs. NPP)		**2012**	**2013**	**2014**
Real gate-to-gate ANS costs - (in EUR2009)	in value	**-291 823 358**	**-496 950 182**	**-485 945 257**
	in%	**-3.8%**	**-6.4%**	**-6.2%**

Table 19: 2014 gate-to-gate ANS actual costs vs. NPPs

5.10.1 Total Union-wide gate-to-gate ANS costs in 2014 were -6.2% lower than the costs presented in the adopted NPPs (7,294 M€$_{2009}$ compared with 7,780 M€$_{2009}$). Actual 2014 en-route costs accounted for 81.5% of gate-to-gate ANS costs, a similar proportion to that foreseen in the NPPs (81.0%).

5.10.2 In other words, at Union-wide level, there was no evidence of an increasing share of TANS costs over RP1, given that these costs are not subject to the "DCs" method (except for France).

5.11 Review of 2013 Recommendations on the Cost-Efficiency[3]

5.11.1 Recommendation made in 2013: *"The PRB advised the EC to request the States to reconsider downwards the levels of Determined Costs in the early years of RP2 in the light of the actual performance achieved in 2013, for both the en-route and terminal charging zones".* In 2014, at the time of drawing up and consulting the RP2 PPs and associated targets, several States have reconsidered downwards their "starting point" level. This point was also carefully considered by the PRB during the assessment phase of the RP2 cost-efficiency targets in the second part of 2014, leading in several instances to specific recommendations for revision of the targets.

5.12 2014 observations for Cost-Efficiency

5.12.1 2014 was the third year of RP1 in which SES en-route ATSPs were subject to risk-sharing arrangements aimed at incentivising ATPSs' economic performance.

5.12.2 The results for 2014 confirm that the Performance Scheme is working as intended. In 2014, en-route traffic (Service Units) was -4.5% lower than planned. In response, States/ATSPs reduced their en-route costs by -5.7% or -359.2 M€$_{2009}$, the third successive year in which actual costs were lower than planned costs. This which resulted in a Union-wide actual unit cost of €54.13, -1.3% lower than in the adopted NPPs (€54.84) but 0.4% higher than the Union-wide target for 2014 of €53.92. Lower staff, operating and depreciation costs were the biggest contributors to the lower costs.

5.12.3 In 2014 most ATSPs maintained and even improved the economic surplus generated from the en-route activity. At Union-wide level, the overall economic surplus amounted to 434.9 M€$_{2009}$ which represents 8.4% of en-route revenue[10], compared to 4.2% planned in the NPPs.

5.12.4 In 2014, the "true costs" incurred by airspace users (taking account of adjustments to be billed in future years) are estimated to be 6,115.9 M€$_{2009,}$ which is lower than planned. However, based on the actual traffic, the airspace users will end up paying a higher unit cost (55.68 €$_{2009}$) than the 54.13 €$_{2009}$ incurred by the States. The difference mainly reflects traffic risk-sharing from the lower than planned traffic.

6 Capital expenditure (CAPEX)

6.1 Introduction

6.1.1 The analysis of ANSPs' investment has been performed on the basis of limited information collected from the Member States through the CAPEX part of the 2014 monitoring reports. Taking into account that all the ANSPs did not provide adequate investment information, the analysis cannot be considered to be exhaustive. Moreover, it does not validate the ANSPs individual investments, as this is a State/NSA responsibility. The actual 2014/RP1 CAPEX reported in June 2015 has been assessed against CAPEX planned in the adopted RP1 NPPs, while evaluating its coherence with the European ATM Master Plan.

6.1.2 The detailed review at EU, FAB and State levels was delivered to the Commission and has not been published at the time of writing this report.

7 Alert thresholds

7.1 Union-wide level

7.1.1 Article 18 of the performance Regulation (Regulation (EU) N° 691/2010) 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 new, unforeseeable circumstances occur that are both insurmountable and outside the control of the States, or when alert threshold(s) are reached at EU level.

7.1.2 If these cases occur, the following steps will be taken at Union-wide level: the Commission will review the situation in consultation with the States through the SSC and provide proposals for appropriate actions within three months, which may include the revision of the Union-wide performance targets and, in consequence, a revision of the national or FAB performance targets.

7.1.3 Two alert thresholds were defined in Commission Decision of 21 February 2011 (2011/121/EU) setting the Union-wide performance targets and alert thresholds for the provision of ANS for the years 2012-2014:

- a deviation over a calendar year by at least 10% of actual traffic expressed in en-route service units compared to a planned figure defined in the Commission Decision (114,610,000 in 2014) ("traffic alert threshold", applicable to all key performance indicators);
- a deviation over a calendar year by at least 10% of actual costs compared to determined costs with reference determined costs forecasted at Union-wide level in the Commission Decision (6,179 M€$_{2009}$ for 2014) ("cost alert threshold", applicable to the cost-efficiency indicator).

7.1.4 The PRB has assessed the 2014 traffic data and has concluded that the traffic alert threshold of ±10% has not been reached at Union-wide level. Actual en-route Service Units in 2014 were 109,836,771 i.e. -4.2% lower than the planned 2014 value in Article 3(1) of the Commission Decision (see Figure 39).

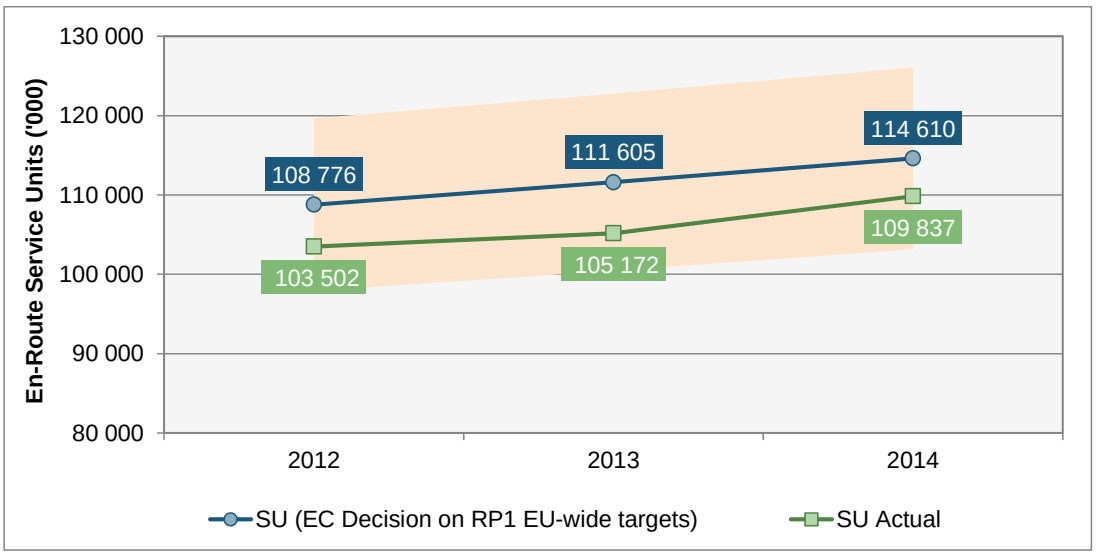


Figure 39: En-route service units at Union-wide level

7.1.5 The PRB has assessed the 2014 actual cost data reported by each State and has concluded that the cost alert threshold of ±10% has not been reached at Union-wide level. Actual en-route costs in 2014 were 5,946 M€$_{2009}$, i.e. -3.8% lower than the 2014 value in Article 3(1) of the Commission Decision (Figure 40).

7.1.6 Therefore, **neither** of the alert thresholds at Union-wide level was reached in 2014.

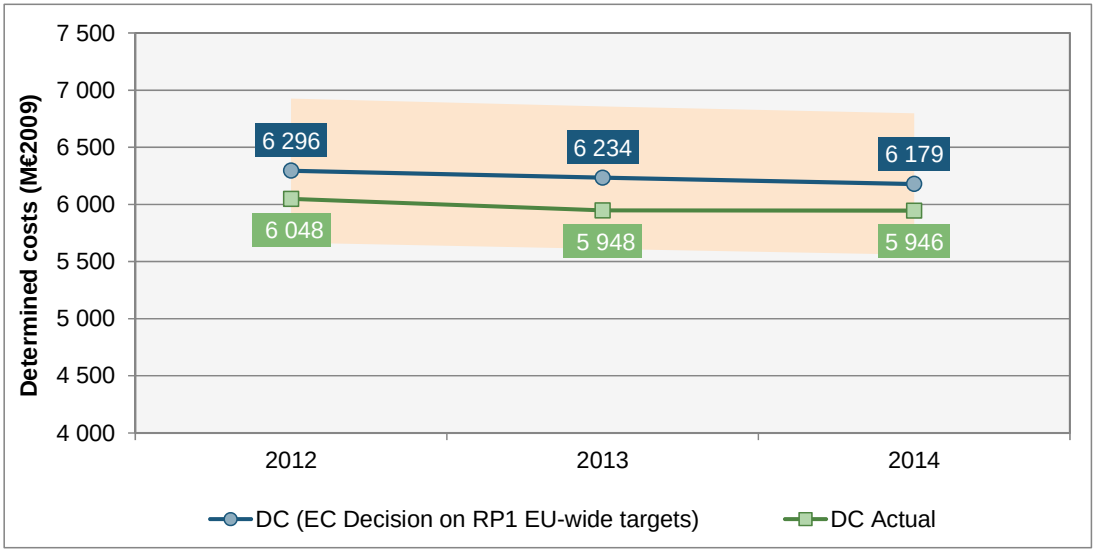


Figure 40: En-route determined costs and actual costs at Union-wide level

7.2 Local level

7.2.1 According to Article 18(3), 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.

7.2.2 So far, no States have reported specific alert thresholds therefore the same thresholds (±10%) apply at national (or FAB) level, as compared with the traffic and cost forecasts contained in each Performance Plan.

7.2.3 Figure 41 presents the proportional difference between actual and planned Service Units for each State in 2014.

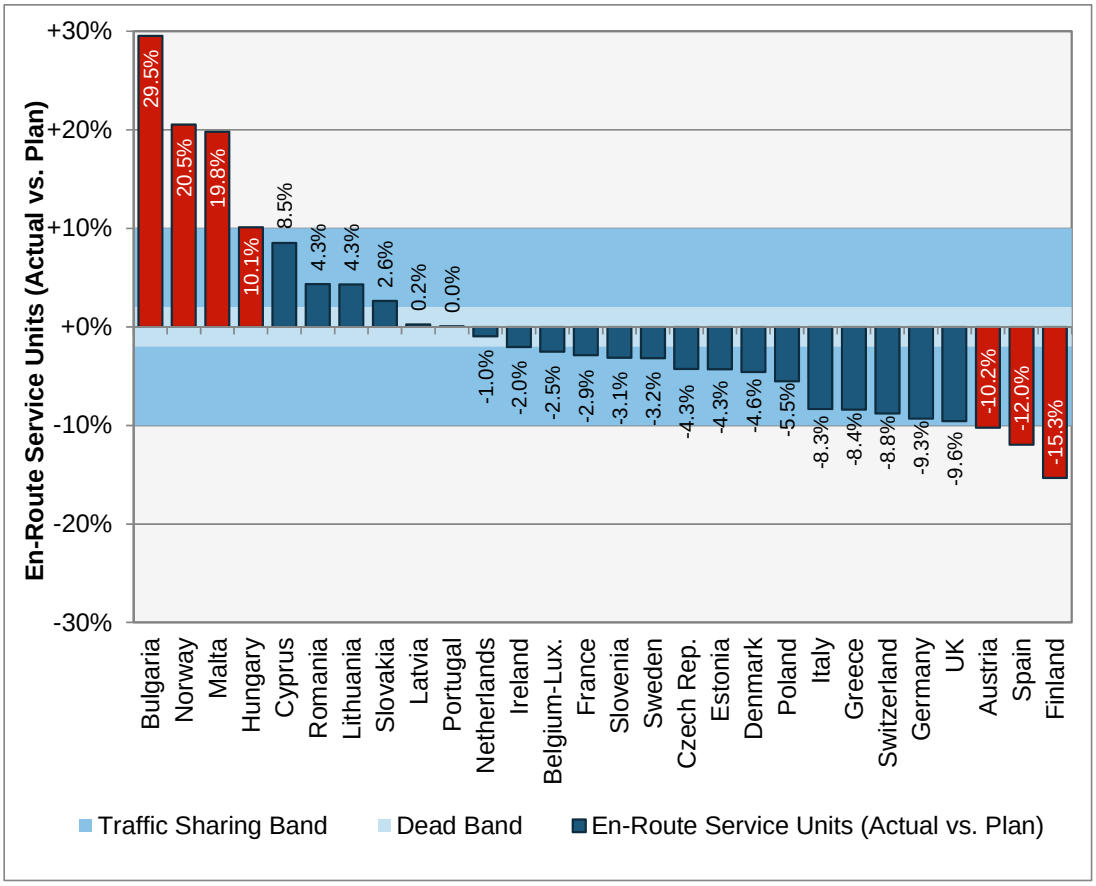


Figure 41: 2014 En-route actual Service Units versus NPP by State

7.2.4 Figure 41 shows that Bulgaria (+29.5%), Norway (+20.5%), Malta (+19.8), Hungary (+10.1%) experienced a traffic increase, in 2014, above the +10% threshold. Finland (-15.3%), Spain (-12.0%) and Austria (-10.2%) reached the traffic alert threshold with a decrease below -10%.

7.2.5 In line with Article 18(2) of the performance Regulation[4] and taking the considerations outlined above into account, the relevant NSAs have been invited to review the traffic situation by liaising with the Commission. Due to the fact that 2014 is the last year of RP1, in 2014 the planning activity was focused on RP2 and as a result none of them has proposed a revised RP1 NPP.

7.2.6 Figure 42 presents the proportional difference between actual and planned Determined Costs for each State in 2014 (expressed in €$_{2009}$).

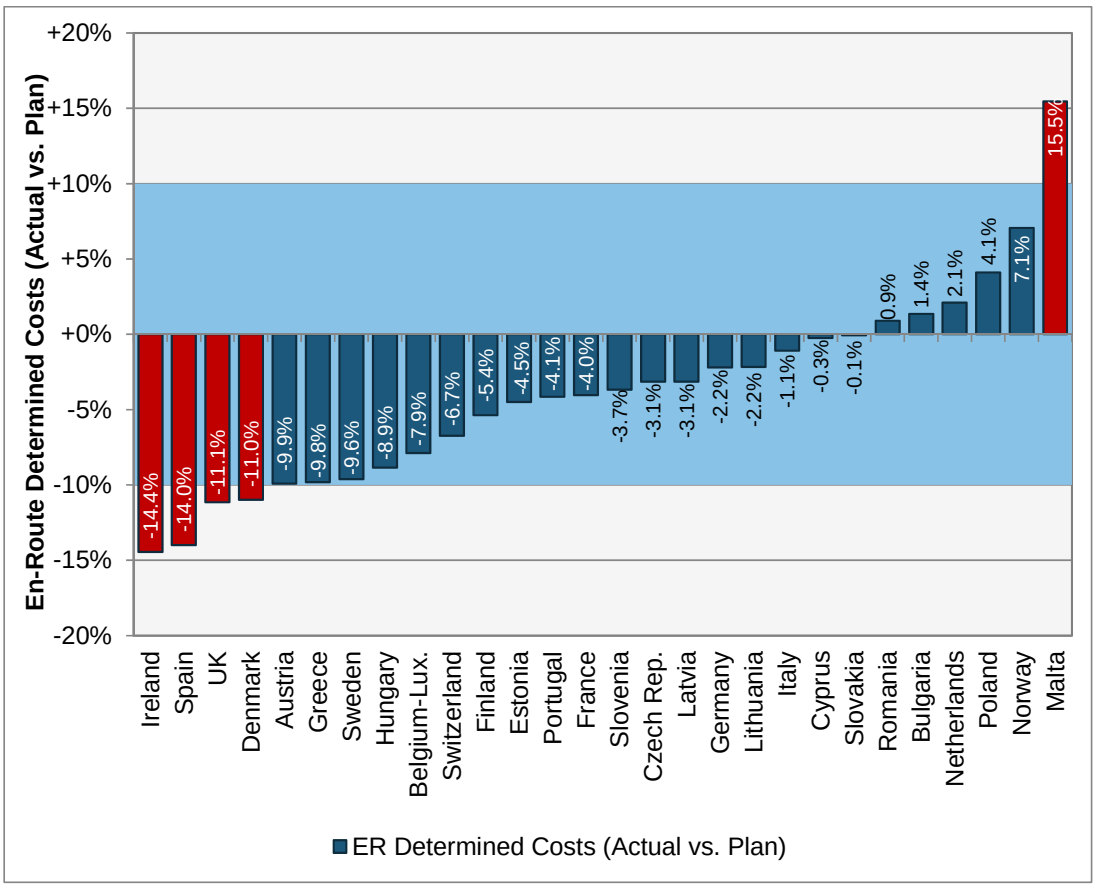


Figure 42: 2014 En-route actual costs versus determined costs by State

7.2.7 Ireland (-14.4%), Spain (-14.0%), United Kingdom (-11.1%), and Denmark (-11.0%) have lower costs that planned that exceeded the -10% threshold in 2014. On the other hand, Malta is above the +10% threshold i.e. +15.5% higher cost than planned.

7.2.8 For cost-efficiency, the PRB notes that the ±10% traffic alert threshold corresponds to the outer bands of the traffic risk-sharing mechanism defined in Article 11a of the charging Regulation (Commission Regulation (EC) No 1794/2006). Therefore, 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 Monitoring of performance over RP1 (2012-2014)

8.1 Background

8.1.1 The "Performance scheme" (PS) including performance targets and incentives was introduced by the second package of Single European Sky legislation (SES II) adopted by the European Parliament and the Council on 21 October 2009. The first Reference Period (RP1: 2012-2014) was implemented under Regulation (EU) 691/2010. This has now been replaced by Regulation (EU) 390/2013, which is applicable for the second Reference Period (RP2: 2015-2019).

8.2 Goals of the SES II Performance Scheme

8.2.1 The stated objectives of the SES Performance Scheme are to "contribute to the sustainable development of the air transport system by improving overall efficiency of the air navigation services across the key performance areas of safety, environment, capacity and cost-efficiency, in consistency with those identified in the Performance Framework of the ATM Master Plan, all having regard to the overriding safety objectives. The main goal[11] was to drive ANS performance towards greater efficiency while ensuring safety and minimising:

- unnecessary costs to implement the Performance Scheme;
- unintended consequences and undesired behaviours resulting from inappropriate application of the Performance Scheme;
- regulatory risks (e.g. uncertainty about outcomes, proliferation of different models leading to less transparency, more complexity for users and EC/PRB);
- the burden on NSAs, given likely low capabilities in the short run; and,
- the burden on airspace users to simultaneously engage in consultations.

8.2.2 The SES II Performance Scheme was also intended to be operationally and economically viable: costs for performance review have to be seen in the light of expected economic benefits for airspace users or passengers, and safety/environmental benefits to society.

8.3 Key Principles of the SES II Performance Scheme

8.3.1 The Performance Scheme was designed to be:

- Acceptable for stakeholders;
  - (i) Non-discriminatory among users
  - (ii) Fair allocation of risks between parties while taking business realities into account
- Transparent for stakeholders (local, regional and European levels);
- Able to drive ANSPs' behaviour (i.e. focus on main outcomes) so as to significantly improve performance at European and national/FAB levels;
- Simple to administer (compliance costs much lower than benefits);
- Workable (drive efficiency while considering business realities);
- Predictable and financially stable (i.e. limit uncertainty and regulatory risks)
- Predictable in terms of ANS unit charges for airspace users
- Provide a stable regulatory environment.

8.4 Overview of the first reference period of the Performance Scheme

8.4.1 RP1 is the first Reference Period in the implementation of the SES Performance Scheme and Charging scheme. *Considering the tight implementation schedule, the complex nature of the ANS system, the absence of prior experience and the magnitude of change for all stakeholders, RP1 can be considered as a transition and learning period, with more ambitious targets and stricter rules applying from RP2 onwards.*

8.4.2 The duration of RP1 was limited to three years, so as to limit the transition period while allowing sufficient time for targets and incentives to operate. This was a pragmatic decision. The experience gained in RP1 was used to update the performance Regulation[4] and to set the RP2 performance targets.

8.4.3 Performance targets set for RP1 were relatively ambitious considering the absence of prior experience. In a context of increasing traffic (some +15% forecast from 2009 to 2014), capacity was to improve even faster so as to reduce en-route ATFM delays below the best-ever achieved levels (target of 0.5 minute/flight in 2014), flight-efficiency was to improve faster than traffic so as to ensure carbon neutrality of ANS already during RP1[11], and costs were to be kept nearly unchanged, leading to a significant decrease in unit costs (some -13% vs. 2009).

8.4.4 In fact, RP1 started with a challenge. Instead of forecast growth, traffic dropped significantly in 2012 (-3%) and remained below plans over the duration of RP1, albeit within the alert threshold at EU level (±10%). This made it easier to reach the capacity target and ensure carbon neutrality of ANS, but much more difficult to meet the cost-efficiency targets. This was even more difficult as full cost recovery was replaced by determined costs and incentives for ANSPs to manage the traffic and costs risks. A key learning point is the need for ANS to be able to respond flexibly and efficiently to unforeseen events.

8.4.5 In this context, here are the main performance outcomes over RP1:

- There was no fatal accident with ANS contribution since 2011 in the SES area.
- En-route ATFM delay reached the best levels ever recorded in 2013 (0.53 minute per flight), although the target set for 2014 (0.5 minute per flight) was not achieved.
- The Flight-efficiency KPI improved slower than target (but faster than traffic).
- The cost-efficiency target for 2014 was outperformed compared to the adopted targets arising from the NPPs. Providers responded to lower revenue than planned arising from traffic downturn and cut their costs so as to maintain or improve their margins. *The risk sharing and incentive mechanism proved to work as intended.*

8.4.6 *Given the circumstances, both the regulatory framework and results achieved during RP1 can be considered as relatively satisfactory, even if not perfect.*

8.4.7 RP1 has provided a lot of experience, which should be used to further improve the Performance Scheme and Charging Regime, and drive European ANS performance much further, while minimising associated risks.

8.4.8 Much remains however to be done. At the consultation on SES strategy in May 2015, the Commission quoted the following key remaining issues:

- Opaqueness in safety;
- Fragmentation of ANS;
- Monopolies, little competition, oversight;

- High ANS unit cost;
- Lack of flexibility of labour intensive industry;
- Institutional, legal & decision making issues.

8.5 Safety KPA

OVERVIEW

8.5.1 Back in 2010 it was deemed that setting targets on safety in RP1 was premature and that a period of performance monitoring would be required first. A harmonised safety assessment mechanism had to be established in order to allow for a uniform basis for the assessment of ANS safety performance in Europe. Safety maturity and the application of just culture had to be ensured and harmonisation in the identification and classification of risk to be achieved, before an acceptable level of Safety could be set for the European system. RP1 was therefore always considered as a transitional period in the Performance Scheme with greater improvement expected in RP2 (introducing also target setting) and subsequent Reference Periods.

8.5.2 Nevertheless, progress made in safety performance so far in RP1 is noteworthy and good results were achieved during the period 2012-2014. However, there is still room for improving safety performance levels overall and hence specific safety targets are being set for RP2. These will help the change management process by identifying and managing safety risks through reporting and monitoring systems.

8.5.3 In terms of ANS-related accidents and serious incidents (lagging safety indicators), ANS safety performance improved over the past seven years, however, there has not been a measurable improvement (nor degradation) within the reference period itself. The negative effect of performance Regulation[4] on safety that was feared by some did not materialise.

8.5.4 The rate of ANS-contribution to accidents and serious incidents significantly decreased over the six year period and RP1, which could indicate that the ANS sector improved at managing risks that directly relate to the service provided.

8.5.5 Leading safety indicators show a continuous improvement over RP1 in the implementation of safety management (Figure 43) and in the application of the severity classification scheme for each type of three occurrences in the PS scope (Figure 44). In addition, the level of presence and corresponding level of absence of Just Culture at both States and ANSPs level shows constant improvement over RP1.

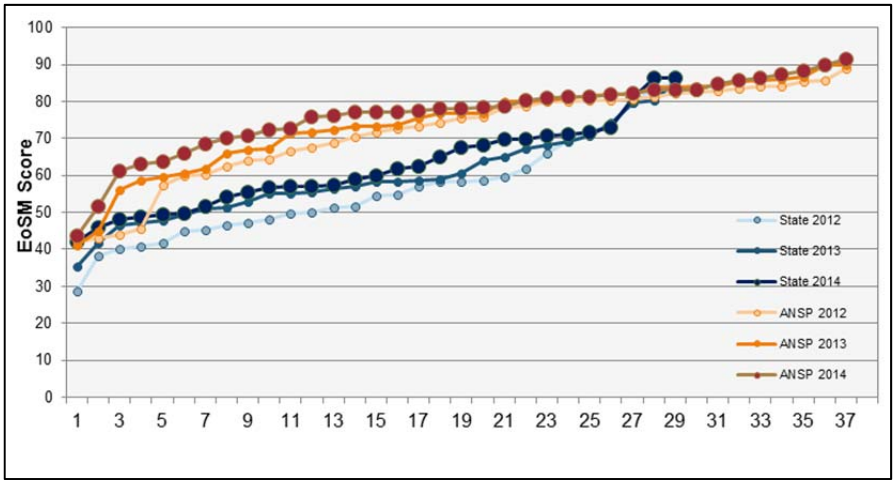


Figure 43: Effectiveness of Safety Management for States and ANSPs in RP1

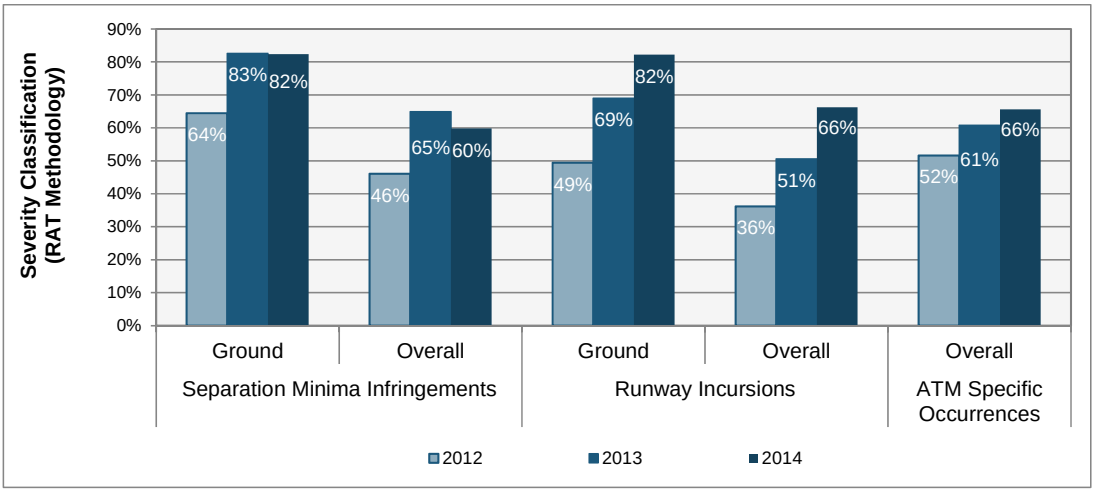


Figure 44: 2014 EU averages for severity assessment using RAT methodology

8.5.6 There were no Union-wide safety targets for RP1. However, in RP2 the Performance Scheme introduces Union-wide targets on safety for two safety indicators: Effectiveness of Safety Management and application of severity classification.

8.5.7 Based on information provided during the 2014 monitoring exercise and the introduction of the second metric for EoSM (EoSM Maturity Level) it is possible to give an overview of achievements in implementation of safety management, both at State and ANSP levels, in view of RP2 safety targets set for 2019.

8.5.8 Note: *The results of EoSM in RP2 will be measured both in terms of EoSM Maturity Score and in terms of Maturity Level. The Overall Score gives a high level overview of the organisation's SMS and it shows whether overall the State or service provider are mostly managing performance or it is still in the process of implementing the mandatory regulations and achieving the minimum standards of maturity. However, as this score may hide particular problems in certain areas as the methodology averages the scores by each of five EoSM safety Components (introducing a smoothing effect) and in order to identify whether the State or service provider still has a significant problem in at least one area (i.e. safety Component) the Maturity Level view is more appropriate.*

8.5.9 RP2 EoSM FAB results are calculated using EoSM minimum/lowest level achieved principle (lowest level achieved of each Component (both at the State and ANSP level) is calculated as the lowest level of all questions within that Component; similarly this principle is then also applied at FAB level – as the RP2 Union-wide targets for safety are set at FAB level)..

8.5.10 By applying the 'lowest level achieved' principle in scoring at FAB level it is expected to encourage the States and the ANSPs with lower score to achieve the higher scores within the FAB in order not to reduce the overall FAB score.

8.5.11 Two tables below show the current results of achieved FAB EoSM minimum/lowest levels for all States (based on self-assessment) and their ANSPs.

EoSM State level *(FAB EoSM minimum level achieved)*		Safety Policy	Risk Management	Safety Assurance	Safety Promotion	Safety Culture
2019 RP2 Targets		***C***	***C***	***C***	***C***	***C***
2014 Results	Baltic FAB	B	B	B	B	B
	Blue Med FAB	A	C	B	B	B
	DANUBE FAB	B	B	C	B	B
	DK-SE FAB	B	B	B	A	A
	FAB CE	A	B	A	A	A
	FABEC	A	A	A	A	B
	NEFAB	B	B	B	B	B
	SW FAB	A	A	B	A	B
	UK-IR FAB	C	C	D	C	B

Table 20: EoSM State level (end of RP1 vs RP2 targets)

EoSM ANSP level *(FAB EoSM minimum level achieved)*		Safety Policy	Risk Management	Safety Assurance	Safety Promotion	Safety Culture
2019 RP2 Targets		***D***	***D***	***D***	***D***	***C***
2014 Results	Baltic FAB	C	D	C	C	C
	Blue Med FAB	C	D	C	C	C
	DANUBE FAB	D	D	C	C	C
	DK-SE FAB*	D	C	D	C	D
	FAB CE*	C	D	C	C	C
	FABEC	B	D	C	C	C
	NEFAB	C	C	C	C	C
	SW FAB**	C	D	C	C	C
	UK-IR FAB*	D	D	D	C	D

Table 21: EoSM ANSP level (end of RP1 vs RP2 targets)

* calculated including only ANSPs that are within the scope of RP2 – as indicated in the FAB RP2 Performance Plans (more information provided in Volume 4)

** to be taken with caution as NAV Portugal did not provide results for 2014 and new ANSP within RP2 (Ferronats) was not monitored in RP1, hence results are not available.

8.5.12 The comparison of the current achievements (end of RP1) and the RP2 targets for application of severity classification using RAT methodology is not possible due to a different scope of the RAT application in RP1 and RP2 (i.e. minimum number of ATM movements criteria and reportable severity scope has been changed).

8.5.13 Overall, the PRB believes that safety performance is about managing risk - and feels that safety management systems, safety plans and safety cultures can still be significantly improved by national Just Culture programmes, as well as by Community-wide initiatives.

8.5.14 The PRB recognises that efforts will be required within most States and ANSPs during RP2 in order to reach safety targets. Safety should continue to have primacy and should never be compromised whilst trying to achieve a target in a different KPA.

RECOMMENDATIONS

8.5.15 Improvements are made in implementation of safety management at both the State and ANSP level, however States still show that their implementation of safety management principles are below that of ANSPs.

8.5.16 EASA audits only reaffirm the message that establishing strong safety oversight systems is a necessary first step to ensure the successful transition to improved safety management. Hence, safety strategies must have the ability to consider the varying maturity levels of State's safety oversight systems.

8.5.17 States that have not yet effectively implemented the eight critical elements of a safety oversight system must first resolve these deficiencies and develop a sound foundation upon which to build their State Safety Programmes (SSPs). Only those States having mature safety oversight systems will be able to realise the benefits associated with safety management principles, and achieve further improvements in safety performance overall.

8.5.18 Therefore, **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 EoSM targets by the end of 2019.**

8.5.19 There have been consistent improvements in the application of RAT severity methodology over the course of RP1. **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.**

8.5.20 The completeness of data received through AST mechanism, continues to be a concern. Lack of completeness of various safety information, as a consequence, diminishes the capability of safety analysis at European level. **Therefore 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.**

8.5.21 With regards to the reporting by States and their ANSPs the level of presence and corresponding level of absence of JC, the PRB notes that some improvements in the reporting of the level of JC have been made. **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.**

8.6 Environment KPA

HORIZONTAL FLIGHT EFFICIENCY BASED ON LAST FILED FLIGHT PLAN

8.6.1 In 2010, the Performance Review Body consulted widely on setting an RP1 target for en-route flight efficiency in the range between 0.6 to 0.8 percentage points improvement to the baseline additional distance of 5.42% in 2009. Following the comments of interested stakeholders, the PRB recommended setting a Union-wide en-route flight efficiency target based on the last filed flight plan of 0.75 percentage points improvement.

8.6.2 The Commission Decision (2011/121/EU) set down the European Union-wide performance targets and alert thresholds for the years 2012 to 2014. The environment target was set as: an improvement by 0,75 of a percentage point of the average horizontal en-route flight efficiency indicator in 2014 as compared to the situation in 2009.

8.6.3 The preference of the PRB and many stakeholders was to use the actual trajectory to monitor environmental performance; however, the absence of consistent position reporting across the SES States meant that this was impossible to implement. Therefore the last filed flight plan was selected as a proxy for the actual trajectory, and the PRB agreed to work with stakeholders to ensure that the actual trajectory would be used for the second reference period.

8.6.4 The PRB proposals for Union-wide performance targets noted that there was no legal requirement for States/FABs to set any environmental performance target for RP1. The body responsible for NMD functions (which subsequently became the Network Manager) should be the owner of the union-wide target for environment. However, this body could not be held legally accountable for achieving the union-wide target in RP1, as airspace design and use remain State responsibilities.

8.6.5 The Route Network Design function and the ATFM function carried out by the Network Manager (NM) directly support the achievement of this flight efficiency target.

8.6.6 The NM in 2013 established a dedicated Flight Efficiency Initiative to work closely with aircraft operators, including the pro-active suggestion of improved routings when available.

8.6.7 Of the 0.75% improvement targeted between 2009 and 2014, 0.55% was planned by the Network Manager for the RP1 period (0.10% in 2012, 0.20% in 2013 and 0.25% in 2014). The actual improvement was equal to 0.28% (0.03% in 2012, 0.04% in 2013 and 0.21% in 2014).

8.6.8 In the NM annual report 2014 (page 13), the Network Manager explains that “[t]he target was missed mainly due to longer routes being planned because of:

- The general crisis situation in Ukraine;
- Closure/avoidance of Libyan, Syrian and Iraqi airspace
- Capacity shortfalls during the ATC strikes;
- Traffic composition;
- scenarios applied due to capacity problems in the network;
- special events.”

8.6.9 Although the targeted improvement was not achieved in each of the three years, the one which was closest was the most ambitious and the most recent one. This shows the effect of useful initiatives taken by the NM, possibly with a lag in the implementation or in the expected outcome.

8.6.10 Figure 45 shows the recorded horizontal flight efficiency figures for the 2012-2014 period and a projection towards the RP2 target.

8.6.11 Since the 2014 target was missed, greater effort will be required in RP2 to achieve the flight efficiency target of 4.10% by 2019.

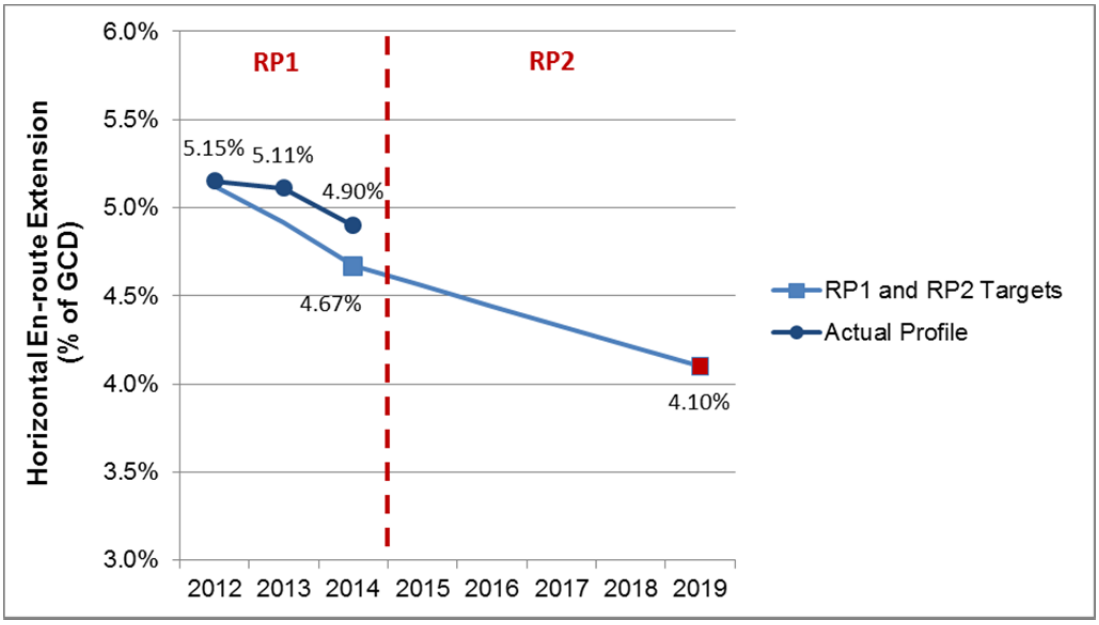


Figure 45: Evolution of horizontal flight efficiency during RP1 and projection towards 2019 target

UTILISATION OF CONDITIONAL ROUTES

YEAR	2012	2013	2014
Aircraft Planning on CDR 1	74%	73%	70%
Aircraft Planning on CDR 2	64%	66%	63%

Table 22: CDR FPL Use by aircraft 2012 - 2014

8.6.12 Table 22 shows that the rate of uptake of CDRs has been relatively static over the period 2012 – 2014. This could be explained by several reasons: civil military authorities may not be making the CDRs available when there is actual demand; aircraft operators may not know when CDRs are available, or may for business reasons simply prefer not to fly on them; CDRs availability may not be coordinated across national regional boundaries making individual segments unusable despite being available. The PRB understands that work continues between all stakeholders, including Network Manager, ANSPs, military authorities, aircraft operators and computer flight plan service providers to focus on each of the areas highlighted above.

8.6.13 The PRB is fully aware that as Free Route Airspace is implemented across the Network, the monitoring of CDR planning and CDR usage becomes more and more irrelevant. Aircraft are no longer constrained to the limits of ATS routes, including conditional routes, but are able to plan individual trajectories that meet their business objectives in terms of fuel burn and flight efficiency.

8.6.14 The PRB considers that the focus in the future should be on monitoring whether or not the national/regional civil and military authorities manage the airspace effectively, in terms of capacity and flight efficiency, to meet the needs of civil and military users.

EFFECTIVENESS OF BOOKING PROCEDURES FOR FUA

8.6.15 Evolution of Usage of Pre-tactically Booked Airspace from 2012 – 2014.

STATE	2012	2013	2014
Austria	38%	No info	66%
Belgium	54%	25%	69%
Bulgaria	40%	No info	39%
Cyprus	(a)	100%	No info
Czech Republic	38%	35%	40%
Denmark	58%	42%	17%
Estonia	No info	No info	No info
Finland	23%	22%	27%
France	64%	54%	63%
Germany	37%	45%	52%
Greece	No info	No info	No info
Hungary	33%	21%	30%
Ireland	(a)	No info	No info
Italy	48%	42%	44%
Latvia	7%	18%	30%

STATE	2012	2013	2014
Lithuania	(a)	(a)	(a)
Luxembourg	(a)	(a)	(a)
Malta	(a)	(a)	(a)
The Netherlands	90%	89%	88%
Norway	44%	46%	47%
Poland	48%	44%	45%
Portugal	(a)	(a)	(a)
Romania	41%	49%	62%
Slovakia	25%	26%	57%
Slovenia	72%	41%	51%
Spain	No info	58%	37%
Sweden	100%	96%	42%
Switzerland	69%	74%	59%
United Kingdom	30%	33%	40%

Table 23: Usage of Pre-tactically booked airspace 2012-2014

(a) These States reported that the allocation and activation of military areas had no adverse impact, either on available ATC capacity, or on route options for general air traffic.
'No info' refers either to no data being provided or insufficient data to calculate the KPI.

8.6.16 The huge variation across the States in the figures for the usage of pre-tactically booked airspace can be due to many factors:

- After internal review, States may be reporting on a greatly different selection of areas than they did in 2012;
- States may be monitoring the actual use of airspace more closely than was previously the case;
- States may have revised national booking procedures to only book airspace when there is a need;
- States may have decided that there is no capacity or flight efficiency issue and that they have no objective to improve airspace booking procedures, etc.

8.6.17 However, it is of concern to the PRB that several States either do not provide any information (Greece), or provide only partial information which means that the KPI cannot be monitored (Austria, Bulgaria, Cyprus, Czech republic, Estonia, Hungary, Ireland, Norway, Slovakia, Slovenia).

8.6.18 Furthermore, since the PRB accepts that some States may not be adversely impacted by military operations and training, e.g. Malta, Luxembourg, it would appreciate if the Commission could confirm that such States may discharge their reporting requirements simply by providing the PRB with a statement to that effect.

RECOMMENDATIONS

8.6.19 In order to meet the horizontal flight efficiency target set for the end of RP2, the gap between the actual and targeted performance at the end of RP1 will also have to be recovered. **As a consequence, 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.**

8.6.20 To improve consistency in reporting on civil military airspace structures, across the states, and to enhance civil military cooperation and coordination, it is important to quantify and qualify the impact of the allocation of individual segregated / restricted areas on the provision of ANS to general air traffic (GAT). **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;**

8.6.21 To improve consistency in reporting on civil military airspace structures, and to reduce the reporting burden on States, it is desirable to ensure that all impacting areas are included whilst simultaneously excluding those areas that have no impact on the provision of ANS to general air traffic. **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.**

8.6.22 As the current rigid route network evolves into Free Route Airspace and the concept of 'conditional routes' becomes less and less relevant, the monitoring of the planning and use of 'conditional routes' is also becoming less and less relevant to the performance of ANS. Furthermore, the simplistic reporting on the allocation and use of segregated / restricted airspace does not reflect the impact that the allocation has had on the provision of ANS to general air traffic. **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.**

8.6.23 The crucial role of effective civil military coordination and cooperation is highlighted in the overall SES legislation, and repeated in the performance legislation. It is vital that the efforts of civil and military stakeholders to improve air navigation services for all airspace users is monitored and reported. **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.**

8.7 Capacity KPA

EN-ROUTE CAPACITY OVERVIEW

8.7.1 In 2010, the Performance Review Body consulted widely on setting an RP2 target for en-route capacity in the range between 0.35 and 0.7 minutes per flight. Following the comments of interested stakeholders, the PRB recommended setting an European Union-wide en-route capacity target of 0.5 minutes per flight for 2014.

8.7.2 The Commission Decision (2011/121/EU) set down the European Union-wide performance targets and alert thresholds for the years 2012 to 2014. The capacity target was set as: an improvement of the average en-route Air Traffic Flow

Management (ATFM) delay so as to reach a maximum of 0.5 minutes per flight in 2014.

8.7.3 From a baseline performance in 2009 of 0.9 minutes average delay per flight, it was necessary for ANSPs to review and realign capacity plans towards the more ambitious target.

8.7.4 To prepare ANSPs to establish and implement adequate capacity plans to achieve the binding target of 0.5 minutes delay in 2014, intermediate targets of 0.7 minutes per flight and 0.6 minutes per flight were proposed for the years 2012 and 2013 respectively.

8.7.5 As depicted in Figure 46, whilst the intermediate targets of 0.7 and 0.6 minutes average en-route ATFM delay per flight were achieved in 2012 and 2013 respectively, the Union-wide binding target of 0.5 minutes per flight for 2014 was not reached.

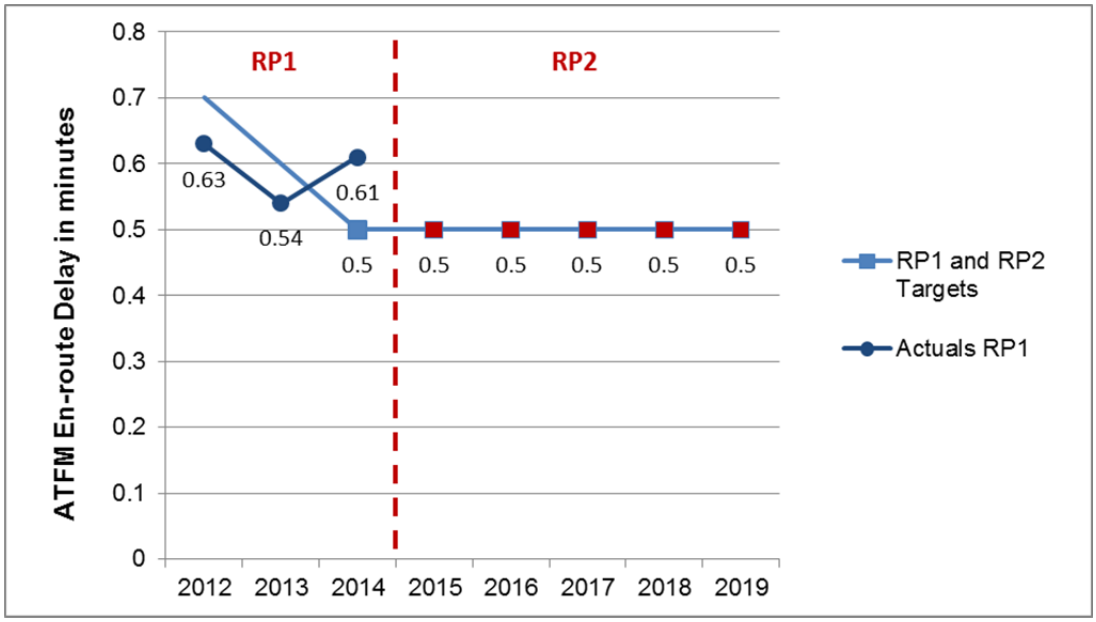


Figure 46: Evolution of ATFM en-route delay during RP1 and projection towards 2019 target

8.7.6 During the first reference period, three States did not provide adequate capacity to meet their respective reference values for all three years: Cyprus, Poland and Portugal.

- Portugal did not meet its national targets in each of the three years of RP1;
- Poland did not meet its national target in 2014, although it did so in 2012 & 2013;
- Cyprus did not meet its national target in 2014, although it did so in 2012 & 2013.

8.7.7 FABEC (comprising Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland) did not provide sufficient capacity to meet its respective reference values in two of the three years of RP1, 2013 & 2014.

- FABEC did not meet its FAB target in 2014, although it did so in 2012 & 2013.

CAPACITY PLANNING

8.7.8 The performance legislation, Regulation (EU) No 691/2010 Annex III, paragraph 4 stipulated that, for en-route capacity, consistency between the union-wide target and national/FAB targets was to be determined by comparing the expected level of en-

route ATFM delay used in the Performance Plan with a reference values provided by the capacity planning process of EUROCONTROL, the 'reference values'.

8.7.9 During RP1, several individual States (Cyprus, Greece, Poland & Spain) and one FAB, (FABEC- Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland) adopted targets that were not consistent with their respective 'reference values' and hence the Union-wide target of 0.5 minutes ATFM delay per flight for 2014.

8.7.10 Although the Commission accepted the Performance Plans of these States, the notification letters of 19th July 2012 contained the proviso that the relevant States would require their respective ANSPs to develop and implement capacity plans to meet the respective reference values at the earliest possible date in the second reference period, with the assistance of the Network Manager.

8.7.11 Despite the requirement outlined in the notification letters, the capacity plans of the States/FABs above are still not in line with the respective reference values, which promise a continued deficit in capacity performance.

8.7.12 The PRB previously raised concerns about the continuous postponement and downgrading of capacity plans, especially in those States that were unable or unwilling to adopt the reference capacity values to be consistent with the Union-wide target for capacity.

8.7.13 The PRB remains concerned that the same States have not made adequate provisions for capacity planning during RP2, and that as traffic grows again, capacity will become a serious problem for the network.

8.7.14 The national monitoring reports, provided by the States, give little or no explanation of the remedial actions to improve capacity performance that the NSAs have imposed upon their respective ANSPs. Therefore it is impossible to ascertain if the States are effectively monitoring the situation.

8.7.15 The Performance Plans, and national monitoring reports provide little or no indication of how States are implementing the Flexible Use of Airspace to improve capacity performance for all airspace users. This is despite the explicit recognition, in the performance legislation, of civil military cooperation and coordination being of the utmost importance to achieving the performance objectives.

ACTUAL CAPACITY PERFORMANCE AND TARGET SETTING

8.7.16 Table 24 below shows a graphical comparison between the actual en-route capacity performance for each State and FAB against the targeted capacity performance as adopted by the relevant FAB/national authorities. Once again it is important to recall that several individual States (Cyprus, Greece, Poland & Spain) and one FAB (FABEC) adopted targets that were not consistent with the Union-wide target of 0.5 minutes ATFM delay per flight for 2014.

8.7.17 It shows that the vast majority of States adopted targets that were easily achieved by the respective ANSPs.

8.7.18 The graphic further shows that several of the States / FABs that did not set targets consistent with the union wide targets, could have pushed their ANSPs a lot further into providing better capacity performance. Greece and Spain easily surpassed the national targets over the three years of RP1. FABEC and Poland significantly surpassed their local targets in 2012 & 2013 but not in 2014.

8.7.19 The PRB considers that when States set easy targets for ANSPs it leads to downgrading or postponement of capacity plans, which creates problems in the future.

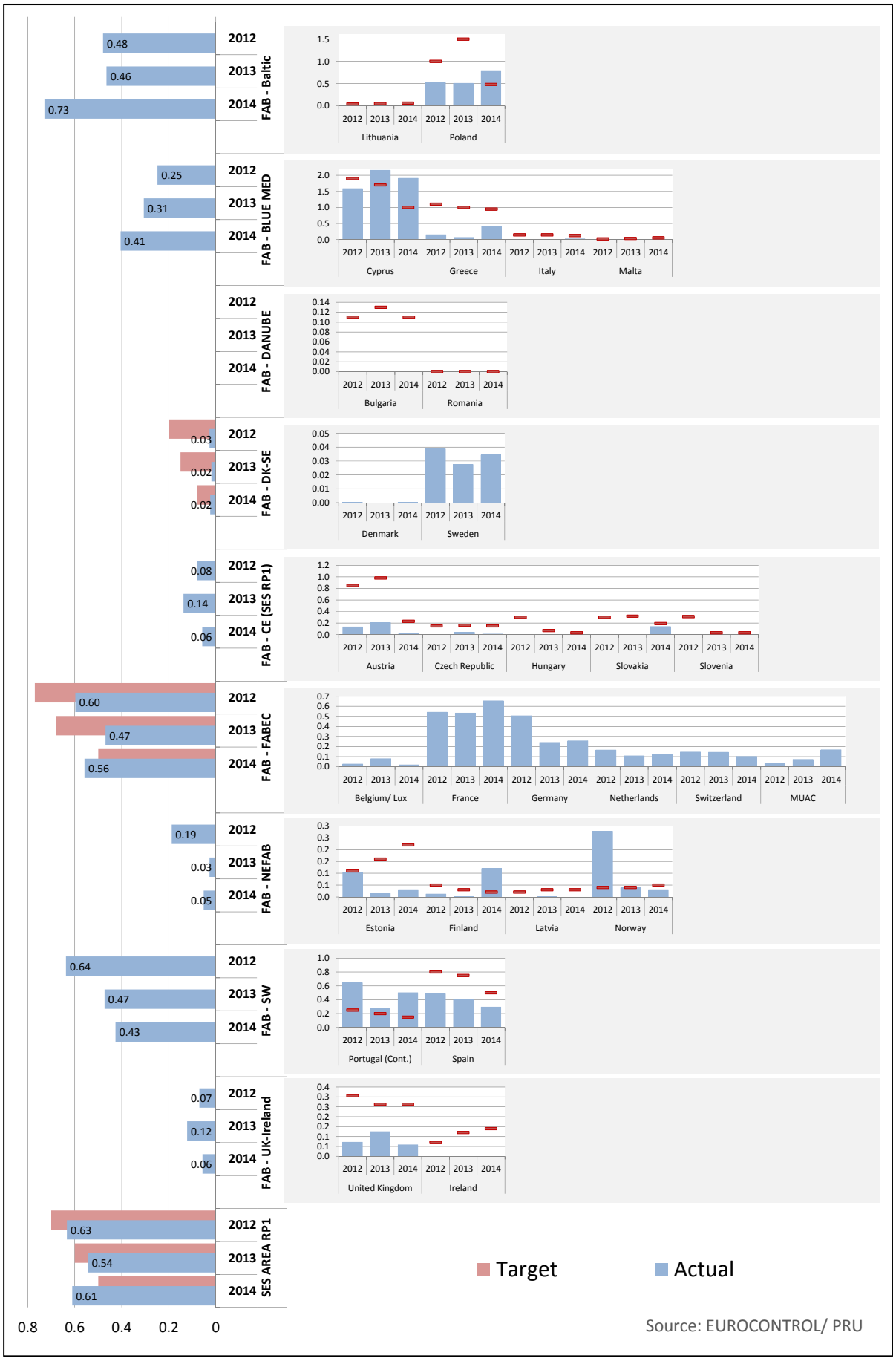


Table 24: Actual and targeted en-route ATFM delay per flight 2012 - 2014

AIRPORT CAPACITY PERFORMANCE

8.7.20 There was no KPI for airports during RP1. Nevertheless, a general trend in performance could already been observed regarding the indicators that were monitored at the 77 airports considered during the first reference period:

(i) Arrival ATFM delay decreased by 19% (0.7 min./arr. in 2012 compared to 0.3 min./arr. in 2014). This decrease occurred most often at major airports (Paris Charles-de-Gaulle, Madrid and Oslo).

(ii) Weather remains the main cause of delay every year (63% in 2012, 67% in 2013 and 69% in 2014) followed by capacity/staffing shortage (26% in 2012, 22% in 2013 and 24% in 2014).

(iii) Additional ASMA time slightly decreased from 2.1 min./arr. in 2012 to 1.9 min./arr. in 2014 (-8.5%).

(iv) Additional taxi-out time also slightly decreased from 3.3 min./dep. in 2012 to 3.1 min./dep. in 2014 (-8.7%). Likewise as for arrival ATFM delay, weather is a critical factor for additional taxi-out time, in particular during winter conditions when de-icing and snow removal operations are required.

8.7.21 Overall it can be noted for the SES area that additional taxi-out time surpasses the sum of arrival ATFM delay and additional ASMA time, penalising outbound traffic compared to inbound.

RECOMMENDATIONS

8.7.22 The ANSPs of certain States continue to plan capacity levels below the minimum required to meet the union-wide targets of 0.5 minutes average ATFM delay for each year in RP2. The ANSPs then use their lack of capacity plans to persuade the authorities of the States / FABs that they should adopt less ambitious performance targets than those required to meet the union-wide targets. This circular argument will ensure that capacity problems will continue and that airspace users will not benefit from the level of capacity performance they were promised by the Performance Scheme legislation. **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.**

8.7.23 The SE region is experiencing severe disruption. The Commission should note the importance of Turkey in this region. The two Istanbul airports currently in operation (Istanbul Ataturk and Sabhia Gökçen) have a major impact on the SE Regional plans, 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. Moreover, the Commission should work with the Network Manager to minimise adverse impacts on capacity planning in the SE Region.

8.7.24 **The PRB invites the Commission to note that the two Istanbul airports currently in operation (Istanbul Ataturk and Sabhia 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.**

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.**

8.7.26 Article 17 of Regulation 691/2010 (and Article 18 of Regulation 390/2013) clearly requires national supervisory authorities to apply appropriate measures to rectify deficits in performance, and to report these to the Commission. **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.**

8.7.27 In view of the importance of civil military cooperation and coordination on increasing capacity for all airspace users, **i**t is vital that the efforts of civil and military stakeholders in this regard are monitored and reported. **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.**

8.7.28 There are still a few cases of substantial non-compliance with the data provision requirements regarding airports subject to RP1. Since the number of airports subject to RP2 is much greater, the PRU established a data specification document in collaboration with airport reporting entities and developed an associated web interface to facilitate the data submission process ensuring a minimum level of data quality and consistency across all airports. The RP2 airports are encouraged to provide their data through that interface, in compliance with the data requirements document. **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.**

8.8 Cost-Efficiency KPA

SUMMARY OF THE KEY EN-ROUTE COST-EFFICIENCY DATA FOR RP1

8.8.1 Table 25 below summarises the key data for each year of RP1 as well as the aggregated values for the RP taken as whole. 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 latest June 2015 Reporting Tables for charging purposes). In addition to information relating to en-route cost-efficiency, Table 25 also comprises key data on terminal ANS costs and gate-to-gate ANS costs. This information comprises the 29 States that were part of the SES Performance Scheme in RP1 (i.e. it excludes Croatia).

8.8.2 This report does not include Italy's most recent updates to their final actual costs 2014 data. These updates have no bearing on the cost-efficiency analysis and recommendations contained in this report.

8.8.3 Table 25 shows that:

i) Compared to the adopted Performance Plans, actual performance at Union-wide level was better than the DUR target in 2014 (54.13 €$_{2009}$ 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 (54.13 €$_{2009}$ 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 have increased over RP1 (+1.5% p.a. between 2011 and 2014) but were below the levels planned in each year and over RP1 as a whole some 4.9% lower than planned.

iv) In response to the lower-than-planned traffic and in order to preserve their financial strength, States/ATSPs have reduced their en-route costs by 940.2 M€$_{2009,}$ -5.0% on average, over RP1.

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	5 945 539 166
	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**	**54.13**

Terminal	**SES States - Data from RP1 national performance plans**	**2012P**	**2013P**	**2014P**
	Real terminal ANS costs - (in EUR2009)	1 476 675 685	1 469 589 294	1 475 519 179
	SES - Actual data from June 2015 Reporting Tables	**2012A**	**2013A**	**2014A**
	Real terminal ANS costs - (in EUR2009)	1 395 162 571	1 343 328 825	1 348 795 857

Gate-to-gate	**SES States - Data from RP1 national performance plans**	**2012P**	**2013P**	**2014P**
	Real gate-to-gate ANS costs - (in EUR2009)	7 734 798 026	7 788 198 736	7 780 280 280
	Share of en-route costs in gate-to-gate ANS costs	80.9%	81.1%	81.0%
	SES States - Actual data from June 2015 Reporting Tables	**2012A**	**2013A**	**2014A**
	Real gate-to-gate ANS costs - (in EUR2009)	7 442 974 668	7 291 248 553	7 294 335 024
	Share of en-route costs in gate-to-gate ANS costs	81.3%	81.6%	81.5%
	SES States - Actual data extracted from STATFOR dashboard	**2012A**	**2013A**	**2014A**
	Number of IFR flights	9 078 353	8 937 663	9 103 920
	Real gate-to-gate unit costs per IFR flight - (in EUR2009)	**820**	**816**	**801**

En-route	**Difference between actuals and EU Decision on Union-wide targets**		**RP1 overall**
	Real en-route costs - (in EUR2009)	in value	-769 531 106
		in %	-4.1%
	Total en-route Service Units	in value	-16 480 797
		in %	-4.9%
	Real en-route unit costs per Service Units - (in EUR2009)	in value	**+0.47**
		in %	**+0.8%**
	Difference between actuals and RP1 national performance plans		**RP1 overall**
	Real en-route costs - (in EUR2009)	in value	-940 221 892
		in %	-5.0%
	Total en-route Service Units	in value	-16 275 260
		in %	-4.9%
	Real en-route unit costs per Service Units - (in EUR2009)	in value	**-0.07**
		in %	**-0.1%**

Table 25: Summary of key RP1 cost-efficiency data (2012-2014)

8.8.4 Actual en-route costs for RP1 as a whole amount to some 17,941 M€$_{2009}$ (see Table 25), of which 84% relate to the main ATSPs.

8.8.5 The RP1 actual average en-route cost breakdown by nature for the main ATSPs is shown in Figure 47. This cost structure remained relatively stable over RP1 and is not significantly different from the plans. Staff costs represent on average 63% of en-route costs for the ATSPs.

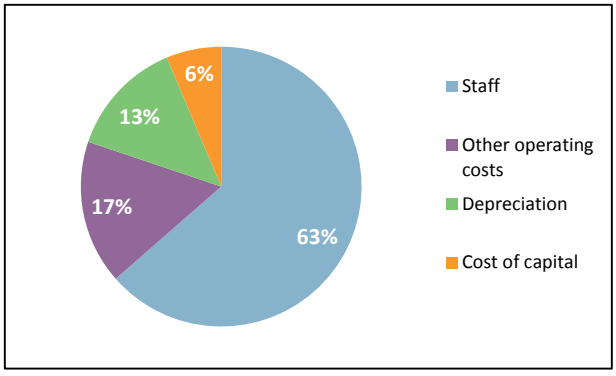


Figure 47: Actual en-route ATSP cost breakdown by nature (RP1 average)

COMPARISON OF EC DECISION ON UNION-WIDE DUR TARGETS WITH DUR TARGETS IN ADOPTED PERFORMANCE PLANS

8.8.6 The Commission adopted RP1 Union-wide en-route cost-efficiency targets (expressed in terms of Determined Unit Rate – DUR) in February 2011 (EC Decision 2011/121/EU). The DURs for each year of RP1 are set out in Table 25 above, with a target DUR of 53.92 €$_{2009}$ by the end of RP1, representing a decrease of -3.5% p.a. over 2011-2014.

8.8.7 The Commission's decision also considered the RP1 targets as part of the process to achieve its political vision and high-level goal for the Single European Sky (recital 8), and that the assessment of Performance Plans should be global, considering trade-offs between KPAs and taking into account of local circumstances and past performance improvements (recital 11).

8.8.8 In November 2011, after assessing the Performance Plans with PRB input, the Commission issued a recommendation (C(2011) 8329), asking several States to revise their local targets. The revised Plans were assessed and although the aggregate targets fell short of the targets in EC Decision (a planned DUR for 2014 of 54.84 €$_{2009}$ compared to 53.92 €$_{2009}$ in the EC Decision), they were accepted by the Commission.

OUTCOME OF RP1 TRAFFIC RISK-SHARING ARRANGEMENTS

8.8.9 The traffic risk-sharing arrangement provided in the SES charging Regulation[7] foresees that ATSPs' additional (or lost) revenue due to the difference between the actual and the planned TSUs are shared with airspace users. For a difference in SUs falling within the dead band of ±2% difference between planned and actual traffic, ATSPs fully bear the loss/gain. However any larger traffic decline/growth is shared with the airspace users (70% vs 30% share) and beyond 10% traffic decline/growth the loss/gain is fully charged/reimbursed to airspace users. As a result, the maximum revenue loss/gain is capped at 4.4%.

8.8.10 Over RP1 as a whole, the net loss of revenues due to the lower than planned traffic was 1,036.0 M€$_{2009}$.

8.8.11 As a result of the traffic risk-sharing arrangements, States/ATSPs bear 39.3% of this loss (407.0 M€$_{2009}$) and airspace users 44.0% (456.3 M€$_{2009}$). Additionally airspace users bear 16.7% (172.7 M€$_{2009}$) which relates to costs not subject to traffic risk-sharing as described in §5.3.3.

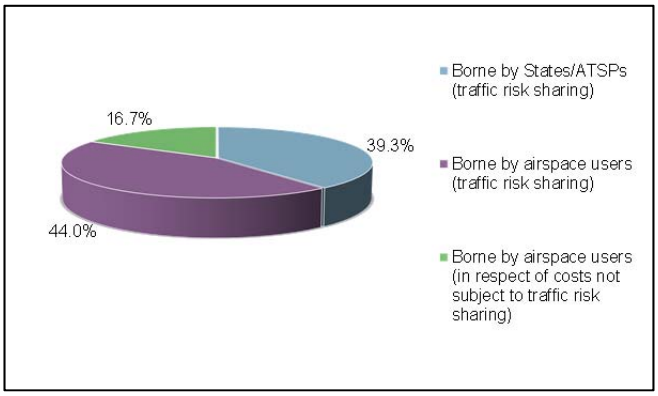


Figure 48: Outcome of RP1 traffic risk-sharing arrangements (en-route)

8.8.12 Thus in total during RP1 airspace users incurred an additional 629.0 M€$_{2009}$ (sum of 456.3 and 172.7 M€$_{2009}$) compared to RP1 Plans.

ACTUAL RP1 EN-ROUTE COSTS VS. COSTS IN ADOPTED NPPS

8.8.13 Figure 49 below shows the main contributions by entity and by nature to the reduction in costs over RP1 of -940.2 M€$_{2009}$.

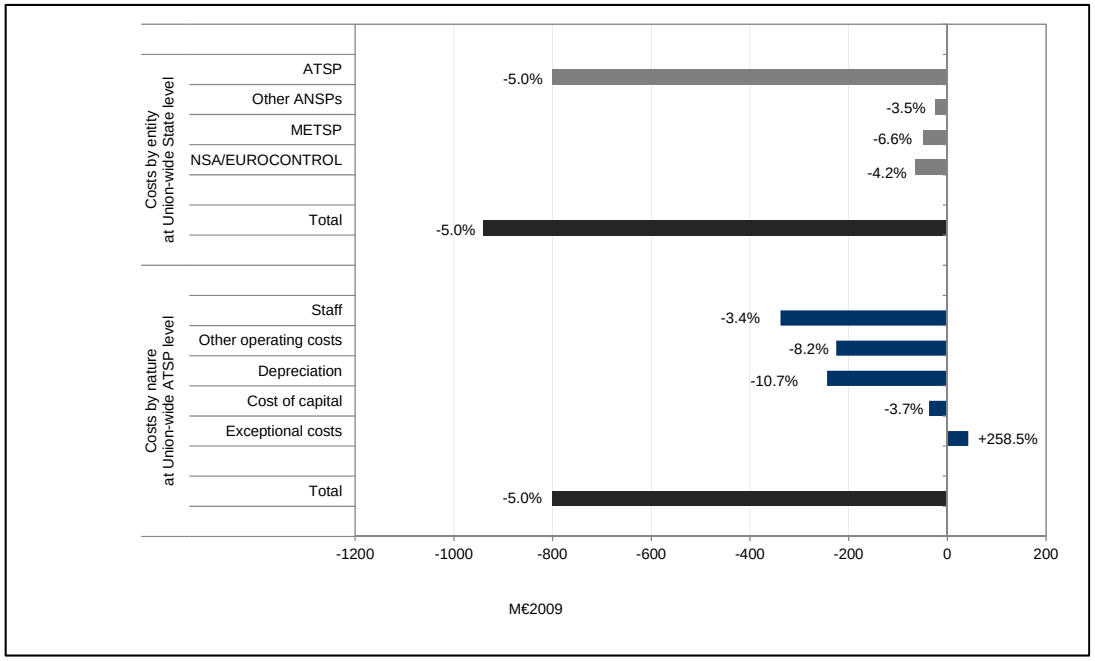


Figure 49: Breakdown of RP1 actual en-route costs compared to NPPs (by entity at Union-wide State level and by nature at Union-wide ATSP level)

8.8.14 Figure 49 shows that the main ATSPs contributed most (-801.5 M€$_{2009}$) to the reduction with savings in staff costs (-3.4%, -338.2 M€$_{2009}$), depreciation costs (-10.7%, -243.8 M€$_{2009}$ and other operating costs (-8.2%, -225.0 M€$_{2009}$). Reductions were also achieved by the other entities covered by the charging[7] and performance[4] Regulations, i.e. MET service providers (-47.9 M€$_{2009}$), States/NSAs, including Eurocontrol Agency costs (-65.7 M€$_{2009}$). For the latter, see also Figure 50 below.

8.8.15 These savings were achieved in each year of RP1 in response to traffic volumes lower than planned. This shows that the Performance Scheme with its incentives to improve ATSPs economic performance is working as intended.

8.8.16 The fact that depreciation costs are significantly lower than planned in the NPPs can be explained by three main drivers: 1) the postponement of capital expenditures (CAPEX) to future years given lower than expected traffic volumes, 2) temporary delays which are due to technical issues, and 3) in some cases likely padding (overestimation) of capex during the planning phase. This issue should be given specific attention during RP2 in order to ensure that airspace users do not pay again in RP2 for capex projects already charged for RP1.

8.8.17 Figure 50 below focuses on the monitoring of Eurocontrol costs, taking into account the evolution of these costs as compared to the evolution of the SES Union-wide targets. For the purposes of this analysis, the Eurocontrol costs include the Agency for the SES States (Part I & IX), excluding the MUAC costs which are part of the other ATSPs costs.

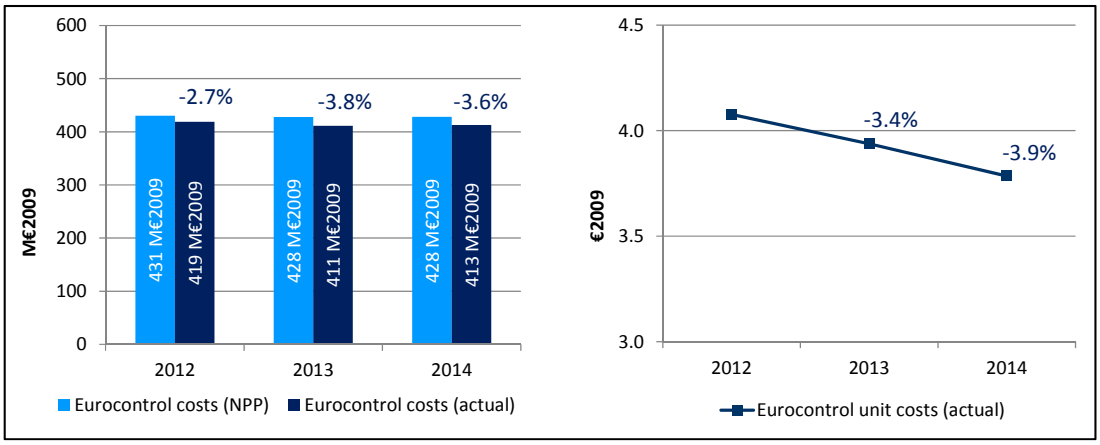


Figure 50: Eurocontrol costs in RP1

8.8.18 As indicated in Figure 50, for each year of RP1, the actual costs were lower than planned in the adopted NPPs. Considering the whole of RP1 (2012-2014), the cumulative Eurocontrol costs were -3.4% (-43.1 M€$_{2009}$) lower than planned. As part of the Charging Scheme, the difference between the determined costs and the actual costs in relation to Eurocontrol costs (international agreement) is not subject to the cost-sharing arrangements and therefore these savings will be reimbursed to users.

8.8.19 Figure 50 also shows that the Eurocontrol unit costs continuously reduced from 4.08 €$_{2009}$ in 2012, to 3.79 €$_{2009}$ in 2014, i.e. an average of -3.6% p.a. (2012-2014). This means that the improvements achieved by Eurocontrol are in line with the collective SES States improvements (see Table 25). The share of Eurocontrol costs in total SES en-route costs remained stable over RP1 (around 6.95%).

RP1 OUTCOME OF OVERALL ECONOMIC SURPLUS FOR ATSPS

8.8.20 The notion of "overall estimated surplus" has been developed to track the financial strength in a systematic and consistent way across all ATSPs. This is different from, and not comparable to, the net accounting profit disclosed by the ATSPs in their financial statements, as explained in section 5.6 above. The "overall estimated surplus" is calculated from two elements:

i) the net gain/loss arising from the en-route activity. This comprises the net gain/loss from costs-sharing (i.e. the extent to which actual costs differ from planned net of the costs exempt; the loss/gain arising from traffic risk-sharing; and any gain/loss for capacity incentive mechanisms; and

ii) the surplus embedded in the cost of capital.

8.8.21 In the Performance Plans adopted for RP1, the average return on equity (RoE) embedded in the determined cost of capital was 6.4% of the equity included in the determined asset base for the 28 main ATSPs. When looking at the RP1 outturn, it is computed that the actual average RoE (comprising both the net gain from the en-route activity and the surplus embedded in the cost of capital) is 10.7% of the equity included in the actual asset base. This represents an "overall estimated surplus" of 1,180 M€$_{2009}$ over RP1.

8.8.22 This indicates that at Union-wide level, ATSPs succeeded in retaining their (ex-ante) surplus and even increasing it substantially in some cases, despite significantly lower traffic levels than planned. This is an important result to keep in mind when analysing the RP2 cost-efficiency targets. Although there are variances across the States, only one ATSP (LVNL from the Netherlands) cumulated a negative surplus over RP1 (-13.2 M€$_{2009}$).

RP1 OUTCOME OF ACTUAL COSTS FOR AIRSPACE USERS

8.8.23 The actual costs incurred by airspace users ("true costs") in respect of ANS activities in RP1 differ from the DUR charged in the three years of RP1 due to the adjustments foreseen in the performance[4] and charging[7] Regulations. From an airspace user's point of view, the "true costs" are therefore a better reflection of cost-efficiency performance.

8.8.24 The two main additional cost adjustments incurred by users in respect of RP1 are:

- the significant traffic shortfall compared to Plans (-4.9% lower than planned over RP1 resulting in an extra 629.0 M€$_{2009,}$ to be charged to users, see §8.8.12 above); and
- the inflation adjustments (resulting in an extra 39.4 M€$_{2009}$ to be charged to users).

8.8.25 The PRB is mindful that in addition to these adjustments airspace users also bear the exchange rate risk (which is a feature of the Charging Scheme). The unit rate charged to airspace users is established in national currency but billed in Euros using the exchange rate of the current month. In case of exchange rate fluctuation, the actual costs paid by airspace users will then be higher or lower than planned. For example, for the UK en-route cost base, which is one of the largest in Europe, the appreciation of the British Pound of some 10% between the actual 2014 exchange rate and the rate planned in the NPP has led to an increase in the bill charged to airspace users.

8.8.26 So, while States/ATSPs collectively reduced their costs over RP1 in response to lower revenues and managed to increase their economic surplus (see §8.8.21), the "true costs" for users will be higher than the DUR and higher than the unit cost incurred by the States for each year of RP1 (see Table 26 below). The situation may be different in RP2 since most States have adopted prudent traffic forecasts.

RP1	2012	2013	2014
Determined Unit Rate (DUR) from NPPs (in EUR 2009)	57.75	56.69	54.84
Actual unit costs incurred by States (in EUR 2009)	58.43	56.55	54.13
Actual unit costs incurred by airspace users (in EUR 2009)	59.33	58.34	55.68

Table 26: Actual en-route unit costs incurred by States vs actual unit costs incurred by airspace users[12]

ACTUAL RP1 TANS AND GATE-TO-GATE ANS COSTS VS. FORECAST IN ADOPTED NPPS

8.8.27 As shown in Table 25 Union-wide TANS costs in RP1 were on average -7.6% lower than forecast in the adopted NPPs (4,087 M€$_{2009}$ compared with 4,422 M€$_{2009}$). Even though no specific targets were set for TANS costs and unit rates in RP1, the monitoring shows that actual TANS cost reductions (in % terms) are actually larger for TANS than for en-route.

8.8.28 Total Union-wide gate-to-gate ANS costs in RP1 were -5.5% lower than the costs presented in the adopted NPPs (22,029 M€$_{2009}$ compared with 23,303 M€$_{2009}$). Actual RP1 en-route costs accounted for 81.4% of gate-to-gate ANS costs, a similar proportion to that foreseen in the NPPs (81.0%).

LINK BETWEEN RP1 AND RP2 EN-ROUTE COST-EFFICIENCY TARGETS

8.8.29 When the Union-wide en-route cost-efficiency targets for RP2 were adopted (Commission Decision 2014/132/EU) in February 2014, actual costs and traffic for the year 2014 were not known. Thus the starting point for RP2 was based on latest

available information (i.e. an estimated 6,242 M€$_{2009}$ for the 2014 DCs, traffic forecast of 107.4 million TSUs with an estimated 2014 unit cost of 58.09 €$_{2009}$). From this starting point, the adopted Union-wide DUC target for 2019 of €49.10 was based on an assumptions of a 3.3% p.a. decrease in DUC, traffic growth of +1.2% p.a. (STATFOR low case) and a 2.1% p.a. reduction in DCs between 2014 and 2019.

8.8.30 However the actual performance, both costs and traffic, in the last year of RP1 significantly differs from the starting points for RP2. At Union-wide level (with the inclusion of Croatia for comparability purposes) the actual unit cost in 2014 was 53.93 €$_{2009}$. This is -7.2% lower than the starting point used for setting RP2 targets (58.09 €$_{2009}$) due to the combination of lower actual costs (-3.6%) and higher en-route TSUs (+3.9%) than foreseen. This is shown in Figure 51, below.

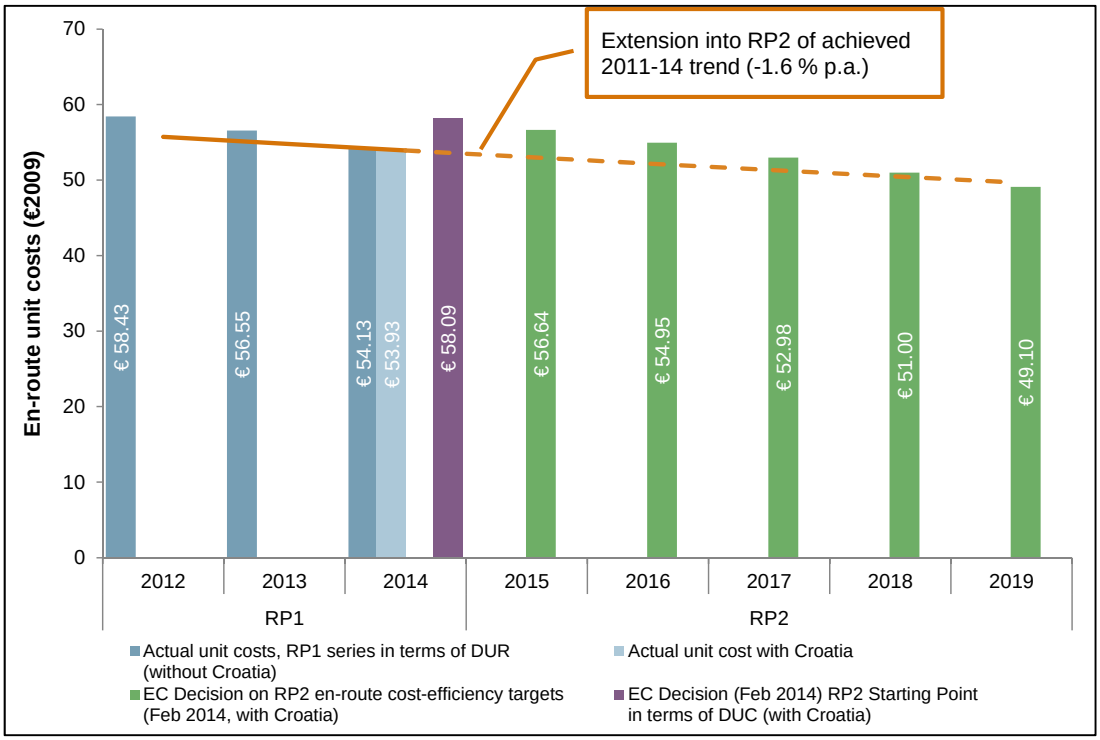


Figure 51: RP1 and RP2 en-route cost-efficiency targets trends

8.8.31 This means that meeting the en-route cost-efficiency targets in the first years of RP2 should not be too challenging as States will benefit from the level of performance achieved in 2014.

8.8.32 Further the €53.93 actual unit cost in 2014 (with the inclusion of Croatia for comparability purposes) means that the DUC trend required to reach the target of 49.10 €$_{2009}$ in 2019 is now a reduction of -1.9% p.a. This means only a slight increase in effort compared to the actual trend observed in RP1 (-1.6% p.a.) is required to meet the 2019 DUC target of 49.10 €$_{2009}$.

HIGH LEVEL CONCLUSIONS FOR RP1 COST-EFFICIENCY TRENDS

8.8.33 For each year of RP1 States/ATSPs reduced their costs in response to traffic volumes lower than planned. In total costs were 940.2 M€$_{2009}$ (5.0%) lower than planned. This shows that the Performance Scheme, with its incentives to improve ATSPs economic performance, is working as intended.

8.8.34 While the Union-wide actual unit costs met the DUR targets from the approved NPPs

for 2013 and 2014, they were slightly higher than the Union-wide targets for all three years of RP1.

8.8.35 The unit costs incurred by airspace users in respect of RP1 are higher than the DUR and higher than the unit costs incurred by the States, mainly due to the application of the traffic risk sharing mechanism and the inflation adjustments. In other words, airspace users have benefitted less than ATSPs from the reduction in costs. The situation is likely to be different in RP2 since most States have adopted prudent traffic forecasts.

8.8.36 On the other hand, ATSPs have collectively maintained and/or improved their financial strength during RP1 despite significantly less traffic than planned.

8.8.37 As the PRB has said before, it is important that the cost savings efforts are carried forward into RP2. The increase in the overall economic surplus of ATSPs is a clear indication that further cost-efficiency improvements can be achieved in RP2.

8.8.38 The average share of Eurocontrol costs in total SES en-route costs amounted to 6.95% at a Union-wide level over RP1 and it remained stable throughout RP1. This means that the improvements in cost-efficiency achieved by Eurocontrol are in line with the collective SES States improvements.

8.8.39 The actual 2014 unit cost of €53.93 (adjusted to include Croatia) is 7.2% below the baseline figure of €58.09 underlying the Union-wide RP2 en-route cost-efficiency targets. Similarly the actual costs in 2014 of 6,019 M€$_{2009}$ (adjusted to include Croatia) are below the total of 6,242 M€$_{2009}$ assumed in the Union-wide targets for RP2. This means that the RP2 targets require less effort to meet than was assumed and only a slight increase over the actual unit cost trend in RP1 (see Figure 51). The PRB therefore expects that the RP2 targets will be fully met.

RECOMMENDATIONS

8.8.40 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**.

8.8.41 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**.

8.8.42 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 I: Airport data quality issues – Progress Report

FAB	COUNTRY NAME	AIRPORT NAME	AIRPORT	DATA QUALITY ISSUE 2014
FAB - Baltic	Poland	EPWA	Warsaw/Okecie	CPR data issue
FAB - Baltic	Lithuania	EYVI	Vilnius Intl	Data not provided
FAB - BLUE MED	Cyprus	LCLK	Larnaca	Departure runway incomplete
FAB - BLUE MED	Athens	LGAV	Athens	
FAB - BLUE MED	Italy	LICC	Catania Fontanarossa	
FAB - BLUE MED	Italy	LIMC	Milan/Malpensa	
FAB - BLUE MED	Italy	LIME	Bergamo/Orio Alserio	
FAB - BLUE MED	Italy	LIML	Milan/Linate	
FAB - BLUE MED	Italy	LIPE	Bologna	No departure runway
FAB - BLUE MED	Italy	LIPZ	Venice/Tessera	
FAB - BLUE MED	Italy	LIRF	Rome/Fiumicino	
FAB - BLUE MED	Italy	LIRN	Napoli Capodichino	
FAB - BLUE MED	Malta	LMML	Malta/Luqa	No departure runway, Departure stand incomplete
FAB - CE (SES RP1)	Slovenia	LJLJ	Ljubljana	No departure runway, Departure stand incomplete
FAB - CE (SES RP1)	Czech Republic	LKPR	Prague/Ruzyne	
FAB - CE (SES RP1)	Austria	LOWW	Vienna	
FAB - CE (SES RP1)	Slovakia	LZIB	Bratislava Ivanka	No departure runway
FAB - DANUBE	Bulgaria	LBSF	Sofia	
FAB - DANUBE	Hungary	LHBP	Budapest/Ferihegy	
FAB - DANUBE	Romania	LROP	Otopeni-Intl .	AOBT issue
FAB - FABEC	Belgium	EBBR	Brussels	
FAB - FABEC	Germany	EDDB	Schoenefeld-Berlin	
FAB - FABEC	Germany	EDDF	Frankfurt	
FAB - FABEC	Germany	EDDH	Hamburg	
FAB - FABEC	Germany	EDDK	Cologne/Bonn	
FAB - FABEC	Germany	EDDL	Dusseldorf	
FAB - FABEC	Germany	EDDM	Munich	
FAB - FABEC	Germany	EDDN	Nurenberg	
FAB - FABEC	Germany	EDDP	Leipzig/Halle	
FAB - FABEC	Germany	EDDS	Stuttgart	No departure runway
FAB - FABEC	Germany	EDDV	Hanover	
FAB - FABEC	Netherlands	EHAM	Amsterdam	
FAB - FABEC	Luxembourg	ELLX	Luxembourg	50% of departure stand provided
FAB - FABEC	France	LFLL	Lyon/Sartolas	
FAB - FABEC	France	LFMN	Nice	No arrival/departure runway
FAB - FABEC	France	LFPG	Paris/Charles-de-Gaulle	
FAB - FABEC	France	LFPO	Paris/Orly	
FAB - FABEC	France	LFSB	Basle/Mulhouse	
FAB - FABEC	Switzerland	LSGG	Geneva	
FAB - FABEC	Switzerland	LSZH	Zurich	

FAB	COUNTRY NAME	AIRPORT NAME	AIRPORT	DATA QUALITY ISSUE 2014
FAB - NE	Estonia	EETN	Tallinn	No departure runway
FAB - NE	Finland	EFHK	Helsinki-Vantaa	
FAB - NE	Norway	ENBR	Bergen/Flesland	No departure runway/No departure stand
FAB - NE	Norway	ENGM	Oslo/Gardermoen	No departure runway/No departure stand
FAB - NE	Norway	ENVA	Trondheim/Vaernes	No departure runway/No departure stand
FAB - NE	Norway	ENZV	Stavanger/Sola	No departure runway/Departure stand incomplete
FAB - NE	Latvia	EVRA	Riga Intl	
FAB - SW	Spain Canarias	GCLP	Las Palmas	
FAB - SW	Spain Canarias	GCTS	Tenerife Sur/Reina Sofia	
FAB - SW	Spain Canarias	GCXO	Tenerife Norte	
FAB - SW	Spain Continental	LEAL	Alicante	
FAB - SW	Spain Continental	LEBB	Bilbao	
FAB - SW	Spain Continental	LEBL	Barcelona	
FAB - SW	Spain Continental	LEIB	Ibiza	
FAB - SW	Spain Continental	LEMD	Madrid/Barajas	
FAB - SW	Spain Continental	LEMG	Malaga	
FAB - SW	Spain Continental	LEPA	Palma de Mallorca	
FAB - SW	Spain Continental	LEVC	Valencia	
FAB - SW	Spain Continental	LEZL	Sevilla	
FAB - SW	Portugal	LPPR	Porto	
FAB - SW	Portugal	LPPT	Lisbon	
FAB - UK-I reland	United Kingdom	EGBB	Birmingham	
FAB - UK-I reland	United Kingdom	EGCC	Manchester	
FAB - UK-I reland	United Kingdom	EGGD	Bristol/Lulsgate	
FAB - UK-I reland	United Kingdom	EGGW	London/Luton	
FAB - UK-I reland	United Kingdom	EGKK	London/Gatwick	
FAB - UK-I reland	United Kingdom	EGLC	London/City	
FAB - UK-I reland	United Kingdom	EGLL	London/Heathrow	
FAB - UK-I reland	United Kingdom	EGNT	Newcastle	Data quality issue (AOBT) and missing data (RWY)
FAB - UK-I reland	United Kingdom	EGPD	Aberdeen	
FAB - UK-I reland	United Kingdom	EGPF	Glasgow	
FAB - UK-I reland	United Kingdom	EGPH	Edinburgh	
FAB - UK-I reland	United Kingdom	EGSS	London/Stanted	
FAB - UK-I reland	Ireland	EIDW	Dublin	
FAB DK-SE	Denmark	EKCH	Copenhagen	
FAB DK-SE	Sweden	ESGG	Gotenborg/Landvetter	No departure runway
FAB DK-SE	Sweden	ESSA	Stockholm/Arlanda	

Table 27: Airport data quality issues in 2014 per FAB

Annex II: Estimated economic surplus for the en-route activity for the main ATSPs

Estimated surplus for the en-route activity for the main ATSPs at individual level	2012P	2012A	2013P	2013A	2014P	2014A
Austria (Austro Control)	2.2%	7.0%	2.7%	9.6%	2.8%	15.1%
Belgium-Luxembourg (Belgocontrol)	5.9%	10.6%	5.1%	4.2%	4.6%	10.9%
Bulgaria (BULATSA)	12.7%	18.7%	13.0%	22.2%	12.9%	14.0%
Cyprus (DCAC Cyprus)	6.8%	9.7%	6.8%	10.9%	6.8%	11.8%
Czech Republic (ANS CR)	10.1%	14.0%	9.9%	12.3%	9.9%	10.4%
Denmark (NAVIAIR)	3.7%	7.9%	3.5%	11.1%	3.5%	12.3%
Estonia (EANS)	11.6%	10.8%	10.0%	16.5%	8.7%	7.4%
Finland (Finavia)	2.3%	0.1%	2.5%	5.2%	2.5%	1.0%
France (DSNA)	1.5%	4.3%	1.5%	4.4%	1.6%	3.2%
Germany (DFS)	2.9%	-0.8%	2.8%	3.0%	2.9%	1.9%
Greece (HCAA)	2.4%	5.4%	2.4%	5.8%	2.4%	6.9%
Hungary (HungaroControl)	4.2%	7.4%	5.4%	10.3%	6.1%	15.4%
Ireland (IAA)	5.4%	14.9%	5.4%	16.9%	5.0%	16.6%
Italy (ENAV)	5.3%	9.5%	5.6%	11.3%	5.5%	7.3%
Latvia (LGS)	7.0%	7.4%	4.8%	8.8%	4.9%	7.9%
Lithuania (Oro Navigacija)	5.5%	7.2%	5.1%	3.7%	4.7%	8.6%
Malta (MATS)	1.8%	15.0%	0.7%	1.2%	3.3%	-7.5%
Netherlands (LVNL)	0.0%	-2.3%	0.0%	-5.6%	0.0%	-4.6%
Norway (Avinor)	3.2%	9.0%	3.5%	-2.7%	3.7%	0.5%
Poland (PANSA)	3.9%	10.0%	4.1%	15.2%	0.4%	-6.9%
Portugal (NAV Portugal)	3.1%	7.9%	3.2%	8.7%	3.3%	11.1%
Romania (ROMATSA)	8.6%	-4.5%	8.2%	6.7%	7.7%	9.4%
Slovakia (LPS)	6.6%	5.8%	7.3%	9.0%	6.9%	7.7%
Slovenia (Slovenia Control)	4.3%	14.3%	4.2%	7.5%	3.8%	5.5%
Spain (AENA)	5.6%	10.5%	5.6%	18.4%	5.7%	18.1%
Sweden (LFV)	1.9%	0.6%	2.0%	2.1%	2.1%	-0.1%
Switzerland (Skyguide)	2.0%	0.9%	1.9%	9.0%	1.8%	9.6%
United Kingdom (NATS)	7.7%	11.8%	7.5%	6.2%	7.4%	17.8%

Table 28: Estimated economic surplus for the en-route activity for the main ATSPs (in % of en-route revenues/costs)

Annex III: Comparison of actual costs and service units with planned values overall RP1 per en-route charging zone

En-route Charging Zone	Costs ACT vs. PP (RP1)	TSUs ACT vs. PP (RP1)
Spain Continental	-12.0%	-11.2%
Ireland	-11.2%	-1.7%
Denmark	-9.5%	-5.2%
Austria	-8.5%	-10.7%
Greece	-8.4%	-9.6%
Hungary	-8.3%	1.1%
United Kingdom	-6.9%	-8.4%
Slovenia	-6.4%	-3.5%
Belgium-Luxembourg	-5.8%	-2.6%
Bulgaria	-5.6%	11.3%
Switzerland	-5.0%	-8.2%
Estonia	-5.0%	-5.1%
Finland	-4.8%	-13.6%
France	-4.7%	-2.8%
Spain Canarias	-4.7%	-12.2%
Poland	-4.5%	-2.6%
Czech Republic	-4.5%	-2.7%
Italy	-4.3%	-6.8%
Latvia	-2.4%	0.5%
Germany	-2.1%	-8.2%
Slovakia	-1.9%	0.5%
Lithuania	-1.4%	1.5%
Cyprus	-0.4%	3.0%
Portugal	0.4%	-3.1%
Sweden	0.7%	-2.9%
Netherlands	1.3%	-1.8%
Romania	4.2%	0.8%
Norway	4.4%	13.4%
Malta	4.7%	20.9%
Union-wide	**-5.0%**	**-4.9%**

Table 29: Comparison of actual costs and service units with planned values (RP1) per en-route charging zone

Annex IV: Union-wide 2014 actual costs and unit cost for users ("True en-route costs for users")

	Costs	TSUs	Unit cost
Amounts expected to be charged in respect of 2014 activities (financial amounts in €2009 using the forecast inflation rates from NPPs)			
Determined Costs from NPPs	6 304 761 101	114 964 695	54.84
Costs for services to exempted VFR flights in 2014	-9 202 786	114 964 695	-0.08
Other revenues deducted from the 2014 unit rate	-49 873 189	114 964 695	-0.43
Total related to 2014 activity incuded in the 2014 unit rate	**6 245 685 126**	**114 964 695**	**54.33**
Amounts charged in respect of 2014 activities (financial amounts in €2009 using the actual inflation rates)			
a) Amounts already charged in 2014 through the 2014 unit rate			
Determined costs billed to airspace users (based on actual SUs)	6 009 837 589	109 836 771	54.72
Costs for services to exempted VFR flights in 2014 (based on actual SUs)	-8 511 983	109 836 771	-0.08
Other revenues deducted from the 2014 unit rate (based on actual SUs)	-45 873 239	109 836 771	-0.42
Total charged through the 2014 unit rate	5 955 452 367	109 836 771	54.22
b) Amounts that will be charged/reimbursed to users as part of future unit rate			
Inflation adjustment	-48 915 355	109 836 771	-0.45
Traffic risk sharing adjustment	150 394 431	109 836 771	1.37
Traffic adjustment	58 065 329	109 836 771	0.53
Bonus/penalty	10 672 070	109 836 771	0.10
Costs exempt from cost-sharing	-9 735 885	109 836 771	-0.09
Total to be charged/reimbursed through future unit rates	160 480 589	109 836 771	1.46
Total charged to users in respect of 2014 activities	**6 115 932 957**	**109 836 771**	**55.68**
Difference between the amounts expected to be charged and the amounts charged in respect of 2014 activities			
Difference in value	-129 752 170	-5 127 924	1.36
Difference in %	-2.1%	-4.5%	2.5%

Table 30: Detailed calculation of the "true en-route costs for users"

Endnotes

1 http://prudata.webfactional.com/Dashboard/eur_view_2014.html.

2 See EASA Annual Safety Review 2014.

3 As presented in the PRB Annual Monitoring Report 2013.

4 Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions. OJ L 128, 9.5.2013, p.1..

5 These airports are Stuttgart, Tallinn, Newcastle, Luxembourg, Bergen/Flesland, Oslo/Gardermoen, Trondheim/Vaernes, Stavanger/Sola, Gotenborg/Landvetter, Larnaca, Nice, Bologna, Ljubljana, Malta/Luqa, Bratislava Ivanka, Bucharest.

6 RP1 En-route total Costs and Services Units do not include Croatia.

7 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..

8 For the purpose of this analysis, the main ATSPs actual en-route costs are aggregated from the monitoring reports produced at States 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 the Monitoring Reports at State level.

9 The penalty reported by HungaroControl corresponds to a decrease in the “asset management fee” agreed with the users and reimbursed through “other revenues” deducted for the calculation of the 2014 unit rate (the determined costs have not been revised). For transparency purposes, this amount is presented as a penalty in Figure 35.

10 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 36.

11 European Commission MEMO Brussels, 19 July 2012 What is the SES Performance Scheme? http://europa.eu/rapid/press-release_MEMO-12-576_en.htm?locale=en.

12 Note that the actual unit costs incurred by airspace users shown in Table 29 take account of the costs exempt from cost-sharing claimed by the States (with the exception of Austria for the year 2013). The actual amounts eligible for carry-over to the following reference period(s), are subject to EC verification, but the outcome of this verification is not known at the time of writing this report.