



SES II Performance Scheme

Proposed EU-wide Performance Targets for the period 2012-2014

**Prepared by the Performance Review
Commission (PRC) of EUROCONTROL
as the designated Performance Review Body
(PRB) of the Single European Sky**



Directorate-General
for Mobility
and Transport



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FOREWORD by the PRB chairman, Mr Peter Griffiths



A unique opportunity for Air Navigation in Europe is being brought forward by the Single European Sky (SES) II package to improve ANS performance for the benefit of civilian and military users, and society as a whole. For more than 10 years, the Performance Review Commission (PRC) has been measuring pan-European ATM performance and making recommendations for improvements. The recent designation by the European Commission of the EUROCONTROL PRC, supported by the PRU, as the Performance Review Body (PRB), is a recognition for the work achieved so far. As the first PRB chairman, I am honoured to build on the solid body of work produced by the PRC and to further develop it in order to effectively address the challenges and opportunities brought forward by the SES II Performance Scheme.

The target setting, monitoring and incentive system introduced in the SES II Performance Scheme is a powerful instrument. The first step in its implementation is the adoption of EU-wide targets for the period 2012 to 2014 (reference period 1-RP1) by the end of 2010. These targets will need to take into account the rich diversity of Air Traffic Management across Europe.

The PRB vision is clear. The EU-wide targets should be challenging, achievable in the time frame and consistent with the longer term policy objectives which were endorsed by Transport Ministers at the Transport Council on 30 March 2009. It is essential that performance plans allow for each states contribution to be recognised. In setting these targets, it is not expected that states will apply them equally, but through the National Supervisory Authorities (NSA) show their contribution to the EU-wide aggregate in plans set at FAB or National level.

Rightly, sustaining and improving safety remains the principal objective and the maintenance of safety levels is assured by regulatory requirements and oversight at national and international levels. The PRB is working in partnership with EASA to ensure safety delivery and develop future KPIs to provide adequate monitoring and future target setting.

The formal stakeholders consultation on the PRC's initial proposals has been effective and constructive. Over 60 detailed comments have been received, covering the full spectrum of the European aviation community. This is a clear indication of the importance of target setting for the industry. Perhaps unsurprisingly, the views expressed by the different stakeholders tend to diverge on the level of ambition for RP1, but they all concur on the importance to ensure that European aviation safety levels are further enhanced. In this context, I honestly believe that the PRB's final proposals for the EU-wide targets are striking a fair and effective balance between the level of ambition, practicalities of the business realities and overall interests of the European aviation community.

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1 Introduction and context

1.1 This report

- 1.1.1 By the end of 2010, the European Commission (EC) is required to adopt EU-wide performance targets for the first reference period (RP1, 2012-2014) of the performance scheme established under the Single European Sky (SES) legislation. This report sets out the recommended values and rationale for those EU-wide performance targets.
- 1.1.2 This Final Report is organised in four chapters:
- Chapter 1 presents the context;
 - Chapter 2 describes the performance scheme and SES tools available to improve performance, as well as an update of the STATFOR traffic forecasts;
 - Chapter 3 contains the initial proposals, a summary of the stakeholder consultation comments/responses and Performance Review Body’s (PRB’s) opinion; and
 - Chapter 4 presents the PRB’s proposals for the EU-wide targets and alert thresholds.
- 1.1.3 This should be read in conjunction with the following external volumes:
- Appendix A “The Performance Scheme: Initial EU-wide Target Proposals: Consultation Document (2 August 2010, including corrigendum dated 27 September 2010)”;
 - Appendix B “EU-wide Target Proposals-Consultation Response Document”.
- 1.1.4 This report has been prepared by the by the Performance Review Commission (PRC) of EUROCONTROL as the designated Performance Review Body (PRB) of the Single European Sky¹.
- 1.1.5 The PRC was created by EUROCONTROL in 1998. It has more than 12 years of experience in monitoring performance, benchmarking and identifying reasons for differences in Air Navigation Service Providers (ANSPs) performance level, as well as proposing high level quantitative targets for improvement in the main key performance areas (KPIs).

1.2 EU-wide Performance Indicators for RP1

- 1.2.1 Quantified EU-wide targets are required to be set for RP1 for each of the three following KPIs - Environment, Capacity and Cost-Efficiency, as described in Table 1-1.

Key Performance Area	Key Performance Indicator for EU-wide target setting
Safety	None
Environment	Average horizontal en route flight-efficiency
Capacity	Minutes of en route ATFM delay per flight
Cost-efficiency	Average EU-wide determined unit rate for en- route ANS

Table 1-1: Key Performance Indicators (KPIs) with targets in RP1

- 1.2.2 Maintaining or improving the level of safety is an overarching requirement. However there are no EU-wide targets to be set for safety during RP1. Rather, the Legislator requires work by the PRB and the European Aviation Safety Agency (EASA) to develop

¹ On 29 July 2010, the EC adopted a Decision designating EUROCONTROL acting through its Performance Review Commission (PRC) supported by the Performance Review Unit (PRU) as the PRB until 30 June 2015 (See Ref iv). The EUROCONTROL Organisation accepted to be designated as PRB on 15 September 2010.

Performance Indicators (PIs) during RP1 as described in Table 1-2. For RP1, the Legislator focussed on en route KPIs for target setting.

- 1.2.3 In addition, a number of PIs have been selected for monitoring, and some of these are expected to have targets set for Reference Period 2 (RP2) as described in Table 1-2. Furthermore, new indicators may also be proposed for subsequent reference periods.

Key Performance Area	Performance Indicator for monitoring in RP1
Safety	<ol style="list-style-type: none"> 1) Safety management effectiveness measured by maturity metric for ANSPs and NSAs respectively 2) Percentage of application of severity classification of the Risk Analysis Tool allowing monitoring of: <ol style="list-style-type: none"> 2.1) separation minima infringements; 2.2) runway incursions; and 2.3) ATM special technical events. 3) Minimum level of the measure of Just Culture²
Environment	<ol style="list-style-type: none"> 1) Effective use of the civil/military airspace structures (e.g. CDRs)
Capacity	<ol style="list-style-type: none"> 1) Total ATFM delays attributable to terminal and airport ANS; 2) Additional time in the taxi out phase; 3) Additional time for ASMA (Arrival Sequencing and Metering Area) for airports above 100.000 movements.
Cost-efficiency	<ol style="list-style-type: none"> 1) Terminal air navigation services costs and unit rates

Table 1-2: Performance Indicators (PIs) for monitoring

- 1.2.4 According to the performance scheme Regulation [Ref i], National/FAB performance plans shall include targets for the capacity and cost-efficiency KPIs, and may include targets for the Safety and Environment KPIs.
- 1.2.5 States will have to monitor and publish the safety PIs identified in Table 1-2 including the number of separation minima infringements, runway incursions and ATM special technical events. These PIs will have to be developed jointly by the Commission, the Member States, EASA and EUROCONTROL. They will be adopted by the Commission before end 2011.
- 1.2.6 This report considers the evidence for setting values of EU-wide performance targets. These targets do not apply directly to the National/FAB or ANSP levels. National Supervisory Authorities (NSAs) will be responsible for determining the national targets that will be included in the National/FAB performance plans.

1.3 Geographical scope for the EU-wide targets

- 1.3.1 According to Article 1(1) of the performance scheme Regulation, the scheme applies to airspace in the EUR and AFI ICAO regions of EU Member States where they are responsible for the provision of air navigation services. Member States may decide to include airspace under their responsibility within other ICAO regions.
- 1.3.2 The SES Regulations are also binding on States that have entered into bilateral or multilateral air transport agreements with the EU. These include: Norway, Lichtenstein and Iceland (EEA Agreement); Albania, Bosnia and Herzegovina, Croatia, the former

² According to Article 2 of the performance scheme Regulation, “*Just Culture*” means a culture in which front line operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, wilful violation and destructive acts are not tolerated.

Yugoslav Republic of Macedonia, Serbia, Montenegro, the United Nations Interim Administration Mission (UNMIC) in Kosovo (ECAA Agreement) and Switzerland (EU-Switzerland aviation agreement).

- 1.3.3 In order to be pragmatic, as far as EU-wide target setting is concerned, there is a need to consider States which have effectively established NSAs, which have been involved in the discussions related to the performance scheme at the Single Sky Committee (SSC) and which are subject to specific legal requirements to develop a National/FAB Performance Plan by June 2011.
- 1.3.4 Throughout this document, the proposed EU-wide targets are meant to cover:
- the 27 EU Member States plus Norway and Switzerland³ (29 States);
 - the airspace controlled by these States in the ICAO EUR region as well as the Canaries FIR (Spain), Bodø FIR (Norway) and NOTA/SOTA (UK/Ireland)⁴.
- 1.3.5 The geographical scope used for EU-wide targets is illustrated in Figure 1-1 below. This scope has been checked with the European Commission and there was no explicit objection during the consultation meeting with NSAs on 23 June 2010. NSAs' written comments are presented in Annex II of Appendix A.
- 1.3.6 The PRB understands that these 29 States are required to develop a Performance Plan by end June 2011.

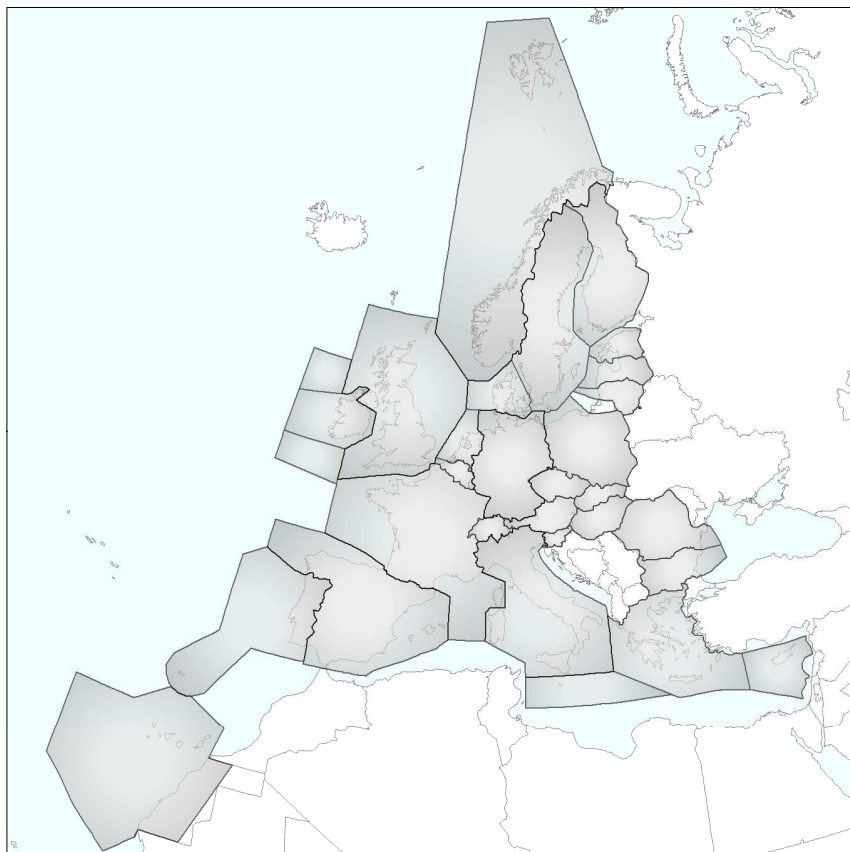


Figure 1-1: Geographical scope of EU-wide targets

³ A formal legal process is required to ensure the inclusion of Norway and Switzerland, both EFTA States, in the performance scheme through the EEA agreement and the EU-Switzerland agreement.

⁴ The Santa Maria FIR is not included in the geographical scope on the basis that it is operationally very different from other areas and would require specific KPIs.

1.4 Approach to proposing EU-wide targets

1.4.1 When developing its proposals for EU-wide targets, the PRB has applied a number of key principles:

- **Primacy of Safety:** ANS safety is ensured through the second pillar of the SES II package (Safety), notably Regulation (EC) No 216/2008 as amended by Regulation (EC) No 1108/2009 [see Section 3.2]. The impact of EU-wide performance targets has been checked with EASA’s active involvement during all phases of the target setting process.
- **Interactions between KPAs:** When proposing targets, due account is taken of interactions between the four KPAs (safety, environment, capacity and cost-efficiency) at the EU-level. The PRB notes that interactions between KPAs are different at EU-wide and local levels [see Section 3.6].
- **Robustness of evidence:** The evidence presented in the Consultation Document and in this final report is based on thorough and rigorous analysis. For each KPA where a quantified EU-wide target is proposed, different sources of evidence were collected and combined to establish the basis of the proposed targets.
- **Consultation and transparency:** The PRB has submitted its initial proposals to a formal consultation and made the feedback public in Appendix B⁵. The final proposals were developed taking feedback from stakeholders into account. Responses are given to individual comments wherever possible in the time available so as to ensure a maximum level of transparency.
- **Ambition combined with realism:** The PRB has been very careful in weighing the evidence and balancing the diverging comments received, so that the proposed targets are at the same time challenging, stretching the boundary, while being also realistic and achievable. This delicate balancing act involved rigorous analysis and expert judgement.
- **Consistency:** The analysis is based on a consistent set of assumptions and traffic forecast.
- **Independence:** The PRB has developed these proposals in an independent and impartial way, guaranteed by the balanced composition of the PRB and the collegiate nature of its conclusions.

1.4.2 In developing the proposed values for the EU-wide targets, the PRB applied these key principles, used top-down (system level) and bottom-up (national level) analyses, considered existing targets (including those in the ATM Master Plan and those adopted by the EUROCONTROL Provisional Council), took the comments received into account and applied expert judgement to reach balanced conclusions.

1.4.3 It is important to stress that, as foreseen in Article 16.1(a) of the performance scheme Regulation, the Commission may decide to revise the EU-wide targets before the beginning of the reference period when it has substantial evidence that the initial data, assumptions and rationales used for setting the initial EU-wide targets are no longer valid.

1.5 Consultation process

1.5.1 In order to prepare for EU-wide targets, the EC supported by the PRC has conducted a number of consultation activities including public workshops, NSA questionnaire and

⁵ Except where requested by the author.

workshop, and bi-lateral meetings with interested parties. The results of the initial activities are described in Annex II of Appendix A.

1.5.2 On 2 August 2010, the PRC published a Consultation Document (see Appendix A), setting out the PRC's initial proposals for the EU-wide targets and the rationale on which these were based.

1.5.3 By 3 September 2010 (the closing date), 63 comments/responses were received from a wide range of stakeholders, covering CAAs/NSAs, ANSPs, airspace users, airports, professional staff representatives and from States across Europe as illustrated in Figure 1-2 and the table below. The magnitude and quality of comments received by the different stakeholders is a clear indication of the importance of EU-wide target setting for the industry.

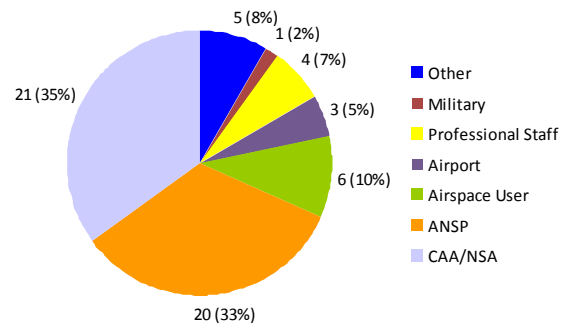


Figure 1-2: Summary of source of consultation responses

Sector	Total	Respondents
DGAC/CAA/NSAs	21	States: FABEC, France (DTA), Spain, Ukraine, NSAs: Armenia, Austria, Belgium, Cyprus, Denmark, Finland, Greece (HANSA), Hungary, Italy (ENAC), Norway, Poland, Portugal (INAC), Spain (AESAs), Romania, Slovakia, Sweden, UK.
ANSPs	21	AENA, ANS CZ, Austro Control, AVINOR, Belgocontrol, DFS, DSNA, EANS, ENAV, HungaroControl, IAA, LfV, LNVL, MUAC, NATS, Naviair, NAV Portugal, PANSAs, ROMATSA and Skyguide + general comments from CANSO (alternate format).
Airports	3	ACI Europe, BAA, Zürich Airport
Airspace users	7	Air Berlin, BA, ELFAA, ERA, IACA, IATA & AEA (Air France/KLM, Alitalia, BA, LOT Polish Airlines, Lufthansa Group, SAS).
Military	2	Italian Air Force and a limited response from the Spanish Air Force.
Professional staff	4	ATCEUC, ETF, IFATCA, IFATSEA.
Other	5	Danish Aviation (Trade association), Danish Meteorological Institute, Federation of Norwegian Aviation Industry, one staff member of HCAA, The Boeing Company.

Table 1-3: Summary of respondents by sector

1.5.4 The Consultation Document requested written input from the stakeholders on specific questions such as:

- the analysis and evidence presented;
- the weight to be given to specific evidence;
- the identified scope for performance improvement by the end of RP1;

- the EASA and PRB role to monitor the implementation of State Safety Programmes (SSP) and need for an aggregated safety data repository serving both needs;
- the priority amongst KPAs subject to EU-wide targets during RP1; and
- the approach to setting alert thresholds.

1.5.5 The PRB is grateful for the constructive engagement of stakeholders as part of the consultation process. Arguably the timing for the written consultation was not ideal and one key lesson for the preparation of future EU-wide targets is to ensure that the written consultation does not occur in the middle of the summer break. It was however inevitable in view of the very tight deadlines set by the Legislator for the first period.

1.5.6 A detailed summary of the consultation responses is provided in Appendix B. The direct impact of the consultation on the proposed targets is described in Chapter 3.

1.5.7 It should be noted that the consultation addressed the setting of EU-wide targets. Many of the consultation responses raised issues that will be relevant when setting National/FAB targets in 2011, but this is not the subject of this report. It is important to note that the setting up of National/FAB targets is the responsibility of States and NSAs, not of the PRB.

2 Single European Sky and tools to improve performance

2.1 Background

- 2.1.1 This chapter describes the key features of the performance scheme and the main SES tools available to improve performance.
- 2.1.2 The performance scheme of the Single European Sky legislation (SES II) introduces a significant change, where all major stakeholders involved in the provision of air navigation services (ANS) are tasked to deliver targeted performance improvements across the KPAs of safety, environment, cost-efficiency and capacity [see Article 11 of Ref iii and Ref i]. This will be done through the adoption of National/FAB performance plans containing performance targets and incentives for each fixed reference period.
- 2.1.3 The effective implementation of the performance scheme combined with the other tools in the SES toolbox (see Section 2.4) will contribute to the sustainable development of the aviation industry by providing improved safety, greater reliability of services, more direct flights, civil-military co-ordination and potentially lower charges to airspace users and lower fares to passengers and freight users.
- 2.1.4 Finally this chapter also presents the latest STATFOR traffic forecasts, a critical information for the target setting process.

2.2 Performance scheme

- 2.2.1 The performance scheme is one element of the SES II package adopted by the European Parliament and the Council in October 2009 [Ref ii]. It is further developed in a specific Commission Regulation adopted in July 2010 [Ref i].

Overview

- 2.2.2 The requirement to establish a performance scheme is defined in Article 11 of the framework Regulation [Ref iii]: “To improve the performance of air navigation services and network functions in the single European sky, a performance scheme for air navigation services and network functions shall be set up”.
- 2.2.3 In particular Article 11(6) required the Commission to adopt implementing rules defining the detail of the performance scheme. The preamble of the performance scheme Regulation defines the objectives as follows:
- **Recital 2:** The performance scheme should 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;
 - **Recital 4:** The performance scheme should be set up and operated with a long term view on the high level societal goals.
- 2.2.4 Under the legislation, the EC is responsible for running the performance scheme, including the adoption of EU-wide targets and the consistency assessment of National/FAB performance plans. In this role, it will be supported by a PRB [Ref iv] providing independent, evidence based analysis to contribute to these assessments.

Key features

- 2.2.5 The performance scheme is based around four KPAs (safety, environment, capacity and cost-efficiency) for which KPIs are established to monitor and drive performance. The KPIs are discussed in Chapter 1 above (see Table 1-1).
- 2.2.6 The performance scheme operates over fixed reference periods. The first reference period (RP1) is for three years (2012 to 2014), subsequent reference periods are anticipated to be for five years.
- 2.2.7 Each reference period consists of the following phases:
- EU-wide performance targets are adopted by the EC following the regulatory advice of the SSC, relevant inputs from the NSAs and comments from other interested parties. The current document is part of the EU-wide target setting process which is described in more detail in the Consultation Document at Appendix A. EU-wide targets must be adopted by the EC at least 12 months prior to the start of the reference period.
 - Performance plans are elaborated at either national or FAB level by the relevant NSAs and are adopted by the Member States at the latest six months prior to the start of the reference period. Performance plans should be developed in accordance with the template provided in Annex II of the performance scheme Regulation. Performance plans contain national targets and apportionment of those targets to the relevant ANS providers along with appropriate incentive schemes. These performance plans are developed in collaboration with ANSPs and are subject to local stakeholder consultation.
 - The EC assess the consistency of the performance plans with the EU-wide targets in accordance with the consistency criteria established in Annex III of the performance scheme Regulation. The EC may seek revisions if it is felt that National/FAB plans are insufficient to achieve the EU-wide targets.
 - Performance monitoring and reporting is conducted at both local and EU-wide level during the reference period by NSAs and PRB/EC respectively – with reports provided at least annually. Performance is monitored against the targets; NSAs are responsible for applying the agreed incentive schemes to ensure that targets are met. The EC can request action is taken by the NSAs if there is evidence that the targets will not be met.
 - Alert thresholds are established at both EU and local level to enable a revision of targets where the underlying assumptions are significantly changed by occurrences outside the control of the ANSPs.
 - Following the end of the reference period, an assessment of the achievement of the performance targets is conducted. The legislation also provides for regular reviews of the effectiveness of the performance scheme prior to each reference period. It is anticipated that the KPIs used in each reference period will evolve to drive ANS performance as the EATMN develops.
- 2.2.8 Clearly, the EU-wide performance targets are important in setting the ambition for each reference period and are expected to drive the National/FAB behaviour in terms of performance levels to be achieved.

2.3 SES and existing objectives

2.3.1 Figure 2-1 provides the SES objectives as stated in the Article 1 of the SES framework regulation [Ref iii] plus two sets of existing objectives and targets:

- the European ATM Master Plan, endorsed by the EU Council, and
- the EUROCONTROL PC.

2.3.2 These existing objectives have been taken into consideration by the PRB in proposing EU-wide targets under the Performance Scheme.

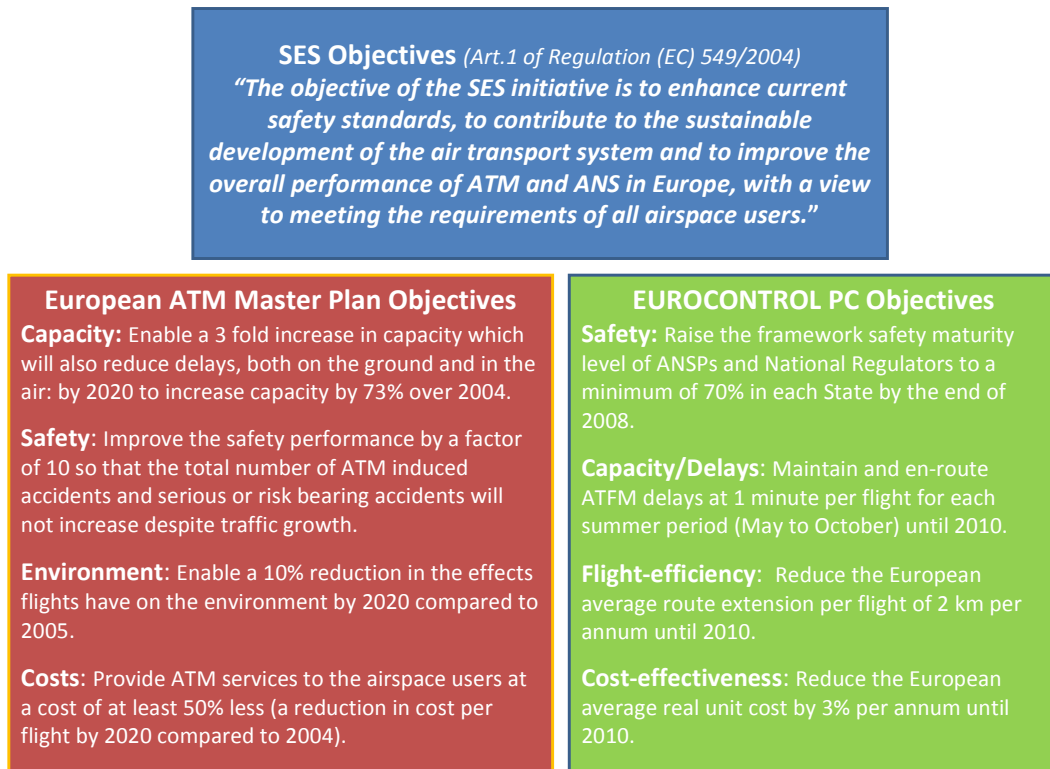


Figure 2-1: SES objectives and existing targets

2.4 SES tools to improve performance

2.4.1 To deliver performance improvement, the SES II package includes a number of tools to be used by the industry, as described below.

Performance scheme

2.4.2 ANS performance has been improving significantly in recent years [Ref v], even before performance scheme mechanisms were applied. With greater focus on planning and accountability for performance, target setting, monitoring, incentives and corrective actions at both European and National/FAB levels under the SES performance scheme, ANS performance improvements are expected to accelerate⁶.

EASA

2.4.3 The extension of EASA competency to ANS and Airports will reinforce the regulation, oversight and monitoring of ANS safety, and has a central role in the proposed approach to safety performance under the performance scheme (see Section 3.2 below on Safety).

⁶ Of course, the current high level of uncertainty and negative impact from the economic crisis need to be taken into account.

Charging Scheme

- 2.4.4 The revised charging scheme (Ref vi), notably the replacement of the full cost recovery system by “determined costs” and risk sharing, combined with target setting under the performance scheme, provides the following elements of performance improvement:
- Incentives for ANSPs to contain their costs as they may keep part of the surplus;
 - Additional revenue when traffic is higher than forecast, which provides financial resources for ANSP to increase capacity beyond initial plans and therefore contain delays when traffic is above forecast;
 - Capped ANSP exposure to traffic risk, which limits financing costs and safeguards their financial viability; and
 - Further improved accountability and cost-consciousness of ANSPs, under NSA oversight.
- 2.4.5 In the absence of mandatory incentives on delays, it is critical that the charging scheme is applied in a way that minimises gaming and under-delivery of capacity.

Functional Airspace Blocks (FABs)

- 2.4.6 The PRB considers that FABs are potential key enablers of significant performance improvement across Europe, provided that they are effectively implemented.
- 2.4.7 For RP1, the PRB considers that the establishment of FABs should lead to a number of ‘quick wins’ such as common procurement, integrated training and airspace design leading to improvements in flight-efficiency, capacity and cost-efficiency whilst institutional and business restructuring to achieve large cost savings may take longer⁷. The main contributions to performance improvement from FABs are most likely to materialise in RP2.
- 2.4.8 One of the major benefits from FABs would be the rationalisation of support costs (investment, operating, non-ATCO staff), which represent some 70% of gate-to-gate ANSP costs, across ANSPs in a FAB [Ref vii].
- 2.4.9 Reasonably challenging EU-wide targets, beyond what States could do individually as reflected in their current plans, should therefore be set to encourage them to actively seek the potential benefits of FABs, and to support achievement of the SES goals by taking a FAB rather than a national focus.

Network Management and Design (NMD) Functions

- 2.4.10 The body responsible for NMD functions will have an essential role to play in improving ANS performance:
- in being given ownership of the EU-wide environmental target in the absence of mandatory local targets in RP1, as no organisation besides the European Commission would otherwise be responsible to ensure that the EU-wide target for environment is achieved;
 - in providing the best possible traffic forecasts, an essential element in target setting and performance management;
 - in coordinating and working with ANSPs to ensure that capacity plans match the forecasts, and that capacity delivery is adapted to match actual demand, an essential element for both capacity and cost-efficiency;

⁷ The PRB recognises that the short term benefits of FABs will vary according to the specific issues prevalent within each initiative.

- in integrating air traffic operations at airports and nearby airspace in the capacity planning and management process so as to optimise performance from a network perspective. There is a significant potential for improvement in terminal ANS in all 4 KPAs, even in the absence of performance targets in RP1;
 - in designing, planning implementation and applying an optimised trans-European route network, irrespective of national boundaries⁸, an essential element towards both improved environmental impact and users operating costs;
 - in informing the PRB on achievable performance when proposing EU-wide targets and providing reference values for assessing the consistency of National/FAB en route capacity targets (performance scheme Regulation, Annex III, §4);
 - by providing a proactive risk managed approach that improves the responsiveness of operational performance monitoring and if necessary corrective actions.
- 2.4.11 The PRB will need the support of the body responsible for NMD functions to discharge its responsibility for monitoring operational performance under Article 17 of the performance scheme Regulation.
- 2.4.12 The PRB understands that there may be some delay in adopting the network management and design (NMD) Implementing Rule and in the designation of the body responsible for NMD functions. The PRB is of the opinion that the NMD function is a key enabler for performance improvements at the network level and in particular an important actor for the achievement of the EU-wide capacity and environment targets. It is important that it is operational when the first reference period starts.

SESAR and the European ATM Master Plan

- 2.4.13 The timing of RP1 corresponds to the first implementation package (IP1) of SESAR as described in the European ATM Master plan [Ref viii]. IP1 is in essence a continuation, albeit with a new prioritisation, of the current implementation plans. It is largely included in the existing LSSIP/ ESSIP objectives [Ref ix] and ANSP business plans. Besides new investments, which are considered to be limited, the impact of SESAR implementation on ANS performance during RP1 is not quantified at this time, as indicated in a letter from the SESAR JU (17 May 2010).
- 2.4.14 The performance targets adopted for RP1 (2014) must dovetail with the longer term performance objectives adopted in the ATM Master Plan for 2020 (see Figure 2-1).
- 2.4.15 Most respondents to the Consultation Document (Appendix A) agreed that the impact of IP1 was included in ANSPs business plans, and those who provided an alternative response did so because IP1 was seen as either insufficiently defined or subject to adjustment⁹. However, half of CAA/NSAs, ANSPs and three of four Professional staff respondents expected the SESAR programme to have an initial upwards impact on the unit costs. This demonstrated a clear expectancy gap with airspace users who expect benefits from SESAR to be delivered in RP1.
- 2.4.16 The PRB reached the following two conclusions:
- the impact of IP1 on RP1 is to a large extent already accounted for in existing ANSP business plans and therefore accounted for in the analysis undertaken to develop the proposed EU-wide targets; and,
 - a close coordination is required with the SESAR JU to ensure alignment of the SESAR performance framework [Ref x] with the performance scheme for future

⁸ Taking into account States' requirements for Temporary Reserved Airspace.

⁹ In particular, see responses to questions 18 and 23 in Appendix B.

reference periods (in accordance with Article 3.3(b) of the performance scheme Regulation).

Conclusion

- 2.4.17 The different instruments of the SES II package together constitute powerful tools towards performance improvement already in RP1 (2012-14). The performance scheme is expected to foster the application of these tools and individual performance-oriented initiatives, resulting in a first step change in the speed of performance improvement from 2012 onwards. The EU-wide targets for RP1 must be sufficiently challenging to change behaviours within this time frame.
- 2.4.18 Implementation of the SESAR operational concept and technologies is expected to further increase the speed of performance improvements from 2015 onwards, so that the ATM Master plan performance objectives can be achieved in a timely manner.

2.5 Updated STATFOR traffic forecasts

- 2.5.1 EU-wide target setting and the subsequent development of performance plans by NSAs require the best available traffic forecasts for the entire reference period at European level.
- 2.5.2 Given the current economic crisis and its impact on traffic, it is recognised that the potential uncertainty in current forecasts is greater than normal. This was further exacerbated by the exceptional circumstances related to the severe disruptions caused by volcanic ash in the first half of 2010.
- 2.5.3 The PRB's initial proposals took into account the States' June 2010 traffic forecasts and the most recent STATFOR traffic forecasts, which were the May 2010 short term forecast, covering the period to 2011, and the February 2010 medium term forecast, covering the rest of RP1. The States' forecasts were slightly higher for 2010 and 2011, but for 2012-14 the STATFOR forecast was slightly higher.
- 2.5.4 On 10 September 2010, EUROCONTROL's STATFOR updated its medium term forecast for the EU27+2 States in relation to flights, and produced a medium term Service Units (SU) forecast¹⁰. The updated forecast for flights is higher throughout the period 2010-14, but whilst the updated forecast for SUs is higher for 2010-12, it is slightly lower in 2013 and 2014. This is summarised in Table 2-1, below.

¹⁰ See http://www.eurocontrol.int/statfor/public/standard_page/forecast_reports.html.

STATFOR	2010	2011	2012	2013	2014
May 2010 Base (SUs '000) ¹¹	98,084	102,143	106,410	110,208	114,321
September 2010 Base (SUs '000)	99,314	104,312	107,338	110,105	113,049
Difference (SUs '000)	1,230	2,169	928	-103	-1,272
% Difference	1.3%	2.1%	0.9%	-0.1%	-1.1%
May 2010 Base (Flights '000)	8,826	9,091	9,409	9,684	9,985
September 2010 Base (Flights '000)	8,875	9,283	9,552	9,799	10,066
Difference (Flights '000)	49	192	143	115	81
% Difference	0.6%	2.1%	1.5%	1.2%	0.8%

Table 2-1: Latest STATFOR traffic forecasts

2.5.5 Figure 2-2 compares the States' SUs forecasts published in June 2010 against the most recent STATFOR forecasts¹². The STATFOR forecast is higher throughout the period 2010-14; the difference peaks at 1.9% in 2011 before declining to 0.6% in 2014. By 2014, the STATFOR forecast is for a 17% increase in SUs compared to 2009 (compared to 2008 it is an increase of 9%) with +/-8% for the high and low scenarios.

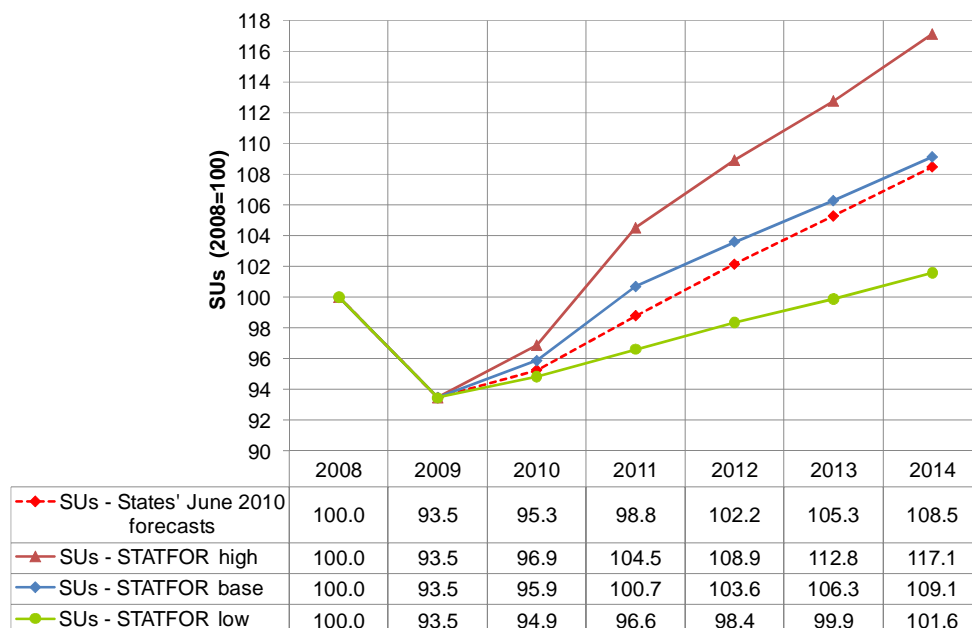


Figure 2-2: STATFOR latest SUs forecast (September 2010) and June 2010 States' forecasts

2.5.6 Figure 2-3 shows the most recent STATFOR forecasts for flights (there is no equivalent figure available from the States' forecasts)¹³. By 2014, the STATFOR forecast is for a 15% increase in flights compared to 2009 (compared to 2008 it is an increase of 6%) with +/-8% for the high and low scenarios.

¹¹ The forecast represent are a combination of the May 2010 SU forecast and the February 2010 medium term flight forecast (converted into Service Units using past trends).

¹² These forecasts cover all of the States to which the target will apply apart from Estonia and Latvia.

¹³ This forecast covers the EU27 States.

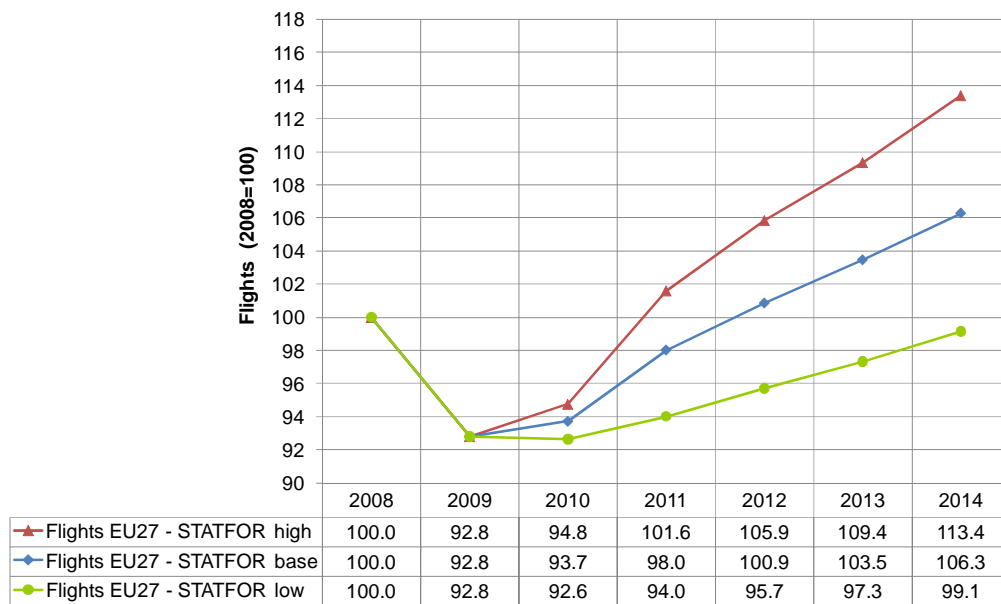


Figure 2-3: STATFOR latest flights forecast (September 2010)

2.5.7 The PRB considers that the September 2010 forecast is similar enough to the June 2010 forecast used in developing the Consultation Document (see Appendix A), to consider that the underlying analysis and assumptions remain valid. In proposing values for the EU-wide targets in Chapter 4, the PRB has taken full account of the September 2010 forecast.

3 Stakeholder comments on the initial EU-wide target proposals

3.1 Introduction

- 3.1.1 This chapter sets out the initial proposal for the EU-wide targets for each KPA, describing the PRB's consultation target range and the rationale for the proposed value, as well as a summary of the stakeholders comments/responses to the consultation process (see Section 1.5 above) and the PRB's opinion on those responses.
- 3.1.2 The reader should note that the PRB's proposals are for EU-wide targets and that States/NSAs are responsible for establishing National/FAB targets and that EU-wide targets are not directly applicable (See Section 4.5) .

3.2 Safety

- 3.2.1 Although the Legislator does not require EU-wide targets to be set for safety during RP1, the PRB recognises safety as the most important KPA. In the initial proposals presented in Appendix A, the PRB therefore set out the approach to safety for RP1. This is summarised below.
- 3.2.2 The unfortunate accidents over the last decade in Europe show that there is no room for complacency in addressing aviation safety. Maintaining or improving the level of safety is an overarching requirement when setting EU-wide target for other KPAs (environment, capacity and cost-efficiency). Therefore, EASA has closely been involved in the preparation of both this report and the initial Consultation Document.
- 3.2.3 As required by ICAO, the EU and its Member States will continue to constantly improve the level of aviation safety through the implementation of the State Safety Programme framework mandated by the relevant ICAO Annexes. In Europe, due to the specific institutional framework, this requires a cooperative approach between the Member States and the EU. A European Safety programme is therefore being developed around which the Member States will develop their own State Safety Programmes.
- 3.2.4 In order to facilitate the implementation of the SES II performance scheme and to ensure compliance with ICAO requirements, the European Safety programme is being developed in a way that is consistent with the performance scheme regulation [Ref i]. Notably, for ANS safety, EASA will develop the related safety plans in close cooperation with the PRB and will align its reference periods with the performance scheme.
- 3.2.5 During RP1, EASA will carry out its regulatory and oversight functions for ANS safety while working closely with the PRB to monitor the required KPIs. These will be included in the European Aviation Safety plan for its own first reference period.
- 3.2.6 Whilst no EU-wide performance target will be set for safety, the monitoring of the safety PIs during RP1 will create a favourable environment for more technical safety KPIs and their associated targets. Indeed, the performance scheme will further enhance safety in RP1 by ensuring the publication by States of harmonised data on safety occurrences and monitoring of both effectiveness of safety management and application of Just Culture. Transparency and uniformity of safety data is a key benefit of the performance scheme and must be ensured by the development of a single EU-wide safety monitoring system.
- 3.2.7 The PRB will work together with the EC, EASA, States and EUROCONTROL to define those indicators and appropriate alert mechanisms by the end of 2011.

Summary of consultation comments/responses

- 3.2.8 Stakeholders were asked to comment on a set of two detailed questions relating to (1) the monitoring of the implementation of SSP Safety Plans and (2) on the opportunity to have a comprehensive safety data repository (including voluntary safety data) open for use by PRB and EASA.
- 3.2.9 A majority of responses agreed that a safety PI on the implementation of SSP should be developed and that all EUROCONTROL Member States should be encouraged to adopt such an indicator. The level of agreement was consistent between the stakeholder groups. However, several stakeholders pointed out a number of concerns that would need to be addressed, namely:
- The respective roles of EASA and PRB need to be carefully defined to ensure clear responsibilities and lack of duplication of effort. Airspace users in particular consider EASA as being responsible for European safety.
 - The safety PI on SSP preparedness needs to be carefully examined in terms of consistency and added value in light of ICAO and EASA rules.
- 3.2.10 Similarly, a broad majority of responses agreed that a single safety data repository was required and that it should be open for use by the PRB and EASA. A number of stakeholders emphasized the need to carefully define the role and use of the safety data repository so as to avoid duplication with existing databases (e.g. ECCAIRS) and to ensure that it feeds the needs of States, EASA and the PRB in terms of data reliability and comparability. However, a majority of respondents consider that voluntary safety data should not be part of the repository. These respondents incorporated caveats including the need for consistency with ICAO, restriction on use, and support for Just Culture principles.

PRB's opinion

- 3.2.11 The PRB recognises the importance of ensuring a continuous improvement of aviation safety as required by ICAO. The PRB welcomes stakeholders' comments which are broadly supportive of the proposed way forward for safety.
- 3.2.12 In the coming months the PRB will work closely with EASA in the development of safety KPIs, targets and alerting mechanisms which will be introduced in the European aviation safety programme and its associated plan
- 3.2.13 In addition to monitoring the effectiveness of safety management of both NSAs and ANSPs and the implementation of Just Culture, the performance scheme KPIs include the use of classification of the Risk Analysis Tool to enable monitoring of:
- separation minima infringements;
 - runway incursions; and
 - ATM special technical events.
- 3.2.14 The PRB considers that the publication by States of harmonised data about these events, as required by the performance scheme Regulation will support an improved awareness of aviation safety.
- 3.2.15 In particular, the PRB and EASA will together consider how best to monitor the European and State Safety plans in consultation with stakeholders and will continue to encourage all EUROCONTROL Member States to adopt the PIs used in the performance scheme. The PRB will expect NSAs to specifically address actions to achieve a 'Just Culture' in the National/FAB performance plans.
- 3.2.16 The PRB welcome stakeholders support for a single data repository and recognise that this needs to be carefully defined in collaboration with stakeholders and should re-use

existing tools where possible. The PRB strongly recognizes that the principles of just culture must be adhered to.

3.3 Environment

PRB's initial proposals

3.3.1 Table 3-1 contains the PRB initial proposed range for the environmental KPI target as contained in the Consultation Document (see Appendix A).

EU-wide KPI	Baseline (2009)	Initial EU-wide target range for 2014
Average horizontal en route flight-efficiency	4.5% ¹⁴ of additional distance	Reduction of 0.6 to 0.8% point of additional distance

Table 3-1: PRB initial proposals for the environment KPI

3.3.2 Environmental sustainability is becoming increasingly important politically, socially and economically. The aviation industry has a responsibility to minimise its environmental impact, both globally and locally.

3.3.3 The KPI for EU-wide target setting is the average horizontal en route flight-efficiency. The route efficiency of ANS is already relatively high considering that the additional en route distance in 2009 was 4.5% on average (equivalent to 39 km per flight)¹⁴.

3.3.4 The PRB considered three sources of evidence for establishing the range for the EU-wide target for horizontal en route flight-efficiency:

1. Historical evidence shows an improvement rate of the KPI of 0.12% point per annum under active management of airspace design and use by EUROCONTROL and States/ANSPs.
2. Whilst recognising differences in operations, a comparison between Europe and the US suggests that an improvement of the KPI of 1% point should be achievable in Europe, considering that overall traffic density is twice as high in the US. However, the gap could not necessarily be closed within the time-frame of RP1.
3. The current plans already include some 350 route design improvement projects and more are expected. These improvements could yield 0.4% to 0.6% point reduction of the KPI by 2014. Improved Conditional Route (CDR) availability and route utilisation by airspace users could add a further 0.2% point by 2014.

3.3.5 The three pieces of evidence tend to converge and indicate that an improvement of 0.6% to 0.8% point of the KPI value from 2009 to 2014 would be achievable whilst challenging.

3.3.6 Adopting EU-wide targets in this range would decouple en route carbon emissions under ANS influence from traffic growth under the baseline traffic forecast¹⁵, and therefore allow a carbon-neutral traffic growth as far as ANS is concerned. Moreover, the economic benefits for airspace users in terms of reduced en route flight time and fuel burn would be in the order of €150-200M in 2014 versus the 2009 baseline.

3.3.7 Additional environmental benefits from improvements in the terminal areas, taxiways and vertical profiles should also be expected during RP1. The PRB will monitor performance to support KPI definition and target setting in RP2.

¹⁴ The values presented here are computed with 30 NM rings around airports. Work is ongoing to recalculate the values using 40 NM rings as specified in the performance scheme Regulation.

¹⁵ Improvement from 2009 to 2014 would be ~15% of the baseline for the median value of the target (-0.7%), which would compensate for traffic increase under the baseline traffic forecast in this period (15%), and therefore result in a carbon neutral growth for CO₂ emissions under ANS influence.

- 3.3.8 There is no legal requirement for States/FABs to set any environmental performance target for RP1. The body responsible for NMD functions (see also Section 2.4.10) should be the owner of the EU-wide target for environment, as no organisation besides the EC would otherwise be in charge to ensure it is met. This body could not, however, be held legally accountable for achieving the EU-wide target as airspace design and use remain State responsibilities. The risk mitigation of not meeting the EU-wide target on environment is in effect ensured by the regular monitoring by the EC, assisted by the PRB, and the resulting corrective actions¹⁶ if required.

Summary of consultation comments/responses

- 3.3.9 Stakeholders were invited to comment and provide feedback on five specific questions in relation to the EU-wide environment target in RP1.
- 3.3.10 Stakeholders observed that using last filed flight plan is not as beneficial as using actual trajectory because it does not show positive contributions such as ATC routing improvements, nor does it show negative effects such as holding.
- 3.3.11 Stakeholders would like to see an expansion of the proposed KPI to include vertical profile. Several stakeholders also proposed alternatives for the reference to the great circle distance, suggesting the shortest or optimal route.
- 3.3.12 Generally, airspace users favoured a comparison with the US level of performance reasoning that technology was similar and that as Europe progresses to a genuine single sky, the same degree of flight-efficiency should be achievable. Airspace users also observed that the gap could widen as the US further improves flight efficiency. ANSPs, conversely, reasoned that due to significant geographical, political, institutional and legislative differences the comparison was unfair and should not be used in setting the EU-wide environment target.
- 3.3.13 The majority of airspace users considered that the proposed target range (see Table 3-1) was the lowest acceptable and could be improved. ANSPs and some CAAs/NSAs questioned the likelihood of continuous improvement at the previous rate, given planned traffic growth and improvements already achieved (diminishing returns). ANSPs were also concerned about the implementation of SESAR IP1 and how it will affect the priority given to flight-efficiency improvements.
- 3.3.14 All ANSPs agreed that further improvements in route utilisation could be made through better application of FUA but they would require significant efforts from all stakeholders including military, CFMU – and in future the body responsible for NMD functions - and especially the airspace users themselves. ANSPs argued that the projected benefits however were difficult to quantify, there was little evidence to support, or disagree with the projected figure of 0.2% point in route utilisation. Airspace users stated that the proposed improvements would be possible during RP1.
- 3.3.15 Stakeholders were relatively diverse in their opinions about the combined airspace design and route utilisation improvements:
- airspace users considered the evidence sufficient to support a target of 0.6% to 0.8% point, but felt that more challenging targets should be set to drive flight-efficiency improvements;
 - ANSPs generally considered the evidence to be insufficient and thought that the target range proposed was challenging and generally unachievable; and
 - CAAs/NSAs were tended to be between these positions but most suggested that the evidence only supported setting a cautious target.

¹⁶ In accordance with art. 17 of the performance scheme Regulation.

- 3.3.16 Many stakeholders noted the significant problems in terms of differing agencies and agendas concerned and that significant improvement will require a concerted effort from all stakeholders.

PRB's opinion

- 3.3.17 Like all modes of mass transport, aviation has an impact on the environment. The PRB supports the general stakeholders' acknowledgment that the industry has a responsibility to improve aviation efficiency, in view of the environmental benefits to society and economic benefits to airspace users.
- 3.3.18 The PRB considers that the use of the last filed plan as a proxy for actual trajectory is reasonable considering that the former is the only measure that can be uniformly and consistently applied to all EU27+2 States for target setting for RP1. The PRB is strongly committed to continue to work with stakeholders to improve the quality of the environment KPI to include actual route flown and vertical profile in flight-efficiency calculations by RP2. The goal in the near future should also be to measure planned, actual, and optimum fuel burn.
- 3.3.19 In view of this, the PRB proposes EU-wide environment targets that will challenge all stakeholders to improve flight-efficiency to the greatest extent possible, whilst upholding safety and enabling capacity management.
- 3.3.20 The PRB considers the NMD functions to be a key enabler to the achievement of the environmental target. The PRB believes that, before RP1 starts, the legislative process leading to adoption of the necessary implementing rules and designation of a body responsible for NMD functions to support achievement of the environment target should be completed.
- 3.3.21 The PRB further recognises that airspace user behaviour in selecting the shortest available route is an important enabler for achieving the environmental target. The PRB remains committed to developing a KPI on the use of Conditional Routes to support this further.

3.4 Capacity

PRB's initial proposals

- 3.4.1 Table 3-2 contains the PRB initial proposed range for the capacity KPI target as contained in the Consultation Document (see Appendix A). Readers should note that the EU-wide capacity indicator is expressed in terms of delay per flight and that flights are not additive (in average a flight crosses between 2 and 3 States in Europe). Therefore the EU-wide target does not transpose directly to individual States.

EU-wide KPI	Baseline (2009)	Initial EU-wide target range for 2014
En route ATFM delay	0.9 min./flight	0.7 - 0.35 min./flight

Table 3-2: PRB's initial proposals for the Capacity KPI

- 3.4.2 The timely provision of ATC capacity and its pro-active management are necessary to deliver a European system with acceptable levels of en route ATFM delays. Delays beyond this level have significant costs to airspace users and their passengers.
- 3.4.3 The KPI for the EU-wide capacity target is the average en route ATFM delay per flight for the whole year. The PRB proposed that all delay causes should be included in the EU-wide target.
- 3.4.4 The PRB considered three sources of evidence for establishing the range for the EU-wide target for capacity:
1. **Historical analysis** of ATFM en route delays in order to evaluate the actual

- performance achieved in the past;
2. **System wide economic optimum:** Calculation of the optimum en route ATFM delay based on the trade-off between the cost of capacity and the cost of delays with simulation tools; and
 3. **Forward looking analysis:** Projection of the en route ATFM delay level in 2014 based on the current capacity enhancement plans for RP1.
- 3.4.5 On the basis of the evidence, the PRB's initial proposal was for a target for EU-wide capacity in the range of 0.35 to 0.7 minute en route ATFM delay per flight for 2014.
- 3.4.6 The existing EUROCONTROL PC target of 1 minute per flight in the summer period corresponds to 0.7 minute per flight for the full year (SES KPI). This is the upper bound considered by the PRB. In 2009 a delay of 0.94 minute was achieved. The PRB considers that significant improvement is possible during RP1.
- 3.4.7 The economic optimum, minimising the total costs of ATC capacity and ATFM delays borne by airspace users, corresponds to 0.2 minute of capacity-related delay per flight. Sensitivity analysis shows that the economic optimum is not significantly affected by assumptions on the cost of delay, capacity-cost elasticity, and traffic levels.
- 3.4.8 Based on historic evidence, the PRB proposed to add a provision of 0.15 minute per flight for non-capacity related delays (e.g. weather) in the EU-wide target. The lower bound considered by the PRB was the optimum en route delay level and was therefore approximately 0.35 minute per flight (all delay reasons included). The upper bound was close to current ACC capacity plans, while the lower bound would require additional effort towards improved capacity. The potential delay cost savings in 2014 vs. the 2009 baseline ranges between €150M and €400M depending on the selected target.
- 3.4.9 In the longer term, ANSPs should be requested to deliver en route capacity close to the economic optimum. It is however acknowledged that structural decisions concerning ATC capacity (recruitment, investments, airspace design and operational arrangements) typically have an operational effect after 3-5 years and therefore it is not necessarily possible to reach the economic optimum within RP1.

Summary of consultation comments/responses

- 3.4.10 Stakeholders were invited to comment and provide feedback on six specific questions in relation to the EU-wide capacity target in RP1.
- 3.4.11 Overall, the majority of respondents agreed that a holistic approach which includes all ATFM delay causes is essential to drive the desired behaviour at an EU-wide level. Whereas all airspace users, airports and other respondents agreed with the proposal, the majority of CAAs/NSAs and ANSPs supported the proposed holistic approach but pointed out the need for an appropriate system of breakdown of the causes of ATFM delays to reflect accountabilities.
- 3.4.12 The majority of the respondents agreed that there should be a provision in the EU-wide target for weather and non-ANS related delays based on historic evidence. In addition, some ANSPs proposed that there should be a link between the provision and traffic growth.
- 3.4.13 The views on the ability to significantly reduce en-route ATFM delay already in RP1 differed according to the category of stakeholders:
- airspace users and airport respondents fully agreed with the statement; whereas,
 - a number of ANSPs and CAA/NSA voiced concerns about the pace and feasibility of significant improvement already in RP1.
- 3.4.14 There was a mix of responses on the proposed approach and scenarios that have been used for the calculation of the system wide optimum delay. The majority of CAA/NSA

and some ANSPs agreed with the proposed approach, but a number of ANSPs did not support the approach. While the benefit of determining a system-wide economic optimum was generally acknowledged, a number of stakeholders felt that there was not enough documentation to test and assess the approach and some ANSPs argued that the evidence from the theoretical economic optimum should be given a low weight in RP1.

- 3.4.15 The PRB proposal to have an EU-wide en-route delay target for 2014 closer to the estimated economic optimum was overwhelmingly supported by airspace users and airports, while there was a mix of responses from CAAs/NSAs and other respondents. The majority of CAAs/NSAs did not fully support the proposal and felt that a target closer to 0.7 minute per flight would be more realistic. ANSPs generally did not support the PRB proposal and reiterated their concerns in terms of pace and feasibility of significant improvement for RP1. Similarly, professional staff argued that the current staffing level in several ACCs reduces the possibility to achieve challenging targets by 2014.
- 3.4.16 The feedback on the proposed target range (see Table 3-2 above) of an average delay between 0.7 and 0.35 minute per flight by 2014 revealed considerable differences between the various stakeholders:
- airspace users were generally in favour of an EU-wide target of 0.35 minute per flight or lower;
 - generally, ANSPs considered the proposed range to be too ambitious for RP1, suggesting that a target of 0.7 minute per flight was already very challenging for RP1. ANSPs reiterated the need to consider trade-offs with the cost-efficiency target, planned system upgrades and the short lead time to revise capacity plans for RP1;
 - CAAs/NSAs respondents generally considered the range to be appropriate but suggested that an EU-wide target close to the economic optimum would not be realistic for RP1.

PRB's opinion

- 3.4.17 The PRB welcomes that the majority of respondents support that all ATFM delay causes should be included for the EU-wide capacity target as this should ensure that all types of delay are properly addressed. At the same time, the PRB recognises the need for an appropriate breakdown system at National/FAB level, especially when financially incentivising targets are applied to ANSPs.
- 3.4.18 The PRB notes that the majority of respondents supported the proposed inclusion of a provision for non-ANS related ATFM en-route delay in the EU-wide target, based on historic evidence. The suggestion that the provision should be linked to traffic growth is interesting, but the PRB considers that using current evidence, a provision per flight irrespective of traffic growth is a sensible and pragmatic approach for RP1. If deemed necessary the provision may however be updated or revised for RP2.
- 3.4.19 The PRB welcomes that a large number of respondents agreed that a reduction of en-route ATFM delay was possible but noted the differing views among stakeholder groups about the scope for improvement that can be achieved in RP1. While the PRB is mindful that the scope for improvement in RP1 needs to be seen in the context of the cost-efficiency target, planned capacity enhancement initiatives in RP1, and the short lead time to adjust existing capacity plans, the PRB understands the urgency expressed by airspace users to reduce delays and believes that significant improvement is already possible in RP1.
- 3.4.20 The PRB notes the concerns expressed by some stakeholders on the approach used for the calculation of the system wide economic optimum and understands that more clarity and transparency is sought. These are planning tools developed over the past 10 years

together with stakeholders within the European Network Capacity Planning Process¹⁷. Although there may be scope for improving the tools, the PRB considers them to be useful for EU-wide simulations.

- 3.4.21 As there appears to be some confusion about the applicability of the system wide optimum at National/FAB level, the PRB would like to clarify that the National/FAB economic optimum depends on the prevailing local parameters which differ from place to place. Moreover, according to Annex III of the performance scheme Regulation [Ref i], the breakdown by State provided by EUROCONTROL capacity planning process will be used to ensure the consistency of the National/FAB plans with the European capacity target.
- 3.4.22 While there is a large consensus that an economic optimum could be an appropriate medium to long term target, the PRB takes note of the differing views expressed by stakeholders on how quickly such an optimum could be achieved. The potential additional costs for ANSPs to get close to such a value already in RP1 have to be balanced with the benefits for the airspace users. The PRB intends to strike the right balance between stakeholders' interests and commercial feasibility.
- 3.4.23 While the PRB acknowledges that it might not be possible to reach the economic optimum already in RP1, the PRB considers that it should be the reference target to be reached in future periods.

3.5 Cost-efficiency

PRB's initial proposals

- 3.5.1 Table 3-3 contains the PRB initial proposed range for the cost-efficiency KPI target as contained in the Consultation Document (see Appendix A).

EU-wide KPI	Baseline (2009)	Initial EU-wide target range for 2014
Average determined unit rate for en route	€63.8/SU	€49 - €51/SU (5.0%-4.5% p.a. reduction)

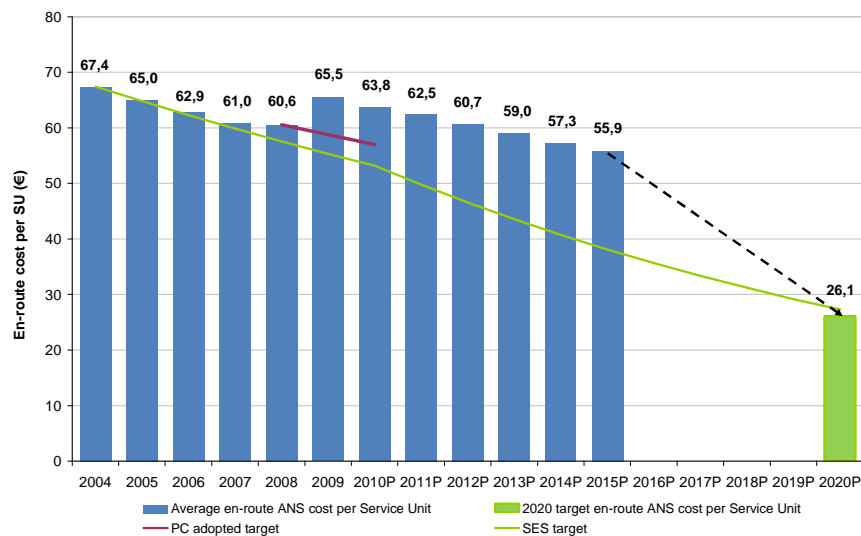
Table 3-3: PRB's initial proposals for the Cost-Efficiency KPI

- 3.5.2 In the context of the global economic recession, and the financial difficulties of airspace users in particular, there are high expectations that a combination of incentives provided through the revised charging scheme (see also Section 2.4.4 above) and identified room for improvement among ANSPs will lead to improved cost-efficiency across the European ATM industry.
- 3.5.3 The KPI for the EU-wide cost-efficiency target is the en route determined unit costs per service unit at the end of the reference period.
- 3.5.4 The PRB considered four sources of evidence for establishing the range for the EU-wide target for cost-efficiency:
1. **An analysis of EU-wide historic and forward-looking trends** of ANS real unit costs, including the latest available information on costs and traffic forecasts submitted by States for the period 2010-2014 in the context of the June 2010 session of the Enlarged Committee for Route Charges.
 2. **A high level comparison of unit costs in the EU and the US FAA Air Traffic Organisation.**
 3. **An analysis of potential scope for unit costs reduction based on ANSP benchmarking;** and

¹⁷ See References 12 and 13 in the Consultation Document for additional details.

4. Current results of **econometric benchmarking** analysis.

- 3.5.5 The structure of ANSP costs is currently characterised by a high proportion of staff costs (60%), and a significant proportion of depreciation and capital costs (20%). This impacts the dynamics of ANSP economic efficiency improvement.
- 3.5.6 In its consideration of the evidence the PRB has placed greater importance on historic en-route cost trends and ANSP benchmarking analysis, than US-EU and econometric benchmarking analysis.
- 3.5.7 On the basis of this evidence, the PRB's initial proposal was for an EU-wide cost-efficiency target for RP1 to reach a value of between €49 and €51 determined unit costs per SU in 2014 (€2009 prices). This proposal was based on an annual reduction of the determined costs per SU of between 4.5% and 5% per annum in real terms over the period 2009-2014.
- 3.5.8 Given a traffic increase of 3% p.a., an improvement of 4.5% and 5% of the real unit cost would result in total ANSP revenue remaining constant in **nominal** terms with 1.5% and 2% inflation respectively.
- 3.5.9 Potential cost savings in 2014 vs. the 2009 baseline are very significant, in the order of €1,500 – 1,600M, depending on the target selected within the intended range.
- 3.5.10 The political target of the ATM Master Plan to halve the real unit cost from a 2004 baseline could be achieved by 2022 with an improvement rate of 5% p.a., and by 2024 with an improvement rate of 4.5%. The proposed target range was therefore broadly consistent with existing political targets, taking into account the time shift in traffic growth arising from the economic crisis. However, as shown in Figure 3-1, reaching the political target by 2020 would require an acceleration of improvement in excess of 6% in RP2 (2015-19).



Source: Data submitted by States for calculation of route charges; SESAR output D2 (performance targets)

Figure 3-1: Trend in en route unit costs compared to SES targets

Summary of consultation comments/responses

- 3.5.11 Stakeholders were invited to comment and provide feedback on nine specific questions in relation to the EU-wide cost-efficiency target in RP1.
- 3.5.12 Most respondents believed that the most important area for cost reduction was staff, although many noted that this may be problematic. Several ANSPs and Professional

- staff respondents disagreed with this, believing that reductions in staff costs were difficult.
- 3.5.13 Whilst the majority of respondents acknowledged that it was appropriate to evaluate historic trends as part of the process of determining targets, many considered that only partial conclusions could be drawn from historic trends.
- 3.5.14 The majority of respondents believed that a EU-wide cost/traffic elasticity lower than 1 would be maintained during RP1, but some respondents highlighted as an issue the short term volatility of the elasticity at local level.
- 3.5.15 Most stakeholders believed that at least some weight should be given to States' most recent (June 2010) costs and traffic submissions to the Enlarged Committee for Route Charges during RP1.
- 3.5.16 Around half of the CAAs/NSAs and ANSPs and three out of four professional staff group respondents expected an initial upwards trend in unit costs from the SESAR programme, however many of the 'upwards' respondents anticipated that it would be followed by a downwards movement as efficiencies were realised. This strongly contrasts with airspace users view who considered that the impact should be a downwards trend in unit cost already as of RP1 arguing that since existing investment costs should already be included in the forecast data, any savings achieved by avoiding unnecessary duplication should be achieved from RP1 onwards.
- 3.5.17 Similarly, a large proportion of ANSPs expect unit costs to move upwards as a result of FAB implementation during RP1. The CAAs/NSAs responses were rather mixed on the impact of FABs on cost-efficiency. On the other hand, airspace users unanimously expect a downwards impact on unit costs, arguing that the improvement will be fostered by challenging EU-wide targets.
- 3.5.18 The majority of respondents recommended caution when interpreting the results of benchmarking with the US FAA/ATO, given their geographical, social, organisational and political differences. A few respondents added that cross-industry benchmarking would be interesting and appropriate, especially in those industries where shift-working was prevalent. With the exception of the Airspace users group, the vast majority of respondents consider that a low weighting should be given to benchmarking with the US-FAA ATO in setting the cost-efficiency target for RP1.
- 3.5.19 Support for the methodology used for ANSP benchmarking was limited. Many respondents among CAAs/NSAs, ANSPs and Professional staff groups believed that, although useful, it did not take into account important exogenous factors which differed between States (e.g. salaries, maturity in cost management and airspace complexity), and that it was not appropriate to use gate-to-gate benchmarking for an en-route KPI. On the other hand, airspace users argued that the benchmarking methodology did not sufficiently recognise the fact that even the "best in class" had significant scope for performance improvement considering the industry's full cost recovery legacy. Despite this, respondents predominantly thought that a medium weight should be assigned to ANSP benchmarking.
- 3.5.20 Respondents generally welcomed the econometric benchmarking used. However, 14 of the respondents did not answer this question (including 5 ANSPs), and several commented that they did not have sufficient in-depth knowledge to answer the question. Most believed a low weighting should be given to econometric benchmarking, on the grounds that the results were too volatile and therefore not mature.
- 3.5.21 The feedback on the proposed target range (see Table 3-3 above) of an average annual reduction of the unit determined costs between 4.5% and 5.0% (equivalent to reaching €51/SU and €49/SU by 2014, respectively) gave rise to considerable divergence between the various stakeholders:

- airspace users expect rates of annual unit cost reduction ranging from 6% to 10% (equivalent to reaching €47/SU and €38/SU by 2014, respectively);
- a large majority of the ANSP respondents believed that the proposed target range was too ambitious as the costs associated with the required structural changes were not properly considered;
- CAAs/NSAs respondents and Professional staff generally considered the range to be too challenging for RP1. Few CAAs/NSAs proposed to set a different baseline year (some proposed actual 2010, others forecast 2011). The French NSA proposed a target of €56/SU from a 2010 baseline (equivalent to an annual real unit cost reduction of 3%).

PRB's opinion

- 3.5.22 The PRB agrees with, and supports, the cost categories identified by industry stakeholders (staff costs, capital costs, support costs, EUROCONTROL costs) for potential cost containment. It also recognises that at a National/FAB level, local situations will lead to potentially different emphases for cost containment.
- 3.5.23 The PRB continues to value the results of the historic analysis, although it acknowledges that this took place under different charging and incentive schemes than what will be in place for RP1. The empirical link between traffic growth and unit cost trends is also acknowledged and the PRB presented 11 years of data in the Consultation Document including periods of traffic growth and decline to indicate how unit costs evolve over an economic cycle.
- 3.5.24 The PRB is responsible for proposing EU-wide targets. This necessarily has involved top-down, system-wide analysis. Detailed national performance plans and associated targets (including incentives) will be developed by States later in the performance scheme process.
- 3.5.25 The PRB recognises the potential value of analysing trends in cost-efficiency and productivity improvement from other regulated and unregulated industries, but understands the potential limitations from (1) a lack of consistent European-wide industry/sector data, (2) different cost structures, and (3) different regulatory and competitive environments. In preparation for EU-wide target setting for RP2, provided robust statistics are available, the PRB is committed to make the best use of data stemming from other industries.
- 3.5.26 The PRB recognises that the calculation of the cost/traffic elasticity depends on trends in traffic growth and the period of time over which it is calculated. However, with greater flexibility from ANSPs, the impact of incentives and the initiatives identified by FABs and then SESAR, it believes that an elasticity of well below 1 is achievable over the medium term. The PRB recognises that there will be greater volatility in local, short term measures of cost elasticity.
- 3.5.27 The PRB considers it is important to have reviewed States' latest forecasts as they contain the best available data about cost-efficiency plans. It understands that these have been prepared without full consideration of the new regulatory environment and an understanding of what is expected for performance improvement and therefore although indicative, more is expected. The PRB also understands that some costs (e.g. the expected return on equity) might be underestimated, but believes this should not be overestimated in view of the amended Charging Scheme.
- 3.5.28 Stakeholders' responses have confirmed the PRB's view that IP1 implementation costs are generally already included in ANSP plans and that significant benefits are not likely to materialise in RP1.

- 3.5.29 The PRB notes stakeholders' support for FABs providing a significant opportunity for operational and cost improvements in the future. However, it recognises that most ANSPs/FABs expect an increase in cost – from transition and transformation. This is an area where there is a fundamental mismatch between the view of the EC and airspace users that FABs must address fragmentation and performance improvement during RP1 and the views of ANSPs that RP1 will essentially include the start-up costs with the benefits being accrued later in RP2.
- 3.5.30 The PRB notes the reservations from stakeholders about the application of US-Europe benchmarking. It nevertheless considers that this analysis provides a useful insight into the scope for performance improvement with today's ATM/CNS technology. The PRB notes that the FAA ATO is not operating at an optimal efficiency level as identified by recent official US testimony reports¹⁸. Nevertheless it observes that the US-FAA ATO operates more efficiently than aggregated ATM in Europe. The PRB believes that the responses support its position of applying a relatively low weighting on this evidence for RP1 (compared to some other sources of evidence), but rather using it as an indication of what should be achieved in the medium term.
- 3.5.31 The PRB strongly believes that ANSP benchmarking can provide useful insights into the scope for improvements while recognising that benchmarking results need to be interpreted with a degree of judgement.
- 3.5.32 The PRB recognises that econometric benchmarking is a highly technical area and welcomes suggestions for further improvements of the model robustness. The PRB acknowledges that econometric benchmarking is less mature than other evidence presented in the Consultation Document and the support from respondents to place a relatively low weight on this evidence for RP1. However, it will continue to develop its work in this area in preparation for RP2.
- 3.5.33 The PRB notes the divergence in responses received from different stakeholders, some claiming too much and some a lack of ambition. There is a clear mismatch in expectations between airspace users and what ANSPs express they would be able to do. The PRB also notes CAAs/NSAs' relative prudence on the level of cost-efficiency ambition for RP1.
- 3.5.34 The target range in PRB's Consultation Document is based on an expectation of traffic growth recovery in RP1, allied with significant downside protection for ANSPs provided by the revised charging scheme Regulation.
- 3.5.35 The PRB considered a number of possible options for baselines. Given that 2010 actual data are not available, that using 2011 data may not encourage cost reductions prior to the start of the reference period, and that other targets are proposed with reference to 2009, on balance, 2009 is the appropriate baseline for all KPAs.
- 3.5.36 Using all the evidence at its disposal, and having received, read and analysed the responses to the consultation the PRB believes that the range of cost-efficiency improvement targets it presented in the Consultation Document remains appropriate.

3.6 Interactions between KPAs

- 3.6.1 In Section 7.4 of Appendix A, the PRB highlighted the nature of the potential interactions between each of the KPAs (safety, environment, capacity and cost-efficiency).

¹⁸ See e.g., United States General Accountability Office (GAO): "Next generation transportation systems: Status of Transformation and Issues Associated with Midterm Implementation of Capabilities" (March 2009), US DOT Office of the Inspector General, "Timely Actions Needed to Advance the Next Generation Air Transportation System" (AV-2010-068), October 2009.

- 3.6.2 The PRB's initial view was that it would be difficult to achieve the upper performance bound for all KPAs. A coherent set of EU-wide targets must be proposed that are achievable together and at the same time drive challenging improvements in economic, operational and environmental efficiency, while respecting the overriding safety requirements.
- 3.6.3 Following the sharp traffic downturn in 2009, STATFOR forecasts a fairly moderate increase of 6%-9% in traffic in 2014 compared to 2008 (see Section 2.5). Considering also the anticipated positive effect of the SES initiatives, the PRB considers that the trade-offs between the KPAs will be less significant than normal in the short term and that there is wider scope for performance improvement without incurring substantial (and currently unplanned) capital expenditure.

Summary of consultation comments/responses

- 3.6.4 In responding about the relative priorities of the KPAs, many responses stressed that safety must always be seen as the highest priority. This position is welcomed by the PRB.
- 3.6.5 The majority of airspace users' responses suggested that all KPAs should have a high priority. ANSPs' responses indicated a priority for capacity (rather than cost-efficiency or the environment) and whilst most States/CAAs/NSAs expressed an order of priority, there was no clear KPA with a higher or lower priority when considering this groups responses as a whole. The Professional staff agreed that all KPAs were high priority but noted that the lack of information about safety performance means that the balance between KPAs cannot be adequately assessed.
- 3.6.6 When discussing these inter-relationships in the Consultation Document at Appendix A, the PRB argued that at European system level the sharp traffic downturn in 2009 gave greater room for improvement over RP1 in the areas of delay and flight-efficiency. This view was not shared by ANSPs during the written consultation.
- 3.6.7 Many ANSPs and NSAs felt that further work is required to establish the trade-offs between the KPAs. ANSPs generally felt that targets need to be set to meet customer requirements in a safe and cost-effective way and performance targets will need to recognise the trade-offs. They believe the Consultation Document at Appendix A does not contain any evidence of the interaction between KPAs having been taken into consideration.
- 3.6.8 The airspace user respondents supported the PRB position that as traffic was recovering there was room for improvement across all KPAs. They also pointed out that capacity increases would lead to improved flight-efficiency and so in a dynamic context win-win solutions should be identified and pursued.

PRB's opinion

- 3.6.9 The PRB recognises the importance of applying a holistic approach across all the KPAs, and taking into account the interdependencies between KPAs when setting EU-wide targets.
- 3.6.10 The PRB analysis is at EU system-wide level. The PRB therefore maintains its stance on the greater flexibility to address performance improvement across the KPAs due to the traffic downturn whilst recognising that there can be some trade-offs at a national level related to traffic, the legal framework and working environment which will need to be duly considered by NSAs and Member States when setting National/FAB targets. The PRB expects that these local trade-offs, if any, are explicitly articulated and quantified as part of the National/FAB Performance Plans in order to enable consistency assessment by the EC/PRB.

- 3.6.11 Nevertheless, in proposing the cost-efficiency target (see Section 4.2) the PRB has been mindful of the need to explicitly account for additional costs required to achieve a reasonably ambitious EU-wide capacity target.
- 3.6.12 The PRB recognises that the current lack of harmonised safety EU-data makes the measurement of safety difficult. This in turn leads to issues when considering the impact of the other KPAs on safety. Safety will however continue to be assured through full and effective application of safety regulations and verification that this is the case under the second pillar of the SES II package (extension of EASA to ANS and airport).
- 3.6.13 The performance scheme will enhance safety measurement by requiring NSAs to publish statistics on separation minima infringements, runway incursions and ATM special technical events in harmonised manner using the risk classification scheme of the Risk Assessment Tool. Moreover, the PRB has worked closely with EASA to ensure that there is no known detrimental impact to safety through the other targets.
- 3.6.14 The PRB considers that whilst RP1 is a transition period, it is still appropriate to set targets that encourage a genuine performance driven behaviour from the ANS industry. The PRB believes from the evidence it has collected, taking into account the inter-relationships, that there is opportunity for performance improvement across all KPAs at European system level.
- 3.6.15 However, the PRB also recognises that there can be some trade-offs at a national level related to traffic, the legal framework and working environment, which will need to be duly considered by NSAs and Member States when setting National/ FAB targets.

3.7 Alert thresholds

- 3.7.1 Article 9(3) of the performance scheme Regulation requires that *“together with the adoption of the European Union-wide performance targets, the Commission shall define for each key performance indicator alert thresholds beyond which the alert mechanisms referred to in Article 18 may be activated. Alert thresholds for the cost-efficiency key performance indicator shall cover both traffic and costs evolution”*.
- 3.7.2 The alert mechanism is defined in Article 18 of the performance scheme Regulation and specifies that *“where, due to circumstances that were unforeseeable at the beginning of the period and are at the same time insurmountable and outside the control of the Member States, alert threshold(s) referred to in Article 9(3) is/are reached at European Union level, the Commission shall review the situation in consultation with the Member States through the SSC and provide proposals for appropriate actions within three months, which may include the revision of the European Union-wide performance targets”*.
- 3.7.3 It must be noted that the alert thresholds proposed by the EC/PRB are by default also applicable to National/FAB targets but that States, according to Article 18 *“may decide to adopt different alert thresholds in order to take account of local circumstances and specificities. In such case, these thresholds shall be set out in the performance plans and consistent with the thresholds adopted pursuant to Article 9(3). The deviations shall be supported by detailed justification.”*
- 3.7.4 The performance scheme Regulation has been designed to limit the use of such alert mechanisms in order to offer to stakeholders a stable regulatory environment during the reference periods.
- 3.7.5 The PRB considered each KPI individually and came to the following conclusions:
- **Safety:** There is no EU-wide safety performance target during RP1. Performance monitoring (Article 17 of the performance scheme Regulation) will include a notification to EASA if safety performance deteriorates and EASA will initiate corrective action as necessary;

- **Cost-efficiency:** the revised charging scheme Regulation contains a lot of protection against traffic and cost risks: in terms of traffic, traffic deviation by less than 2% are borne by ANSPs, between 2% and 10% traffic risk is shared between ANSPs and airspace users, beyond 10% full cost recovery applies (i.e. loss of revenue will be borne by airspace users). In terms of costs, uncontrollable costs are fully borne by airspace users. Given all these specific provisions, additional alert mechanisms for cost-efficiency do not seem warranted;
- **Capacity:** While ANSPs should be responsive to unforeseen increases in traffic within certain limits, they could not be held accountable for high delays arising from traffic levels well above the baseline forecast;
- **Environment:** En route horizontal flight-efficiency is not fully correlated to traffic. Nevertheless, traffic levels well above the baseline forecast might impact the route design and route utilisation, thus impacting the EU-wide environment target. The presence of effective NMD functions would greatly mitigate this risk.

Summary of consultation comments/responses

- 3.7.6 Most respondents supported the use of an alert threshold on deviation of traffic from the baseline assumption. Many respondents felt it should be lower than the 10% consulted upon so the mechanism is triggered by more likely events. Some ANSPs argued that insufficient work had been undertaken by the PRB on the alert mechanism. Airspace users, indicated that the traffic risk sharing model in the revised charging regulation at a national level was sufficient and did not require further thresholds at a EU-wide level.
- 3.7.7 Respondents suggested a range of values for the traffic alert threshold from the proposed 10% to 2%. Airspace users and airports, 5 NSAs and 3 ANSPs agreed with 10%. Three NSAs and 7 ANSPs suggested 5%. Some respondents argued that one value did not fit all and therefore national alert threshold levels would need to be tailored to local circumstances.
- 3.7.8 Airspace users agreed with the PRB that applying only a traffic alert threshold was sufficient at an EU-wide level. The majority of ANSPs suggested an additional threshold related to cost evolution should be included as it is required by Article 9(3) of the performance Regulation. A number of NSAs suggested that alert thresholds should be placed on all KPIs, including delays.

PRB's opinion

- 3.7.9 The PRB agrees that the alert threshold should be based on evolution of traffic against forecast and trigger a review of targets for all KPAs. The PRB continues to believe that the percentage of deviation should be 10% at the EU level, and accepts that NSAs may elect for a lower level at national level.
- 3.7.10 The PRB considers that the ongoing monitoring of ANS performance (defined in Article 17 of the performance Regulation) will enable ANSPs and NSAs to take action prior to the alert threshold being reached; the alert threshold itself should capture only significantly and unforeseen events.
- 3.7.11 The potential for an alert threshold based on evolution of the cost base is included in the performance Regulation; however this was included prior to amendments to the Charging Scheme regulation to include the pass through of uncontrollable costs. The evolution of the cost base will be monitored under Article 17 of the performance scheme and could be included in the national alert thresholds. In the spirit of best practice regulation, and providing the greatest level of certainty over the EU-wide targets over the whole of RP1, the PRB does not consider an EU-wide cost evolution alert threshold as necessary. The PRB also notes that audited cost data is usually not available until 6 months after the end of the financial year and this creates an inappropriate lag for an alert threshold.

4 PRB proposals for EU-wide targets and alert thresholds

4.1 Introduction

- 4.1.1 The performance scheme is an important part of the SES II package. Setting the EU-wide targets is an important step in implementing the performance scheme as it conditions to a large extent the level of success and speed in meeting the SES objective of improving ANS performance.
- 4.1.2 The PRB considers that the SES II package, and the performance scheme in particular, constitute powerful tools that should result in substantial efficiency gains, beyond current plans. Moreover, the SES goals as contained in the ATM Master Plan were endorsed by the Member States. The EU-wide targets for RP1 should therefore reflect a real degree of ambition in all the KPAs to ensure that ANS performance improves in a way that is consistent with the SES goals.
- 4.1.3 The primacy of safety is recognised. The purpose of the safety pillar of the SES II package, the extension of EASA to ANS and airports, is precisely to ensure continuous improvement of ANS safety. The performance scheme brings a useful complement through the mandatory introduction of safety PIs already in RP1. EASA has been associated throughout the process. Safety and its related aspects of the performance scheme implementation were coordinated with EASA as required by the legislation.
- 4.1.4 Moreover, the legislation provides that there are no EU-wide safety targets, no mandatory financial incentives for capacity, and no mandatory local targets for the environment KPA in RP1.
- 4.1.5 It must however be noted that there is no prior experience in applying the performance scheme among any of the concerned parties. NSAs and States will need to develop and adopt performance plans and monitor their application. ANSPs will need to align their business planning activities with the SES goals and manage their performance accordingly. RP1 will therefore be a transition and a learning period for everyone.
- 4.1.6 The PRB therefore considers that it is appropriate to be reasonably ambitious while realistic in all three areas where EU-wide performance targets are to be set.
- 4.1.7 This section presents the PRB's proposals to the EC for the EU-wide targets and associated alert thresholds. The rationale behind the PRB's proposals is presented, as well as consideration of trade-offs between the different KPAs.

4.2 EU-wide targets

Safety

- 4.2.1 During the public consultation, all stakeholders stressed the importance of maintaining safety as the first priority for ANS. In developing their proposals the PRB has worked with EASA to ensure that the targets for environment, capacity and cost-efficiency have no known detrimental impact on safety.
- 4.2.2 Further, the performance scheme Regulation [Ref i] requires States to publish safety statistics on separation minima infringements, runway incursions and ATM special technical events in a harmonised manner using the risk classification scheme defined in the Risk Assessment Tool. The PRB believes that this is an important step in ensuring improved knowledge of the level of safety at the EU-wide level. The PRB will continue to work closely with EASA to ensure that both safety KPIs, in line with the European Aviation Safety Plan, and a comprehensive repository of safety data are developed in order to enable significantly improved monitoring of safety during RP1 and where appropriate target setting in RP2.

Environment

- 4.2.3 In the Consultation Document at Appendix A, the PRB set out evidence that the current plans could lead to a reduction of 0.6% point in average en route horizontal inefficiency. The PRB also set out evidence that further improvements could be sought.
- 4.2.4 In their responses, stakeholders pointed out that the industry was already taking their environmental responsibility seriously and that many ‘quick wins’ had already been implemented in achieving the improvements over the last few years. The PRB recognises this, but considers that there is evidence for further improvements.
- 4.2.5 In particular, the PRB considers that:
- There is a strong role for the body responsible for the NMD functions to support stakeholders in making the best use of existing capacity and in ensuring the most effective route network development and use. The PRB feels that the environmental targets should include a level of ambition to set a challenging, while achievable target, for this body in cooperation with States and ANSPs.
 - The advent of free route airspace and FABs should contribute in a positive way already during RP1.
 - It is likely that the different initiatives to improve flight-efficiency can be achieved at relatively low costs. Moreover, there are not only environmental benefits, but also high economic benefits for airspace users.
- 4.2.6 The PRB therefore proposes that the EU-wide environment target for 2014 should be reasonably ambitious, with an **improvement of 0.75% of the KPI with respect to the 2009 baseline**.
- 4.2.7 Adopting this EU-wide target would result in ANS-related emissions per flight reducing by approximately 3% per annum and thereby compensate a traffic growth of 3% per annum. As a result, en route carbon emissions under ANS influence would be decoupled from traffic growth under the baseline traffic forecast¹⁹, and therefore allow a carbon-neutral growth of air traffic during RP1 as far as ANS is concerned.
- 4.2.8 Moreover, the economic benefits for airspace users in terms of reduced en route flight time and fuel burn would be in the order of €150-200M in 2014 versus the 2009 baseline.

Capacity

- 4.2.9 In the Consultation Document at Appendix A, the PRB set out evidence that current capacity enhancement plans are consistent with achieving an average delay per flight of 0.7 minute²⁰. The PRB also set out evidence that the economic optimum for delay is approximately 0.35 minute per flight; this reflects the high cost of delays to airspace users.
- 4.2.10 In their responses to the consultation, stakeholders including ANSPs made it clear that capacity should be considered a priority area.
- 4.2.11 The PRB considers that the performance in 2009 demonstrates that the target of 0.7 minute per flight could have been achieved with appropriate corrective actions in a limited number of area control centres.

¹⁹ Improvement from 2009 to 2014 would be ~15% of the baseline for the median value of the target (-0.7%), which would compensate for traffic increase under the baseline traffic forecast in this period (15%), and therefore result in a carbon neutral growth for CO₂ emissions under ANS influence.

²⁰ That is the current PC target of 1 minute for the summer season expressed for the full year.

- 4.2.12 The PRB notes that the current delay performance during the summer of 2010 is wholly inadequate; the PRB's view is that the significant drop in performance is mainly due to social issues, and that there are no structural obstacles to achieving a reasonably more challenging target by 2014.
- 4.2.13 Moreover, adopting a target closer to the economic optimum would reduce the total cost of delays and capacity to airspace users and give greater resistance to high delays in case of traffic being significantly higher than forecast.
- 4.2.14 The PRB therefore considers that:
- if unchanged and fully implemented, the consolidation of current ATC capacity plans aim for an average en-route ATFM delay of 0.7 minute per flight by 2014, and
 - the economic optimum should be reached as soon as practicable.
- 4.2.15 The PRB proposes that the EU-wide capacity target for 2014 should be set at **0.5 minute of en-route ATFM delay per flight, all causes included**, in line with stakeholder expectations. The PRB acknowledges that this is a reasonably ambitious target. It will require careful planning and implementation by the ANSPs and the body responsible for NMD functions to ensure it is achieved without undue impact on cost-efficiency.
- 4.2.16 In fact, the proposed target corresponds to adding some 3% more capacity by 2014 (around 1% per year) than what is currently planned and the additional incremental costs (estimated at some €30 M per annum) have been explicitly considered in the cost-efficiency target.
- 4.2.17 It should be noted that the potential delay cost savings for airspace users in 2014 versus the 2009 baseline with a target of 0.5 minute per flight are around €280 M.

Cost-efficiency

- 4.2.18 The PRB initial proposal was for an EU-wide cost-efficiency target for RP1 to reach a value of between €49 and €51 determined unit cost per SU in 2014 (€2009 prices). This corresponded respectively to 5% and 4.5% of improvement in real unit cost per annum.
- 4.2.19 This proposal was based on detailed benchmarking of ANSPs within peer groups, supported by analysis of EU-wide historic and forward looking trends of ANS real unit costs including the latest available information on costs and traffic forecasts submitted by States for the period 2010 to 2014 in the context of the June 2010 session of the Enlarged Committee for Route Charges. The analysis was supported by a high level comparison of unit costs in the EU and US FAA ATO as well as, to some extent, a preliminary exercise in econometric modelling. These latter two forms of evidence support longer term SES goals rather than suggest a value for RP1.
- 4.2.20 In their responses to the formal consultation, stakeholders gave widely different views, above or below the PRB proposed range. The airspace users supported a significantly more ambitious target. They pointed out that en-route ANS was provided by monopoly ANSPs and that the ANS charges were increasing as a percentage of their costs (excluding fuel).
- 4.2.21 States, NSAs and ANSPs all argued for a less ambitious target. They consider that the costs associated with the required structural changes have not been properly considered. There is a wide spread view that, in the short term, unit costs will need to increase to cover investment in FABs and SESAR deployment.
- 4.2.22 The PRB therefore considers that:
- the EU-wide cost-efficiency target is part of a scheme which comprises binding national targets supported with incentives contained in the revised charging scheme Regulation;

- any efficiency targets on determined costs will be affected by the impact of legacy costs linked to the past under-recoveries; the overall unit rates charged to airspace users during RP1 will vary (upwards) in accordance with these costs;
- there is considerable divergence between the various stakeholders views on the desirable level of ambition for RP1;
- under the performance scheme, the cost-efficiency EU-wide target needs to show ambition combined with realism, whilst recognising the paradigm shift to incentive based charges and the potential for significant traffic growth over the period to the end of RP1;
- the EU-wide cost-efficiency target also needs to reflect that some investment in FABs, IP1 and potential restructuring of ANSPs to address these targets will need to take place during RP1;
- the reasonably ambitious capacity target (0.5 minute per flight) which corresponds to adding some 3% more capacity by 2014 than what is currently planned requires an additional incremental costs estimated at some €30M per annum²¹;
- the ATM Master Plan is targeting a 50% reduction in costs per flight in 2020 compared to 2004 (based on a forecast traffic growth of +73% compared to 2005). Under the current circumstances, a 5% annual unit cost reduction would imply that 2004 unit costs would be halved by 2022.

4.2.23 The PRB therefore proposes that the **EU-wide cost-efficiency target for 2014 be €51 determined unit costs per SU in 2014 (€2009 prices)** i.e. 4.5% of annual reduction in real unit cost at the aggregated EU level.

4.2.24 The available evidence indicates that this value is challenging and achievable at the same time, and includes provisions for investment in additional capacity where needed. It goes beyond current plans and would require significant benefits to accrue from additional initiatives, notably genuine FAB implementation.

4.2.25 The associated cost savings compared to the plans submitted by States in June 2010 are significant, in the order of €1,500M over RP1, as illustrated in Figure 4-1.

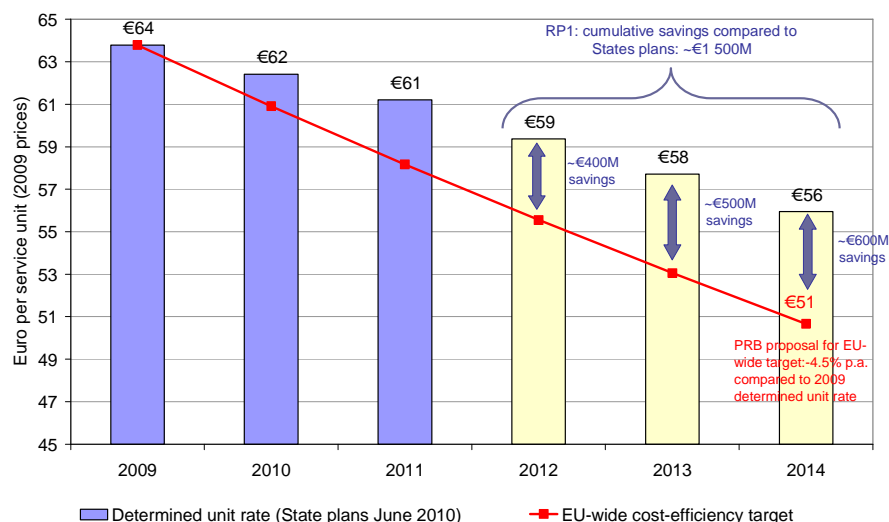


Figure 4-1: Proposed EU-wide target for cost-effectiveness vs. latest plans

²¹ Assuming an implicit cost/traffic elasticity of 0.5.

4.3 Alert Thresholds

- 4.3.1 In line with Article 18 of the performance scheme Regulation [Ref i], the PRB considers that alert thresholds should only be activated ‘due to circumstances that were unforeseeable at the beginning of the period and are at the same time insurmountable and outside of the control of member States’.
- 4.3.2 The PRB intends to use the ongoing monitoring and reporting requirements of Article 17 of the performance scheme Regulation [Ref i] to ensure that performance against the targets are monitored during the reference period and NSAs warned if targets are unlikely to be met. This would include specific investigation of any ‘crisis event’.
- 4.3.3 The PRB recognises that whilst stakeholders agreed with the use of alert threshold based on the evolution of traffic, several argued for the threshold to be set at a lower value than the 10% proposed by the PRB. The PRB agrees that 10% may be considered high for a specific ANSP, but considers that it is appropriate at EU-level.
- 4.3.4 Stakeholders also highlighted that the regulation contains provision for an alert threshold on cost evolution. The PRB however considers that:
- The common charging Regulation provides adequate protection to ANSPs for variance in actual costs; and
 - The delay in obtaining audited cost data means that cost evolution should be considered when revising determined costs between reference periods.
- 4.3.5 The PRB therefore proposes that only an alert threshold based on traffic evolution is included with a threshold of 10% from the baseline traffic forecast. If the threshold is exceeded, the PRB will investigate the potential need to alter targets across all KPAs.
- 4.3.6 Should the EC require an alert threshold based on cost evolution, the PRB considers that the threshold should be set in line with the expectation that alert thresholds are only triggered in exceptional circumstances. The PRB therefore proposes that the threshold should be set at 10% and be related to a specified unexpected event. Again, if the threshold is exceeded, the PRB will investigate the potential need to alter targets across all KPAs.
- 4.3.7 The PRB notes that NSAs could set local alert thresholds in their performance plans.

4.4 Summary

- 4.4.1 The PRB considers that the proposals defined in Section 4.2 provide for a balanced, but ambitious package of EU-wide targets which actively takes into consideration the views of stakeholders. Different stakeholders have expressed their diverging points of view, and the PRB understands that it is impossible to meet every stakeholder’s expectations. The PRB’s final proposals seek to strike a fair and effective balance between the level of ambition, practicalities of business realities and the overall interests of the European aviation community.
- 4.4.2 The final PRB proposed targets are shown in Figure 4-2 in comparison with the proposed range presented in the Consultation Document at Appendix A and submitted to written consultation.
- 4.4.3 The final PRB proposed targets are summarised in Table 4-1. They take account of the latest STATFOR Medium term forecasts (see § 2.5).

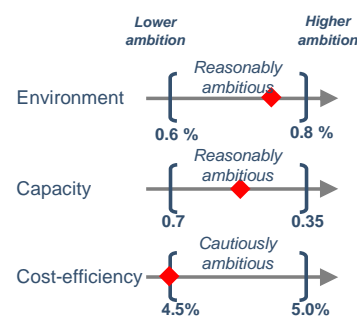


Figure 4-2: Proposed targets & initial ranges

KPA	EU-wide KPI	Baseline (2009)	EU-wide target consultation range for 2014	PRB final proposal for EU-wide targets for 2014
Environment	Average horizontal en route flight-efficiency	4.5% ²² of additional distance	0.6 to 0.8% point reduction of the 2009 baseline	Reduction of 0.75% point of the EU-wide KPI (compared to 2009 baseline)
Capacity	En route ATFM delay	0.9 min./flight	0.7 - 0.35 min./flight	0.5 min/flight
Cost-efficiency	Average determined unit rate for en route (€ 2009 prices)	€63.8/SU	€49-€51/SU (5.0%-4.5% p.a. reduction)	€51.00 for 2014 with intermediate values: €55.77 for 2012 €53.33 for 2013

Table 4-1: Summary of PRB Proposals for RP1.

4.4.4 In order to put these proposed targets in the proper context, Figure 4-3 shows the proposed PRB targets together with existing plans.

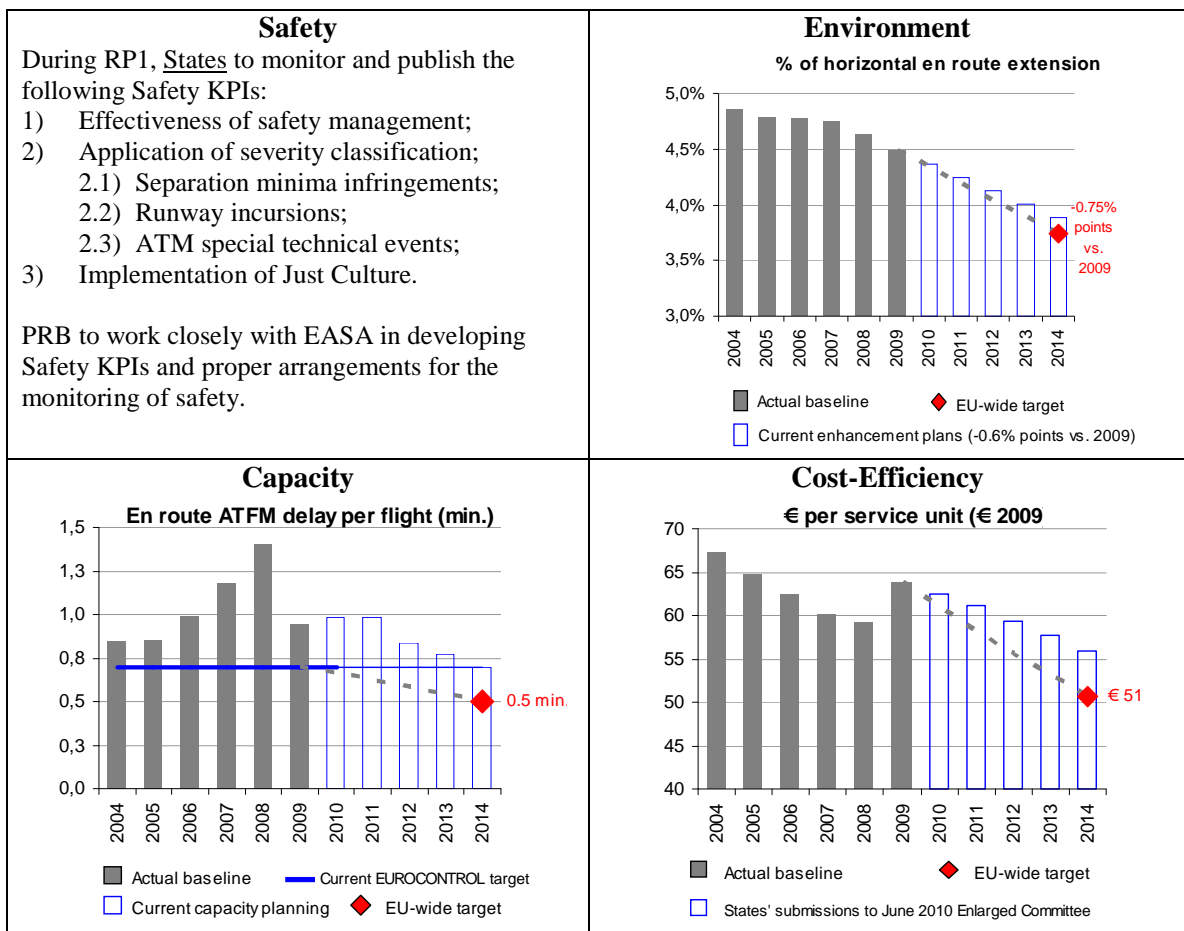


Figure 4-3: Proposed PRB targets versus existing plans

²² This value is computed with 30 NM rings around airports. It will be recalculated using 40 NM rings as specified in the performance scheme Regulation.

- 4.4.5 The PRB proposes an alert thresholds of 10% compared to traffic evolution expressed in en route service units using the reference values of Table 4-2.

	2012	2013	2014
En route service units ²³ (thousands)	107 338	110 105	113 049

Table 4-2: Traffic assumptions for EU-wide alert thresholds

- 4.4.6 Should the EC require an alert threshold based on cost evolution, the PRB considers that the threshold should be set in line with the expectation that alert thresholds are only triggered in exceptional circumstances. The PRB therefore proposes that the threshold on costs should be set at 10% using the reference values of Table 4-3.

	2012	2013	2014
EU-wide determined en route costs ²⁴ (Million) (Euros 2009)	5 986	5 872	5 765

Table 4-3: Cost assumptions for EU-wide alert thresholds

4.5 Next steps

- 4.5.1 Setting EU-wide targets is the first step in the preparation for RP1. The next step is the establishment by the NSAs of National/FAB performance plans.
- 4.5.2 This document has considered EU-wide targets rather than National/FAB targets. Therefore, the targets contained in this document should not be misinterpreted, as they represent a system-wide target:
- First, it should be understood that there is room for improvement across each ANSP, and there is no room for complacency if a genuine performing pan-European ANS system is to be achieved.
 - Second, even those identified as best relative performers in the ANSP cluster benchmarking have the potential to make significant improvements as part of the change process brought forward by SES II.
 - Third, even if the current national value of the KPI is below the system-wide target, national targets should be set so each part of the European ATM system contributes to meeting that target;
 - Finally, all the National/FAB Performance Plans will be assessed by the EC/PRB using the assessment criteria detailed in Annex III of the performance scheme Regulation.
- 4.5.3 In the coming months the PRB will work closely with the NSAs to develop guidance material on the preparation of performance plans.
- 4.5.4 When considering values for National/FAB plans, NSAs should consider the consistency criteria defined in Annex III of the performance scheme Regulation [Ref i]. They should in particular note:

²³ En route service units as forecasted by STATFOR (September 2010) for EU27+2.

²⁴ This corresponds to the expected levels of efficient determined costs for EU27+2 (see Article 9(4) of the performance scheme Regulation).

- Whilst States do not need to set environmental targets in RP1, they should expect ANSPs to work closely with the body responsible for NMD functions to ensure that they contribute to achieving the EU-wide target.
- A reference value for the capacity target will be provided by the capacity planning process of EUROCONTROL. States should justify any deviation from this value.
- Whilst the PRB will use the consistency criteria defined in the regulation, States are encouraged to also consider the PRB's benchmarking exercise when consulting on the potential improvements for the local cost efficiency targets.

4.6 Conclusion

- 4.6.1 The PRB is pleased to present these proposals to the European Commission. The PRB believes that their proposals for EU-wide performance targets set a realistic and achievable challenge to the industry to improve ANS performance during the coming years.
- 4.6.2 The PRB is particularly grateful to the stakeholders who provided detailed comments on the initial proposals during the public consultation. The level of response was particularly impressive given that the consultation occurred during the month of August. The PRB recognises that the consultation was not ideally timed and will work with the EC to ensure that more time is available for consultation in the future.

Annex I: References

- i Regulation (EU) No 691/2010 laying down a performance scheme for air navigation services and network functions.
- ii Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system.
- iii Regulation (EC) No 549/2004 laying down the framework for the creation of the single European sky (the framework Regulation).
- iv Commission Decision of 29/07/2010 on the designation of the Performance Review Body of the Single European Sky.
- v PRR 2009: Performance Review Report: An assessment of Air Traffic Management in Europe during the 2009 calendar year.
- vi Draft Commission Regulation amending Commission Regulation (EC) No 1794/2006 of 6 December 2006 laying down a common charging scheme for air navigation services, as agreed on 8 July 2010 at the 36th meeting of the Single Sky Committee.
- vii ATM Cost-Effectiveness (ACE) 2008 Benchmarking Report (June 2010).
- viii European ATM Master Plan Edition 1, 30 March 2009.
- ix LSSIP Local Single Sky Implementation documents, EUROCONTROL.
- x SESAR: Air Transport Framework The Performance Target D2, December 2006.