



ASSEMBLY — 36TH SESSION

TECHNICAL COMMISSION

Agenda Item 31: Continued evolution of a performance-based global air traffic management (ATM) system

SINGLE EUROPEAN SKY, THE ESTABLISHMENT OF THE EUIR AND THE NEED FOR COORDINATION OF ATM MODERNISATION PROGRAMMES

(Presented by Portugal, on behalf of the European Community and its Member States¹, by the other States Members of the European Civil Aviation Conference², and by EUROCONTROL)

EXECUTIVE SUMMARY

This paper reviews the state of play of the Single European Sky initiative and its relevance for non-EU Contracting States, requests the ICAO to take note of the future establishment of the European upper flight information region (EUIR), and proposes ICAO to coordinate SESAR in a systematic manner with other similar initiatives so as to ensure seamless implementation of new technologies and systems with a worldwide impact.

Action: The Assembly is invited to:

- a) Take note of the development of SES and its relevance for non-EU States;
- b) Take note of the legal provision of the SES concerning the future establishment of the EUIR in the framework of the reorganisation of the European airspace structure associated to the SES and instruct the Council and the Secretariat General to coordinate on this establishment with the European Commission; and
- c) Launch an initiative to coordinate globally in a systematic manner SESAR and NEXTGEN and all those sub-regional initiatives that may be undertaken for the future implementation of new technologies and systems with a worldwide impact.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective D (<i>Efficiency – Enhance the efficiency of aviations operations</i>)
<i>Financial implications:</i>	Not applicable
<i>References:</i>	

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 the ECAC.

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

1. THE SINGLE EUROPEAN SKY: PROGRESS AND INTERNATIONAL RELEVANCE

1.1 At the last Assembly, the European Community and its Member States informed the Contracting States on the concept and the implementation of the Single European Sky (SES), the ambitious initiative to reform the architecture of European air traffic control to meet future capacity, safety and environmental needs. In short, the SES initiative is intended to organise airspace and air navigation at the regional level in Europe, rather than at local level. The initiative is not limited geographically to the boundaries of the European Union (EU).

1.2 In 2006 the European Community and its Member States have signed a comprehensive multilateral aviation agreement with 10 EU neighbouring states, establishing the European Common Aviation Area (ECAA). The extension of SES to all parties to the ECAA forms one of its essential elements. The same is true with regard to the comprehensive aviation agreement signed in 2006 with Morocco. Earlier, the SES was already extended to Norway, Iceland, Liechtenstein and Switzerland. As a consequence, the SES is currently to be adopted and implemented by 38 States in Europe, and by one in Africa.

1.3 Finally, it has to be noted that many of the principles underlying SES, such as the creation of Functional Airspace Blocks in function of traffic flows rather than of national borders, or the effective application of the flexible use of airspace, as described by the ICAO, creating intense cooperation between civil and military users of airspace, could prove useful for many Contracting States looking for ways to make the use of their airspace more efficient. In this respect Europe is at the full disposal of such countries.

1.4 Since the adoption in 2004 of the basic SES regulations, the European Commission has been very active in the legislative implementation of the SES legislation, on the basis of a work programme developed by the EU Member States and stakeholders. This legislative process takes the form of implementing rules prepared on the basis of mandates given to specialised bodies such as Eurocontrol, setting out the tasks to be performed and the timetable thereof. Eurocontrol is the body that has the appropriate expertise to support the European Commission in its role as a regulator, and it does so for matters within the remit of the Agency. In the last two years, work was completed on several regulations, the latest adopted being those dealing with the new charging scheme, airspace classification, coordination and transfer of flights and the initial flight plans.

2. THE EUROPEAN UPPER FLIGHT INFORMATION REGION (EUIR)

2.1 Of particular relevance for ICAO is the fact that, according to Regulation (EC) No 551/2004 of the European Parliament and of the Council on the organisation and use of the airspace in the Single European Sky, the Community and its Member States shall aim at the establishment and recognition by the ICAO of a single European Upper Information Region (EUIR). This initiative, in conjunction with Functional Airspace Blocks (FAB), will contribute to the elimination of the existing fragmentation and operational deficiencies by unifying the upper flight framework of the participating countries for optimising the provision of ATS, in order to facilitate operational improvements and complimentary cost benefits. The EUIR will facilitate common planning and a single aeronautical information publication in order to overcome regional bottlenecks and reduce fragmentation costs by establishing an upper airspace continuum that would enable harmonised and simplified airspace organisation.

2.2 In the same context, the Eurocontrol Airspace Strategy for the ECAC States listed the strategic steps to be taken towards a simplified airspace organisation. The first step proposed was the harmonisation of ICAO Airspace Classification of all Upper ECAC airspace above a common agreed level.

3. **SESAR, THE EU MODERNISATION PROGRAMME**

3.1 **Introduction**

3.1.1 Air traffic management is in an urgent need to modernise. Most of the current basic technologies are dating from more than 30 years ago, and, even if considerable progress has been made in some fields such as data processing or hardware equipment, the basic architecture of ATM systems remains unchanged.

3.1.2 ICAO has undertaken a major effort in producing guidelines and guidance material for a new global ATM operational concept, and a performance-driven approach. This is an important step for modernising ATM. It needs to be complemented by actual development and implementation programmes, which will refine the overall ICAO operational concept, develop and implement the new technologies, systems, operational procedures and organisations that can make change happen.

3.1.3 SESAR (SES ATM Research) is the technological component of the SES and the response to such a challenge. The programme was built in order to support the implementation of a true single airspace, but it will also be supported by the SES legislation, and in particular the interoperability part of it. The programme was also built in order to make sure that all efforts and resources in Europe would be pulled together in a unified manner.

3.1.4 SESAR is composed of 3 phases:

- The definition phase (2005-2008) will produce the European ATM Master Plan. The ATM Master Plan will further develop the ICAO guidelines into a refined operational concept, R&D work plan and implementation roadmap.
- The development phase (2007-2013) will use the European ATM Master Plan as the foundation to develop and validate the technologies, systems, operational processes which are necessary to implement the new generation ATM in Europe.
- The deployment phase (2014-2020) will implement the result of the definition phase

3.2 **SESAR Governance and its international dimension**

3.2.1 SESAR is innovative in terms of governance, in particular by recognising the role that industry needs to play in the definition and development of the new generation of systems. Hence, the definition phase, co-funded by the EU and Eurocontrol and managed by Eurocontrol, is realised by an industry consortium, made of about 60 partners and associated parties, representing all stakeholders. The definition phase is thus expected to result not only in 6 reports, but also and most importantly in the buy-in from industry to actually implement what is part of the ATM Master Plan.

For the development phase, one of the key challenges is to make sure that all relevant programmes would be aligned with the ATM Master Plan. It was deemed essential that an *ad hoc* structure be created in order to manage the programme in an efficient manner.

3.2.2 The EU therefore has set up the SESAR Joint Undertaking, a legal entity under EU law which will become the ‘owner’ of the European ATM Master Plan, and will be responsible for its execution. The SESAR Joint Undertaking (JU) will have two founding members, the European Community and Eurocontrol. It is expected to receive other members from industry, including organisations from partner countries outside of the EU. This is true for organisations in States which become part of the Common Aviation Area (as outlined in paragraph 2.1), which are considered to be “natural” partners in the programme, but is equally true for organisations in any other interested Contracting State having previously signed at least one agreement with the European Community in the field of air transport. The JU is thus a public private partnership, with the capability to develop international cooperative work for the development of new technologies and systems.

3.3 The Performance framework in SESAR

3.3.1 The SESAR definition phase consortium delivered a report in December 06 which defines the performance framework in which the new generations of ATM systems resulting from SESAR will be built and operated. This performance framework is fully aligned with the relevant ICAO recommendations.

3.3.2 The key performance areas identified in SESAR are grouped into three main clusters:

- “societal outcome”, which have a high visibility, even to those who are not users of the air transport system. This takes into account Safety, Security and Environmental sustainability.
- “operational performance”, which are visible to Air Navigations Service Providers, Airport Operators, airspace users and airspace user customers (e.g. passengers). These are Cost effectiveness, capacity, efficiency, flexibility and predictability.
- “performance enablers”, which are not of direct interest to air transport end users, but are part of the operational processes. These are Access & Equity, Participation and interoperability.

3.3.3 There are performance dimensions which can only be captured in a global manner, for instance on safety, security or environment. For those, it is essential that pragmatic coordination take place with other regions of the world, in order to make sure that aviation, a global industry per nature, meets societal expectations.

3.4 Relationship with other modernisation programmes

3.4.1 NEXTGEN, the US modernisation programme

3.4.1.1 The United States has launched on its part an air transport infrastructure modernisation programme, called initially NGATS and then NEXTGEN, which has a larger scope than SESAR since it also deals with airports infrastructure, including security equipments in the airports.

3.4.1.2 The same logic as in Europe resulted in the creation of the Joint Planning and Development Office (JPDO) to manage the programme.

3.4.1.3 In order to make sure that SESAR and NEXTGEN would be interoperable, the European Commission and the Federal Aviation Administration (FAA) signed on July 17th 2006 a Memorandum of Understanding (MoU) establishing processes to coordinate the two initiatives. This MoU complements the Eurocontrol-FAA framework for technical cooperation.

3.4.1.4 The objective of this MoU is to define reciprocal arrangements enabling appropriate involvement from each party in the other's consultation and decision making fora. For instance, the FAA participates in the Industry Consultation Body established under the SES legislation; the European Commission participates in turn in the Air Traffic Management Advisory Committee (ATMAC).

3.4.1.5 The MoU will ensure that information is shared between the European Commission and the FAA well before the standardisation processes are launched, in order to enable discussions which can further enhance interoperability.

3.4.1.6 Concrete actions have been taken, in particular in the field of environment, in order to build common actions that would result in more environmentally-friendly transatlantic operations. It is expected that the MoU would lead to specific coordination actions on all performance indicators associated to the development of the SESAR and NEXTGEN systems and technologies.

3.4.2 Relationship with other partners

3.4.2.1 The European Commission has already started initial discussions with a number of partner countries. The SESAR JU is gradually starting its operations and it is expected that discussions will take a more concrete and operational form in the year 2008. Third country partners (as outlined in paragraph 3.2) becoming members of the SESAR JU will formally participate to its Administrative Board, which is its main decision-making body. They will also participate in the work performed under the responsibility of the JU, in areas and under conditions described in their membership agreements.

4. CONCLUSIONS

4.1 The SES is advancing at a good pace. Important measures have been taken since the adoption of the main framework legislations in 2004 to harmonise the legislative framework in the participating countries.

4.2 The SES initiative is not limited to the boundaries of the EU. Due to the global character of aviation and the significant changes it entails from an operational and institutional point of view, the SES is being extended to neighbouring countries that are not members of the EU. In addition, the expertise being built up can prove relevant for other Contracting States.

4.3 The EUIR has to be understood as one of the main Community instruments to perform effectively the reorganisation of the airspace associated to the SES. The instrument is part of the SES concept of "airspace" as a common resource for all categories of users that needs to be used flexibly by all of them, ensuring fairness and transparency.

4.4 SESAR provides a unique opportunity for modernisation of ATM infrastructure:

- by linking technological development activities with legislative work, and
- by pooling all resources into a consistent programme, managed by a single entity

4.5 SESAR is to have a wide global impact in terms of introduction and harmonisation of new technologies, and is being developed with a particular openness to non-EU Contracting States.

4.6 SESAR and NEXTGEN are two major regional initiatives. Further coordination needs to take place between these and also with other regional initiatives, in order to make sure that aviation meets societal expectations in a global environment.

— END —