



TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 1: Strategic issues that address the challenge of integration, interoperability and harmonization of systems in support of the concept of “One Sky” for international civil aviation

1.1: Global Air Navigation Plan (GANP) – performance framework for global planning

COMPLEMENTARY INFORMATION ON THE GLOBAL IMPLEMENTATION OF “ONE SKY” FOLLOWING A PERFORMANCE-BASED APPROACH

(Presented by the Presidency of the European Union on behalf of the European Union and its Member States¹; by the other Member States of the European Civil Aviation Conference²; and by the Member States of EUROCONTROL)

1. INTRODUCTION

1.1 Global implementation of “One Sky” will require the use of a common “language” regarding performance. This implies a coordinated approach across States and Stakeholders for data provision, collection, storage, protection, dissemination and indicator calculation; and use of the results to support the various ATM improvement processes which include R&D planning, implementation planning, business planning, performance monitoring, and regulation.

1.2 Europe’s long experience in this area, at a multinational level, is presented as a useful contribution, including for application in the ICAO context where there is no multinational regulatory framework.

1.3 Working paper AN-Conf/12-WP/30 provides a high level overview of this experience. This information paper presents an additional level of detail.

1.4 Please visit <http://www.eurocontrol.int/articles/european-ans-performance-review> for more information.

2. GEOGRAPHICAL COMPOSITION OF EUROPE

2.1 Figure 1. illustrates the various groups of States relevant to the application of a performance based approach in Europe.

¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. All these 27 States are also Members of ECAC.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

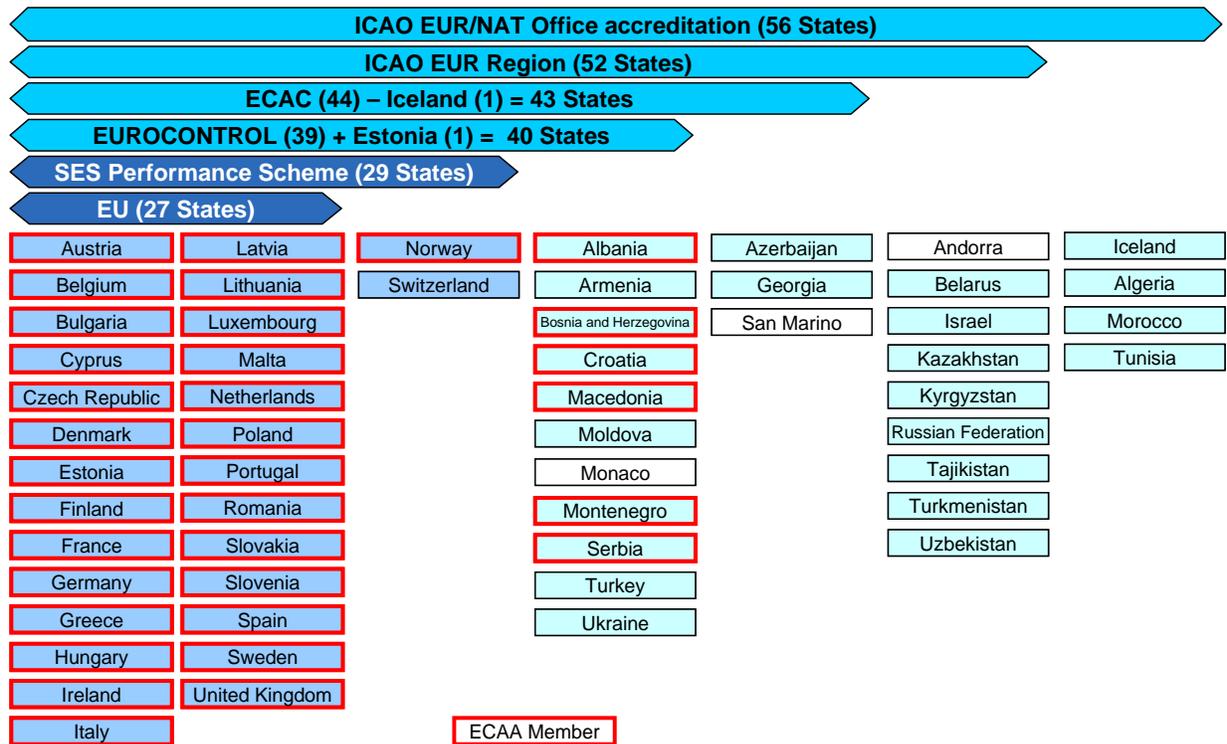


Figure 1. Geographical scope differences in Europe

3. HISTORICAL OVERVIEW OF ANS PERFORMANCE REVIEW AND REGULATION IN EUROPE

3.1 Performance Review Commission

3.1.1 At their meeting on 14 February 1997 in Copenhagen (MATSE/5), ECAC Ministers agreed an Institutional Strategy for European ATM.

3.1.2 One objective of this strategy was "to introduce strong, transparent and independent performance review and target setting to facilitate more effective management of the European ATM system, encourage mutual accountability for system performance and provide a better basis for investment analyses and, with reference to existing practice, provide guidelines to States on economic regulation to assist them in carrying out their responsibilities".

3.1.3 As a result, the Performance Review Commission (PRC) was established in 1998 by the Permanent Commission of EUROCONTROL. It is an independent body, supported by a group of experts, the performance review unit (PRU).

3.2 Annual performance review reports

3.2.1 The PRC started publishing annual performance review reports (PRR) in 1999.

3.2.2 The first report (PRR) covered safety, delay and cost-effectiveness. This made it clear that the purpose of PRRs was neither to praise nor to criticise but to help everyone involved in effectively improving

future ATM performance. The role of the PRC as an independent and expert “mirror” rather than a regulatory policeman was therefore established³.

3.2.3 The PRC’s work went beyond what had been done before by applying deeper analysis to publicly available data and putting the results into a wider context in a public arena. The PRC stressed that the lack of information in key areas, particularly safety and cost, had prevented deeper analysis. It identified the provision of more and better information as a key objective for improving the performance of the network as a whole.

3.3 Economic benchmarking

3.3.1 Work was undertaken to develop a set of cost effectiveness indicators, as well as the *EUROCONTROL Specification for Economic Information Disclosure*. In 2001, these specifications were released and mandatory information disclosure by States and air navigation service providers (ANSPs) started. In 2003, the PRC started publishing its series of annual ATM Cost-Effectiveness (ACE) reports. The first report was based on data covering the year 2001. These reports present a benchmarking analysis of ATM cost-effectiveness for a large set of ANSPs in Europe, focussing on costs which are under their direct control, namely ATM/CNS provision costs. The first ACE report covered 32 ANSPs, the most recent one 37. Note that the ACE performance framework is fully consistent with ICAO Doc 9161.

3.4 Data availability

3.4.1 It is important to note that European ATM performance analysis and review greatly benefited from the availability of a number of pan-European data sets collected by EUROCONTROL. Worth mentioning are:

- a) flight and ATFM delay data provided by the Central Flow Management Unit (CFMU) – nowadays called the network manager;
- b) data provided by the Central Route Charges Office (CRCO);
- c) delay data collected by the Central Office for Delay Analysis (CODA), based on voluntary reporting by airlines;
- d) traffic statistics and forecasts provided by EUROCONTROL’s STATFOR service; and
- e) data stored in EUROCONTROL’s PRISME data warehouse (Pan-European Repository of Information Supporting the Management of European ATM).

3.4.2 Directive 2003/42 on occurrence reporting adopted by the Commission in 2003 has created a European Central Repository (ECR) for occurrences, including ATM related occurrences. The ECR contains more than 600,000 occurrences, of which close to 100,000 are ATM related. The ECR is now fed by all EU countries and it is encouraging to note that despite the issue of data quality (which is improving due the continuous attention put to the issue), it is starting to become a meaningful source of information that may be used for analysis.

³ This role created the inherent limitation that the PRC could only issue recommendations. This situation has been changed by the adoption of the SES performance scheme where the Performance Review Body (PRB) recommendations can be actioned by the European Commission.

3.5 US/Europe comparison

3.5.1 The PRC also published a number of one-off studies on specific subjects. Well-known is the *US/Europe Comparison of ATM-related Operational Performance* (2009, updated in 2012)⁴. This study was a joint effort of the Air Traffic Organization Strategy and Performance Business Unit of the FAA and EUROCONTROL. The objective was to make a factual high-level comparison of operational performance between the US and European air navigation systems. The initial focus was to develop a set of comparable performance measures in order to create a sound basis for factual high-level comparisons between countries and world regions. The specific key performance indicators (KPIs) are based on best practices from both the Air Traffic Organization Strategy and Performance Business Unit and the PRC. In a way, this study served as a proof of concept that it is possible to develop and apply a common performance framework.

3.6 The first SES package (SES I)

3.6.1 The Single European Sky (SES) initiative was launched in 2000 by the European Commission following the severe delays to flights in Europe that were experienced in 1999. The legislative package was adopted by the European Parliament and Council in March 2004 and entered into force one month later.

3.6.2 SES I already contained the embryo of performance monitoring through the setting up of a system of 'examination and evaluation of air navigation performance, drawing upon the existing expertise of Eurocontrol'⁵.

3.6.3 In 2007, the review of the achievements of SES⁶ led to the conclusion that the capacity shortage and fragmentation remained, to which were added increased concerns about the sustainability of air transport and its performance in terms of quality of service as well as cost-efficiency. The European Commission developed between 2008 and 2009 the SES II initiative, aiming at establishing a '*more performing and sustainable European aviation*'.

3.7 The second SES package (SES II) and the performance scheme

3.7.1 The SES II regulatory package, adopted in 2009, included a performance scheme with mandatory data provision and target-setting on common indicators, which was implemented through the performance Regulation⁷.

3.7.2 The scheme also contains incentive mechanisms, including sharing of financial risks between air navigation service providers and airspace users.

3.7.3 The geographical scope of the performance scheme currently comprises 29 States: the 27 EU States plus Norway and Switzerland (see Figure 1.). Additional States may access the scheme on the basis of bilateral agreements.

3.7.4 The independent Performance Review Body (PRB) provides advice to the European Commission in setting EU-wide binding targets, assessing national/FAB performance plans, and monitoring the performance of the system in four key performance areas (KPAs): safety, capacity, environmental impact and cost-efficiency.

⁴ <http://www.eurocontrol.int/documents/useurope-comparison-atm-related-operational-performance-2010>

⁵ Article 11 "Performance review" of Regulation (EC) No 549/2004 of 10 March 2004 (the framework Regulation).

⁶ Based on the Report of 21 December 2006 from the Eurocontrol Performance Review Commission ("Evaluation of the impact of the SES initiative on ATM performance"), the report from the High-Level Group of July 2007 ("A framework for driving performance improvement") and the Commission Communication of 20 December 2007 "First Report on the implementation of the Single Sky Legislation: achievements and the way forward".

⁷ No 691/2010, adopted on 29th July 2010

3.7.5 In the area of safety, the European Aviation Safety Agency (EASA) and EUROCONTROL are working closely together. This active cooperation has been formalised by a Memorandum of Understanding (MOU) that was signed in February 2011. This MOU implements a common strategic vision of the two organisations:

- a) the objective of cooperation is to provide clarity of accountability and the avoidance of duplication; and
- b) safety is an overriding requirement above other considerations.

3.7.6 The European Commission is responsible for adopting EU-wide performance targets and approving national/FAB performance plans. Following consultation with concerned organisations the National Supervisory Authorities (NSAs) are responsible for drawing up performance plans at either national or Functional Airspace Block (FAB) level, containing “local” (i.e. national or FAB) targets consistent with the EU-wide performance targets. The European Commission, assisted by the PRB in cooperation with EASA for safety, assesses the performance plans for consistency with the EU-wide targets and recommends revisions where needed. This is a significant change compared to the PRC situation: recommendations are now implemented. The NSAs, at national or FAB level, and the European Commission are responsible for monitoring the implementation of the performance plans. The scheme does allow the States to monitor properly the quality of the services provided by the ANSPs. This sequence of events is fully consistent with the conclusions of CEANS as well as Docs 9082 and 9161.

3.7.7 In the above process, it is recognised that there are interdependencies between the performance levels of the different KPAs. Care is taken to ensure that the level of ambition expressed through targets (in particular in the cost efficiency KPA) does not compromise safety levels⁸.

3.7.8 The performance scheme started on 1 January 2011 with data provision obligations. The first reference period (RP1) is a transitional period of three years only (2012-2014), focussing on en-route ANS performance. Full gate-to-gate coverage is intended to be achieved in the second reference period (RP2, 2015-2019). Work is currently under way to prepare and adopt amendments to the performance Regulation, for application in RP2.

3.8 The extension of the SES

3.8.1 A High-Level Conference on the Implementation of the Single European Sky (SES) and its extension beyond the European Union took place at Warsaw on 28 November 2011. Inter alia, the following conclusions were drawn in closing the Conference⁹:

3.8.2 *It was agreed that the SES Regulations represent the right legal framework to develop further the pan-European dimension in the field of ATM, also with a view to enhancing safety and promoting interoperability. The air navigation service providers (ANSPs) from non-EU Member States were encouraged to participate actively in the process of SES extension. The expertise of Eurocontrol as the Network Manager for the EU was also recognised as essential in promoting pan-European service provision.*

⁸ Interdependencies, in particular their impact on safety were assessed during the review of the national/FAB performance plans. As a result of lessons-learned from this exercise, the proposed regulatory approach for the second reference period specifies that States or FABs as appropriate, should conduct a safety assessment of their performance plan.

⁹ Extract from the Warsaw Declaration (High Level Conference on the Implementation of the Single European Sky and its extension beyond the European Union. Warsaw, 28 November 2011, http://ec.europa.eu/transport/air/events/doc/2011-11-28-ses/2011_11_28_final_declaration_of_warsaw_logos.pdf)

3.8.3 *In particular the requests of some non EU Member States to be more strongly involved in the European Common Aviation Area (ECAA) and in the SES initiative were welcomed. In that context, it was recognised that the European Common Aviation Area agreements constitute a vital comprehensive legal framework for cooperation in aviation matters, including promotion of the SES beyond the borders of the EU.*

3.8.4 *The European Commission and the stakeholders were invited to explore ways of developing cooperation with, and providing assistance to non EU Member States building on the legal framework of the European Common Aviation Area agreements and on the SES's legal and institutional set-up. The use of the existing working arrangements between EASA and the non-EU Member States that would allow for standardisation visits on ATM is a promising way forward for the safety aspects of the performance scheme.*

3.9 **The ICAO EUR region initiative**

3.9.1 The ICAO EUR Region comprises 52 States¹⁰, that is, 23 States more than are currently participating in the SES performance scheme.

3.9.2 EANPG/50 (December 2008) agreed to set up a performance planning and monitoring process applicable to the EUR Region. The general objective was to introduce a harmonized approach in the EUR Region, compatible with the approach followed by the PIRGs of other ICAO Regions and using guidance material provided by ICAO HQ. EANPG sees this as the performance perspective for the EUR Air Navigation Plan.

3.9.3 The EANPG Coordinating Group (COG/47, June 2010) decided to set up the COG PERF Task Force to define a suitable EUR Region performance framework (KPA and KPI) and reporting processes for this purpose. In its terms of reference, the task force was instructed to *'avoid duplication of efforts and to use, to the maximum extent possible, existing arrangements/solutions'*.

3.9.4 The task force decided to base its indicator proposals as much as possible on on-going processes and activities, therefore giving due consideration to the SES performance scheme. However it was recognised that the performance scheme was built on more than a decade worth of performance monitoring and review expertise. Therefore it was considered prudent to start with a very simple framework initially. This would improve the chances that the non-SES States could successfully engage in the process. Therefore, only a subset of the indicators, mechanisms and processes in the performance scheme was included. It is also clearly stated that the ICAO EUR framework does not require any target setting.

3.9.5 In this way, the use of the EUR Region performance framework could be viewed by non-SES States as a low-effort first step towards adoption of a performance oriented approach, based on the knowledge and experience gained through regional processes in place and in particular the SES performance scheme. For the ECAA States this could be a precursor to the approach outlined in paragraphs 3.8.3 and 3.8.4.

3.9.6 The commonalities and differences between the SES performance scheme and the EUR Region initiative are illustrated in Figure 2. .

¹⁰ Four additional States (Iceland, Algeria, Morocco and Tunisia) to which the ICAO Paris office is accredited are not part of the EUR Region. Their participation would be voluntary.

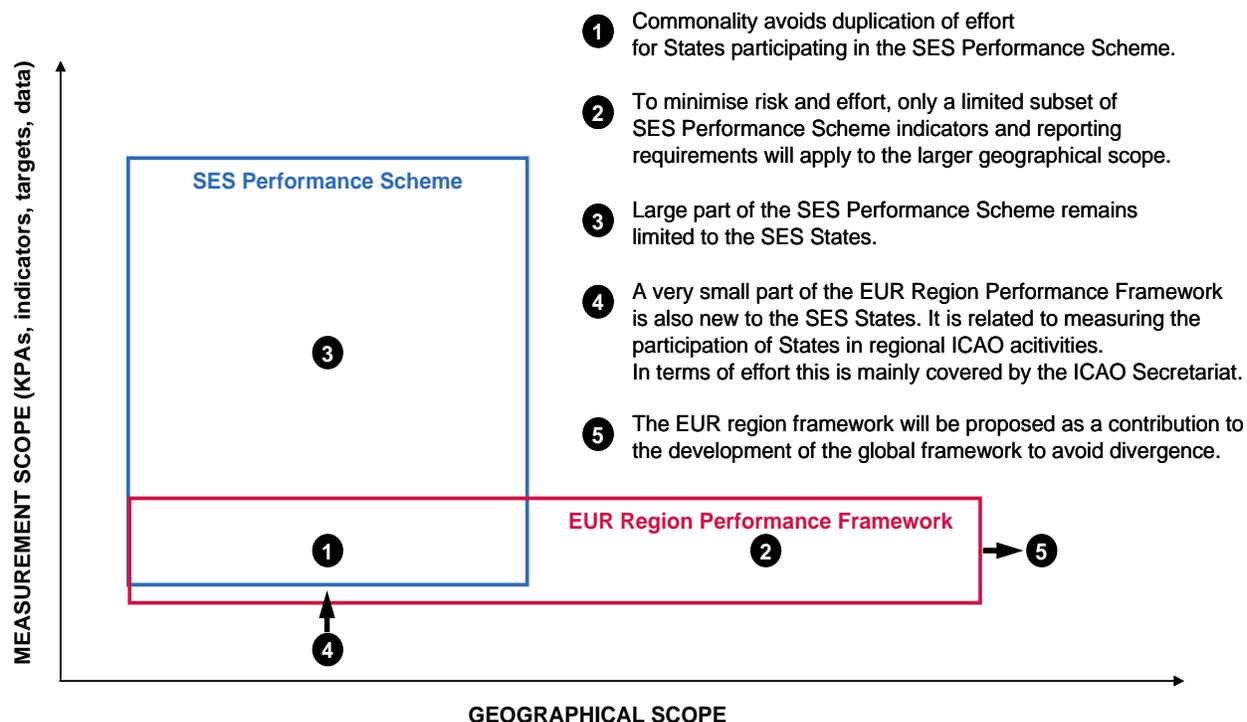


Figure 2. Relationship between SES and EUR Region performance frameworks

3.9.7 The Task Force presented a draft of its deliverable to EANPG/53 (Nov/Dec 2011). In its conclusions¹¹, the EANPG ‘endorsed the proposal and agreed that the ICAO Regional Director, Europe and North Atlantic, launch the EUR Region Performance Framework reporting mechanisms in 2012 on a transitional basis, so that an initial Regional Performance Review Report (RPRR) can be presented at the EANPG/54’; with the proviso that ‘information already collected on a national and/or FAB level and assessed through other mechanisms (e.g. European Commission assisted by the PRB in cooperation with EASA) would be used within the performance framework of the whole Region in order to avoid any duplication of effort’.

3.9.8 The terms of reference of the task force were modified to allow it to continue working on practical implementation details during 2012. It is not a Task Force priority for 2012 to develop new proposals.

4. SUMMARY OF CURRENT SES PERFORMANCE SCHEME INDICATORS AND TARGETS

4.1 The SES performance scheme distinguishes between:

- a) key performance indicators (KPIs): indicators with binding targets; and
- b) performance indicators (PIs): indicators with monitoring only, i.e. without targets

4.2 Key performance indicators (KPIs)

4.2.1 Quantified EU-wide targets have been set for reference period 1 (RP1, 2012-2014) for each of the three following KPAs - environment, capacity and cost-efficiency, as described in Table 1. .

¹¹ EANPG Conclusion 53/35

Table 1. Key performance indicators (KPIs) with targets in RP1

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

4.2.2 For RP1, the Legislator focussed on en route KPIs for target setting.

4.3 Performance indicators (PIs)

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

Table 2. Performance indicators (PIs) for monitoring (in addition to the KPIs)

Key Performance Area	Performance Indicator for monitoring in RP1
Safety	<ol style="list-style-type: none"> 1) Safety management effectiveness assessed through questionnaires for ANSPs and NSAs respectively 2) Percentage of application of severity classification of the Risk Analysis Methodology allowing harmonised monitoring of: <ol style="list-style-type: none"> 2.1) separation minima infringements; 2.2) runway incursions; and 2.3) ATM specific technical events. 3) Minimum level of the measure of Just Culture¹² <p>Note: These safety PIs will be measured and verified through the standardisation inspection mechanism of EASA</p>
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

4.3.2 According to the performance regulation, National/FAB performance plans *shall* include targets for the capacity and cost-efficiency KPIs, and *may* include targets for the safety and environment KPIs.

4.3.3 States will have to monitor and publish the safety PIs identified in Table 2. including the number of separation minima infringements, runway incursions and ATM specific technical events. These PIs have been developed jointly by the European Commission, the Member States, EASA and EUROCONTROL.

— END —

¹² According to Article 2 of the performance 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.