



ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 36: Aviation safety and air navigation implementation support

GANP IMPLEMENTATION

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

EXECUTIVE SUMMARY

This paper presents information on how Europe is implementing the GANP, acting at a regional level, with a clear policy and institutional framework (Single European Sky), and in close collaboration with all stakeholders for the development and implementation of the needed ATM solutions required, through the SESAR programme. The paper also underlines the performance-based approach applied to implementation and the management and monitoring instruments in place to support it; and specifically report on the ASBUs Implementation Monitoring Report for 2014 developed for the ICAO EUR/NAT office and approved by the EANPG.

<i>Strategic Objectives:</i>	This working paper relates to all Strategic Objectives.
<i>Financial implications:</i>	N/A
<i>References:</i>	Doc 9082, <i>ICAO's Policies on Charges for Airports and Air Navigation Services</i> Doc 9750, <i>Global Air Navigation Plan (2016 Edition proposed to the Assembly)</i> Doc 9854, <i>Global Air Traffic Management Operational Concept</i>

¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom

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

1. INTRODUCTION

1.1 The ICAO Global Air Navigation Plan (GANP), together with the Aviation System Block Upgrades (ASBUs) methodology and its Modules, provides a long-term vision and framework to assist States, regions and the industry to plan and implement in a flexible manner a harmonised global Air Navigation System.

1.2 Consistent with the ASBUs methodology, Europe's approach to the GANP implementation is based on the Single European Sky (SES) institutional/regulatory framework and the Single European Sky ATM Research (SESAR) programme, its technology pillar for ATM modernisation. The SESAR programme defines, develops, validates and ensure the deployment of the needed innovative technological and operational solutions.

1.3 The ATM Master Plan is the strategic plan for ATM improvements in Europe, defining the required innovative technological and operational solutions, with an outlook period of 20 years; it is aligned with the Global ATM Operational Concept (GATMOC) and the GANP. The development and validation of the required solutions (SESAR Solutions) is performed by the industrial stakeholders in the framework of the SESAR Research & Innovation (R&I) programmes managed by the SESAR Joint Undertaking. The implementation of some of these solutions (e.g. Remote Towers, extended arrival management E-AMAN, Time Based Separation, etc.) is already underway but to support and further accelerate SESAR deployment, a specific regulatory framework³ has been created for those ATM functionalities requiring synchronised deployment, also known as "common projects".

1.4 Performance-based development and deployment of SESAR Solutions is an important characteristic of the European approach to GANP Implementation. It is accompanied by a dedicated implementation monitoring mechanism linked to the ATM Master Plan and known as ESSIP/LSSIP (European Single Sky ImPlementation/Local Single Sky ImPlementation). Such ESSIP/LSSIP mechanism is (and will be) used as main input to the eANP, the European Air Navigation Plan, in support of the EUR regional GANP planning and monitoring process. It also benefits, as regards common projects, of the monitoring function of the SESAR Deployment Manager.

2. DISCUSSION

2.1 While the GANP framework and its ASBUs methodology focusses on the maintenance and enhancement of the aviation system and on a harmonisation of ATM modernisation programmes at the global level, its implementation is intended to be flexible. States and regions can choose to implement certain ASBU Modules based on specific operational requirements and/or expected related benefits. This is the performance based approach for the ASBUs implementation which is also accompanied and supported, at the regional level, by regional planning and performance/implementation monitoring by the ICAO PIRGS, i.e. the EANPG for the EUR region.

2.2 A European framework for GANP Implementation

2.2.1 Since 2004 the core of Europe's implementation of the GANP is performed under the Single European Sky (SES) policy framework, and more specifically through SESAR, Europe's ATM modernisation programme. The implementation of the technical and operational ATM solutions that will contribute to the performance benefits of the European ATM network requires careful planning: in line with the performance-based approach to the ASBUs implementation, the European ATM Master Plan has

³ Commission Implementing Regulation (EU) N° 409/2013 of 3 May 2013.

outlined performance ambitions that SESAR may enable through the full implementation of its vision within the 2035 timeframe. Such performance ambitions are aspirational and refer to the performance capability that may be achieved if SESAR Solutions are duly developed through R&I activities, timely deployed when needed and used to their full potential. The European ATM Master Plan identifies the operational changes and related technical enablers to support such ambitions, providing also specific roadmaps for their expected development. It should be noted that the 2015 edition of the Master Plan has evolved to include important new aspects/elements affecting ATM such as an initial focus on RPAS, Cyber Security tools and the concept of Common Support Services. To support global interoperability the operational achievements in the European Master Plan remain consistent with the elements in the ICAO ASBUs and it also includes a mapping between SESAR Operational Changes and the ICAO Blocks.

2.2.2 The SESAR project has been set up⁴ to develop the new generation European air traffic management system to gather the expertise and resources of the entire European ATM community and concentrate all ATM R&I efforts to develop and validate the SESAR solutions required in preparation for their deployment. Under the management of the SESAR Joint Undertaking, the SESAR programmes have delivered since 2011 a large number of so-called "SESAR Solutions", operationally validated notably through pre-industrial development and/or system integration testing and verification: those SESAR Solutions considered "ready for industrialisation and deployment" include e.g. the "Remote tower for two low-density airports" allowing the provision of ATC services or AFIS to two low-density airports simultaneously by a single operator located at a remote location, or the "Extended arrival management (E-AMAN) horizon", allowing for the sequencing of arrival traffic much earlier than is currently the case.

2.2.3 To further accelerate the deployment, under the safety oversight of EASA, of those available SESAR Solutions requiring synchronisation and demonstrating the most network benefits, a dedicated SESAR deployment regulatory framework has been set up. Then, building on and making use of a financial incentivisation mechanism (the Connecting Europe Facility - CEF)⁵, and in line with ICAO Doc 9082, a first set of SESAR ATM functionalities demonstrating, in a combined manner, a positive business case at the European ATM network level, and known as the Pilot Common Project (PCP)⁶, have been selected for deployment on the basis of their maturity for implementation and on their need for synchronised deployment. Those selected ATM functionalities include notably Extended Arrival Management, Performance Based Navigation in the High Density Terminal Manoeuvring Areas or Initial System Wide Information Management. The responsibility to ensure the management of their implementation has been granted to a newly created SESAR entity, the SESAR Deployment Manager (SDM), tasked to develop and execute the Deployment Programme, which constitutes a comprehensive and structured work plan of all activities required to implement the selected Common Projects.

2.3 Performance-based approach to implementation

2.3.1 In line with the performance-based approach for ASBUs implementation, the whole SESAR framework stems from a performance-based approach, with the setting up of SESAR performance ambitions, aligned with the European Commission's policy targets of the Single European Sky requiring the design of the European ATM system to be able to handle a three-fold increase in capacity, improve safety by a factor of 10, enable a 10% reduction in CO2 emissions per flight and reduce the unit cost of ATM services to the airspace users by 50%. Those SESAR performance ambitions have been expressed in terms of Key Performance Indicators (KPIs) in the areas of capacity, cost efficiency

⁴ Council Regulation (EC) No 219/2007 of 27 February 2007 on the establishment of a Joint Undertaking.

⁵ Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010.

⁶ Commission Implementing Regulation (EU) No 716/2014, of 27 June 2014, on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan.

(ANS productivity), operational efficiency, environment, safety and security. Those KPI's include e.g. departure delays, fuel burn per flight, CO2 emission, gate-to-gate ANS unit cost, etc.

2.3.2 To ensure that the planned implementation delivers the expected Solutions, it is key to ensure its operational monitoring and related performance and to provide the necessary progress reports and plans. The European ATM Master Single Sky Implementation Plan Level 3 (the ESSIP), incorporates the mature and performing elements ready for deployment. It defines the common implementation actions needed to improve the European ATM network in the short to medium-term. The ESSIP is supported by the Local Single Sky Implementation Plans (LSSIP) monitoring process for 42 ECAC States. The LSSIP tool assists States and stakeholders in their own monitoring and reporting efforts. The ESSIP Report is produced on the basis of LSSIP documents to address the yearly progress made in the implementation of actions. It provides an input to the maintenance of the European ATM Master Plan, assists in defining the strategy to follow and in preparation of the next year's ESSIP Plan.

2.3.3 Considering the alignment of the European ATM Master Plan with the ICAO GANP and ASBUs and recognising the role of the ESSIP as the level 3 of the European ATM Master Plan, it has been agreed between EUROCONTROL, the European Union and the ICAO EUR office to make use of the existing reporting mechanism for developing progress reports of the ASBU implementation in the European Region for the ECAC States. In addition, and to complete the picture in the EUR Region a specific ICAO EUR ASBU questionnaire was prepared for the non-ECAC States. This successful cooperation contributed to preventing unnecessary duplication of effort and investments. The 2014 ASBU Implementation Monitoring Report provided to the EANPG/57 presented an overview of current Block 0 implementation status for 42 ECAC States and 4 non ECAC States, showing the level of implementation and highlighting the areas with potential risk of delay. The reporting cycle 2015 has started and will end in May 2016 with the release of another implementation progress report.

2.3.4 In addition to the ESSIP Plan, and specifically related to the SESAR Deployment framework, the Deployment Programme provides an additional performance view and a monitoring view and includes an annex on standardisation which is an enabler for industrialisation of solutions and needs to be closely monitored as well. To ensure timely development of standards and specifications applicable and critical for industrialisation and implementation of ATM functionalities, Europe has established the European ATM Standardisation Coordination Group (the EASCG), which is developing a standardisation development rolling programme, consolidating the ATM standardisation programmes of various SMO's and directly supporting the development of the ICAO Standardisation Roadmap.

3. CONCLUSION

3.1 This paper has presented information on how Europe is implementing the GANP, acting at a regional level, with a clear policy and institutional framework (Single European Sky), and in close collaboration with all stakeholders for the development and implementation of the needed ATM solutions required, through the SESAR programme. The paper also underlines the performance-based approach applied to implementation and the management and monitoring instruments in place to support it; and specifically report on the ASBUs Implementation Monitoring Report for 2014 developed for the ICAO EUR/NAT office and approved by the EANPG.

3.2 The Assembly is invited to note the information provided in this paper.