

## **EUROPEAN AIR TRAFFIC MANAGEMENT AND SINGLE EUROPEAN SKY (SES)**

### **A fragmented, inefficient and antiquated European ATM system**

Air Traffic Management (ATM) in Europe has traditionally been organised at State level and within the confines of Flight Information Regions. This has meant that ATM provision has been significantly fragmented with neighbouring states operating different systems and procedures, equipment and training standards. This has affected the overall performance of the European system adversely.

All this is against a backdrop of increasing air traffic growth, particularly with the entry into the market of low cost carriers and the liberalisation of air services in Europe. Current projections for the development of air traffic control in Europe show that it will more than double or even treble in some regions, particularly central Europe, in the next 20 years.

Many of the air traffic systems in place at the moment date back 30 years or more, are reaching the limits of their capacity to evolve and are not well-adapted to make best use of new technologies such as data link and satellite navigation.

The constant challenge for States, their air navigation service providers and airspace designers is to create sufficient new capacity to absorb the increased traffic growth. Failure to do so results in air traffic delays which are costly to the European economy generally and airlines specifically, as well as being inconvenient to passengers.

### **Single European Sky**

The European Commission (EC) has made the reform of air traffic management in Europe one of its priority actions. It launched its Single European Sky (SES) initiative in late 1999 as a response to the worsening air traffic delay situation at the end of the 1990s. SES aims to create a more uniform and better managed European air traffic management system. Regulations<sup>1</sup> have been put in place on air navigation service provision, airspace design and management, and interoperability, with an overarching Framework Regulation. Further implementation measures have flowed from these regulations, for example on a common charging scheme, common requirements for air navigation service providers, and airspace and interoperability measures. Further measures are under development.

The Civil Aviation Authority (CAA) has been designated as National Supervisory Authority (NSA) for the purposes of the SES legislation.

### **SESAR – the project to modernise the European ATM system**

The associated SESAR programme (Single European Sky Air Traffic Management Research) has also been launched as Europe's ATM modernisation tool. Industry-led, it has gained the buy-in of aviation stakeholders and the European Commission. A two-year Definition Phase, led by a consortium and jointly funded by the EC and Eurocontrol, was launched in February 2006. It delivered its main output - the SESAR Master Plan - in March 2008.

In parallel to this the EC put in place Regulation (EC) 219/2007 establishing a Joint Undertaking (JU), a Community governance structure allowing a public-private partnership, for SESAR to oversee the implementation of the ATM Master Plan. The European Commission and EUROCONTROL are "founding members" of the SESAR JU (S-JU) and have subsequently been joined by 15 private industry partners. Amending Regulation (EC) 1361/2008 came into force on 17 December 2008, redefining the legal status of the SESAR JU to give it the status of a "Community Body" entitling it to substantial tax savings.

Member States agreed a Resolution on SESAR at the October 2008 Transport Council setting out essential prerequisites for the implementation of the Master Plan and formally endorsed it at the

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<sup>1</sup> Regulation (EC) No 549/2004 laying down the framework for the creation of the Single European Sky.  
Regulation (EC) No 550/2004 on the provision of air navigation services in the Single European Sky.  
Regulation (EC) No 551/2004 on the organisation and use of the airspace in the Single European Sky.  
Regulation (EC) No 552/2004 on the interoperability of the European air traffic management network.

March 2009 Transport Council as the first iteration of the European ATM Master Plan. This paved the way for the S-JU to formally conclude membership agreements with the 15 private industry partners who had lodged expressions of interest (including NATS and an airports consortium involving BAA) and with EUROCONTROL, which it did on 12 June 2009, officially launching the Development Phase of the programme which will run through until 2014.

The budget for the Development Phase of SESAR totals EUR 2.1billion - EUR 700 million each from the Commission (drawing on funds from the 7th Framework Programme for Research and Technology and the Trans-European Networks – Transport programme), Eurocontrol (90% in-kind contribution) and the 15 private industry partners (their collective contribution again being 90% in-kind).

The Commission will issue a Communication (plus appended legislative proposal) in 2010 on the governance and funding of the Deployment Phase of SESAR which is scheduled to start in 2015.

### **Reviewing progress in SES implementation**

Under the Framework Regulation the Commission must report progress on the implementation of the SES to the Council and the European Parliament every 3 years and outline next steps.

The Commission issued a Communication<sup>2</sup> on 8 January 2008 entitled "First Report on the implementation of the Single Sky Legislation - achievements and the way forward". The report noted progress made, including the establishment of the institutional framework, the separation of service provision and regulation in Member States, certification of air navigation service providers (ANSPs), implementation of a common charging scheme, and the launch of the SESAR project. However, the report also concluded that SES had not delivered the expected results in important areas, in particular improved cost-efficiency, system design and efficiency and the introduction of cross border "functional airspace blocks" (FABs). The Communication signalled the Commission's intention to come forward with further proposals.

### **Single European Sky II**

On 25 July 2008 the Commission issued a further Communication<sup>3</sup> entitled "Single European Sky II: towards more sustainable and better performing Aviation" which set out the Commission's proposals in the shape of four linked "pillars" of action.

#### SES II First Pillar – Regulating performance

This had a related a legislative proposal to amend the four SES high level regulations ("SES I") to achieve the following:

- The introduction of a system of performance regulation through the setting of binding targets (including economic and environmental targets) which will be overseen by an independent performance review body monitoring and assessing the performance of the system. NSAs must set local targets which are consistent with the Community-wide targets set by the Commission
- Acceleration of initiatives to integrate service provision within functional airspace blocks by 4<sup>th</sup> December 2012 at the latest and the appointment of a "FAB Coordinator"
- Strengthening of the network management function.

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<sup>2</sup> COM(2007) 845 final

<sup>3</sup> Communication COM (2008) 389/2 "Single European Sky II: towards more sustainable and better performing aviation

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## SES II Second Pillar - a single safety framework

This entailed a legislative proposal to extend the remit of the European Aviation Safety Agency to include air navigation service, air traffic management and aerodrome safety, making it the single aviation safety regulator in Europe.

## SES II Third Pillar - opening the door to new technologies

This pillar is the modernisation of the European ATM system through the SESAR programme.

## SES II Fourth Pillar - managing capacity on the ground

Airport capacity needs to remain aligned with ATM capacity to preserve the overall efficiency of the network. The European Parliament and the Council have endorsed an 'action plan for airport capacity, efficiency and safety in Europe'. The action plan contains several measures to increase the output and optimise the planning of airport Infrastructures, while at the same time raising safety and environmental standards. The Commission has set up an Airport Observatory composed of Member States, relevant authorities and stakeholders to exchange and monitor data and information on airport capacity as a whole. The Observatory will also offer advice on network management tasks. A status report can be found at Annex F.

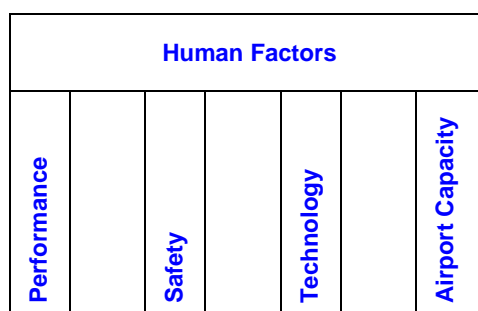
The SES I-amending and EASA legislative proposals were agreed through the co-decision procedure. The European Parliament and the Council reached a First Reading deal on 25 March 2009. Ministers welcomed the deal at the 30 March Transport Council and officially endorsed the texts at the September 2009 Transport Council. Both regulations have now been published in the Official Journal of the European Union and came into force on 4 and 14 December 2009 respectively.

Under the SES II package, notably with the introduction of an SES performance scheme, the associated role and responsibilities of NSAs have been enhanced, both in definition and scope. In recognition, an NSA Platform has been set up to facilitate more thorough coordination between NSAs; this met for the first time on 16 December 2009. In addition, Member States have a responsibility under SES II to ensure that NSAs have the necessary resources to carry out their tasks.

## SES II "Fifth Pillar"

The implementation of SES II and SESAR will involve the synchronised actions of a multitude of "actors". The European Parliament's European Economics and Social Committee, in its Opinion on the SES II package recommended the incorporation of a fifth and overarching pillar in SES to acknowledge the human factor as the overriding enabler of change. The EESC emphasised the need for the social partners to be involved in SES implementation to promote the involvement of staff representatives, ensure the adequate level of competence and training of the professionals, and to build the performance scheme on a genuine safety culture, integrating effective incident reporting and "just culture".

### The 5 Pillars of SES



Following an extraordinary Transport Council meeting convened on 4 May to review the implications of the volcanic ash crisis for the industry, the European Commission has declared the need to “fast-track” the implementation of the SES. In particular, the Commission proposes to proceed with the appointment of the FAB coordinator forthwith, and Member States approved the Commission’s intention to appoint former MEP for Germany Georg Jarzembowski to the post at the 35<sup>th</sup> Session of the Single Sky Committee on 7 May. The Commission also proposes the immediate creation of a crisis coordination cell involving Eurocontrol, EASA, Member States and air transport stakeholders. The crisis cell will coordinate the response to sudden crises and take appropriate actions. In addition the Commission intends to make proposals before the summer of 2010 to enable unmanned aerial vehicles (UAVs) to be operated in the SES to collect data from the atmosphere.

The following Annexes are attached giving details of progress on the various SES fronts as at 26 May 2010.

Annex A – SES I: Regulations and Implementing Rules in force;  
Annex B – SES I/SES II: Implementing Rules under development;  
Annex C – SES II: First Pillar: (Key Themes) SES Performance Scheme and Network Management Function;  
Annex D – SES II: Second Pillar: a single European aviation safety regulator (EASA);  
Annex E – SES II: Third Pillar: the introduction of new technologies – SESAR;  
Annex F – SES II: Fourth Pillar: managing capacity on the ground.  
Annex G – SES II Fifth Pillar: Human factors.

European Airspace Branch  
International Aviation and Safety Division  
Department for Transport

26 May 2010

## SES I – REGULATIONS AND IMPLEMENTING RULES IN FORCE AS AT 26 May 2010

### Regulation (EC) No. 549/2004 laying down the framework for the creation of the single European sky as amended by Regulation (EC) No 1070/2009

**Into force:** 20/04/04 with SES II amendments coming into force 04/12/09.

#### **Scope:**

##### SES I scope

The Framework Regulation, supported by three other regulations (air navigation service provision, airspace, and interoperability (see below) is designed to create a European airspace conceived and managed as a single continuum (the Single European Sky – SES) to optimise the safety and efficiency of the European Air Traffic Management Network (EATMN). It sets out:

- a list of the high level principles that must be followed in the creation of a Single Sky including the designation of a National Supervisory Authority which must be structurally or functionally separate from the service provider (UK has designated CAA as NSA);
- a definition of the work of the proposed Single Sky Committee (SSC) and an associated Industry Consultation Body;
- relations with non-Community (“third”) countries;
- supervision, monitoring, performance review and impact assessment mechanisms;
- requirements for MS to report annually to the Cion on the implementation of SES;
- a military “carve-out” provision in view of the fact that military operations and training are a State responsibility – however, MS agreed a statement on military issues appended to the Framework Regulation declaring their intention to enhance civil-military cooperation with respect to SES.

##### SES II amendments to scope

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|-------------|--|
| Article 1:  | A further, environmental, objective for SES is added   |
| Article 4:  | A new obligation is placed on Member States to ensure that NSAs are independent of any other public or private entity when carrying out SES tasks.   |
| Article 11: | Empowers the Commission to establish a performance scheme for SES. An Independent Performance Review Body is to be set up to assist the Commission in the implementation of the performance scheme. NSAs are required to prepare national or regional (FAB) performance plans with binding targets consistent with Community-wide performance targets. |

## Regulation (EC) No. 550/2004 on the provision of air navigation services in the single European sky as amended by Regulation (EC) No 1070/2009

**Into force:** 20/04/04, except for Articles 7 (Certification of ANSPs) and 8 (Designation of ANSPs) which came into force on 21 December 2006 a year after the publication of the Common Requirements (CRs) in the OJEC. The SES II amendments came into force 04/12/09.

### Scope:

#### SES I scope

This Regulation sets out an authorisation system, compliance review mechanism and revised payment arrangements for the provision of air navigation services within the Community. The NSA is tasked with issuing authorisations to service providers and ensuring that these are complied with as well as designating them to provide services within a given block of airspace. The regulation also provides for the establishment of a common European Air Traffic Controller's Licence. There is to be mutual recognition between MS of all such certificates and licences. Under the regulation EUROCONTROL's Safety Regulatory Requirements (ESARRs) will be made mandatory in Community States. The Regulation further proposes the establishment of an equitable charging regime for air navigation services with the aim to achieve greater transparency with respect to the costs charged to airspace users.

#### SES II amendments to scope

- Article 8: (Designation of air traffic service providers) now requires Member States to remove any provisions in its domestic legislation which preclude it from designating an ANSP established in another Member State or owned by nationals of that Member State.
- Article 9a: (Functional Airspace Blocks) is a new obligation to accelerate the formation of FABs and replaces the existing article on FABs (Article 5 of the Airspace Regulation. It sets a deadline for FAB formation and also empowers the Cion to develop detailed implementing rules in this area.
- Article 15: (Principles) enables the Commission, in accordance with Article 5(3) of the Framework Regulation, to clarify mechanisms for the financing of common projects which will contribute to the realisation of the Single European Sky. The Commission shall carry out an independent cost-benefit analysis and substantive consultation with service providers and airspace users before reaching a decision.

## Regulation (EC) No. 551/2004 on the organisation and use of airspace in the single European sky

**Into force:** 20/04/04 with the SES II amendments coming into force 04/12/09.

### Scope:

#### SES I scope

This Regulation sets out a mechanism to establish a single coherent Community airspace with common design, planning and management procedures. This includes the creation of a single new European Upper Flight Information Region (EUIR) above 28500 feet, to be followed within three years by the creation of a single FIR in the lower airspace. This is in contrast to the current situation of around 50 FIRs across the Community States and over 70 FIRs in the EUROCONTROL area. The Upper FIR would include a number of "functional" blocks of airspace designed to maximise system efficiency rather than as at present be restricted to national



boundaries. The Regulation also proposes enhanced civil/military co-ordination, including the full application of the Flexible Use of Airspace (FUA)<sup>4</sup> concept, and the establishment of criteria for the use of segregated airspace.

#### SES II amendments to scope

- Article 2: (Division level) setting the division level of upper and lower airspace at Flight Level (FL) 285 (28,500 ft) is removed.
- Article 3a: (Aeronautical information) is a new obligation requiring the Commission to ensure that electronic aeronautical information is available to all relevant users. The Commission will establish an electronic integrated briefing portal with unrestricted public access to achieve this aim.
- Article 6: Retitled 'Network Management and Design', this revised Article gives the Commission responsibility for establishing a robust network design and management function for the SES.

### **Regulation (EC) No. 552/2004 on the interoperability of the European Air Traffic Management Network**

**Into force:** 20/04/04 with the SES II amendments coming into force 04/12/09

#### **Scope:**

#### SES I scope

This Regulation is designed to achieve interoperability between the Community's air navigation service providers and the creation of an internal market in equipment, systems and associated services. This includes the establishment of European technical ATM standards in co-operation with EUROCAE and, where relevant, with EUROCONTROL. The regulation establishes transparent procedures for the verification of compliance. MS must notify the Commission and other MS of bodies they appoint to assess conformity. There is a target date of 20 April 2011 for full compliance with interoperability standards. To support these objectives the proposal requires the Commission to consult relevant stakeholders with a view to establishing a widely supported strategic management programme for the introduction of new concepts and technologies in the Community ATM network.

#### SES II amendments to scope

- Article 6a: (Alternative verification of compliance) is a new provision allowing for EASA certificates to be considered as an EC declaration of conformity or suitability for use or as an EC declaration of verification, providing that it demonstrates that the essential requirements in Annex II of the Interoperability Regulation have been met.
- Annex II: (Essential Requirements) proposes an amendment to include references to the concept of sustainability in respect to new and agreed concepts of operation, and to make cross-references to the requirements of the SESAR ATM Master Plan.

<sup>4</sup> FUA is the principle that airspace should no longer be designated as either pure civil or military airspace, but considered as one continuum in which all airspace user requirements have to be accommodated to the extent possible.  
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<p><b>Service Provision: Commission Regulation EC No. 2096/2005 laying down Common Requirements for the provision of air navigation services</b></p> <p><b>Into force:</b> 24/12/05 – However, under the Service Provision Regulation, MS were not required to certify in accordance with the CRs until 21/12/06 the date of publication of the CRs in the OJEC and “in exceptional circumstances” could postpone compliance for a further 6 months.</p> <p><b>Scope:</b></p> <p>This Regulation lays down in detail the Common Requirements (CRs) for air navigation service provision (includes ATS, Met Services, AIS, and CNS/ATM provision). It tasks the NSA with compliance verification and annual monitoring of compliance with the CRs by ANSPs. The general requirements with which all service providers must comply are set out in Annex 1 to the CRs Regulation and include requirements relating to technical and operational competence and capability, organisational structure and management, safety and quality management, security, HR, financial strength, liability and insurance cover, quality of services and requirements for annual reporting to the NSA. Annexes II, III, IV and V set out specific requirements for the different types of service provider (ATS, Met, AIS and CNS/ATM respectively). In addition, the regulation adopts ESARR 3 (on the use of safety management systems), ESARR 4 (on risk assessment and mitigation in ATM, and ESARR 5 (on ATM services’ personnel, requirements for engineering and technical personnel undertaking operational safety related tasks). The regulation also provides for a “peer review” procedure for MS.</p>
<p><b>Airspace: Commission Regulation EC No 2150/2005 laying down common rules for the flexible use of airspace</b></p> <p><b>Into force:</b> 13/01/06, except Article 6 (Tactical airspace management (level 3)) which will come into force 12 months after this date.</p> <p><b>Scope:</b></p> <p>This Regulation reinforces and harmonises the application with the SES of the concept of FUA. In particular the regulation sets out rules to ensure better cooperation between civil and military entities responsible for ATM in the SES. MS are required achieve 3 different levels of FUA: Level 1 (the overarching “strategic management of airspace” and how this is used to foster FUA), Level 2 (the “pre-tactical airspace management” where an organisational unit is tasked with managing and developing the FUA), and Level 3 (the day to day “tactical management of airspace” through close co-ordination between civil and military air traffic authorities). Under the Airspace Regulation MS are required to submit annual reports to the Cion on the application of the FUA concept in their airspace.</p>
<p><b>Airspace: Commission Regulation EC No 730/2006 on airspace classification and access of flights operated under visual flight rules above flight level 195</b></p> <p><b>Into force:</b> 05/06/06, but “shall apply from 1 July 2007”</p> <p><b>Scope:</b></p> <p>This Regulation establishes a harmonised airspace classification (Class C) to be applied by MS above flight level 195 (19,500 ft), and lays down harmonised requirements for access of flights operated under Visual Flight Rules (VFR) to this airspace.</p>



## **Service Provision: Directive 2006/23/EC on a Community air traffic controller licence**

**Status:** Directive into force 17 May 2006 – transposed into UK law by SI 2009/1742

The Air Navigation (Amendment) Order 2009. Repealed by Regulation (EC) 1108/2009 (extending the scope of EASA to cover ATM, ANS and Aerodrome Safety) but the provisions of the Directive shall continue to apply on a transitional basis, until it is superseded by implementing measures under the EASA legislation.

### **Scope:**

The objective of this Directive is the harmonisation of air traffic controller training and licensing standards, and mutual recognition of licences between MS - it will facilitate the greater mobility of labour and enhance air safety across Europe. The Directive is based on the relevant provisions of ESARR5 (adopted under the Common Requirements Regulation – see above).

## **Interoperability: Commission Regulation EC No 1033/2006 laying down the requirements on procedures for flight plans in the pre-flight phase for the single European sky**

**Into force:** 27/07/06 but “it shall apply from 1 January 2009”.

### **Scope:**

This Regulation lays down the requirements on procedures for flight plans in the pre-flight phase in order to ensure the consistency of flight plans, repetitive flight plans and associated update messages between operators, pilots and air traffic services units through the Integrated Initial Flight Plan Processing System. These requirements relate to interoperability, performance, safety and other requirements. The Regulation shall apply to flights operating as general air traffic (GAT) in accordance with Instrument Flight Rules.

## **Interoperability: Commission Regulation EC No 1032/2006 laying down requirements for automatic systems for the exchange of flight data for the purpose of notification, coordination and transfer of flights between air traffic control units**

**Into force:** 27/07/06 but shall apply to:

- flight data processing systems serving air traffic control units providing services to GAT by 1 January 2009, and to;
- flight data exchange systems supporting the coordination procedures between air traffic services units and controlling military units by 31 December 2012 for all such systems in operation by then.

### **Scope:**

This Regulation lays down requirements for the automatic exchange of flight data for the purpose of notification, coordination and transfer of flights between air traffic control units and for the purpose of civil-military coordination. These requirements relate to interoperability, performance, quality of service, safety, conformity (of system constituents), and verification (of system compliance).

N.B. see Commission Regulation (EC) No 30/2009 below which amends this regulation so far as the requirements for automatic systems for the exchange of flight data supporting datalink services are concerned.

**Service Provision: Commission Regulation (EC) No. 1794/2006 Draft Commission Regulation laying down a common charging scheme for Air Navigation Services**

**Into force:** 01/01/07

**Scope:**

This regulation lays down the necessary measures for the development of a charging scheme for air navigation services which is consistent with the Eurocontrol Route Charges System and shall apply to air traffic service providers designated under Article 8 of the Service Provision Regulation (550/2004). Whereas the Eurocontrol system applies only to en route charges, the Charging Regulation extends to the provision of ANS at aerodromes as well. However, Member States can elect not to apply the Regulation to ANS provision at aerodromes with less than 50,000 commercial air transport (CAT) movements per year. For aerodromes with 50,000+, but less than 150,000 CAT movements (per year), Member States may elect not to apply Articles 11 (Calculation of Terminal Charges) and 13 (Setting of Unit Rates for Charging Zones) provided that the provision of air navigation services is assessed to be taking place in a contestable market. The regulation will apply in its entirety to the provision of ANS at airports with more than 150,000 CAT movements per year (i.e. Heathrow, Gatwick, Stansted and Manchester in UK). The Regulation also contains provisions on the establishment of charging zones, exemptions (automatic and discretionary), transparency, and incentives. This Regulation is in the process of being amended to support the new SES Performance Scheme implementing rule to introduce the principle of “determined cost” to replace automatic full cost recovery (see Annex C below).

**Interoperability: Commission Regulation (EC) No 633/2007 laying down requirements for the application of a flight message transfer protocol used for the purpose of notification, coordination and transfer of flights between air traffic control units**

**Into force:** 28 June 2007 except:-

It shall apply from 1 January 2009 to all EATMN systems referred to in Article 1(2) put into service after that date.

It shall apply from 20 April 2011 to all EATMN systems referred to in Article 1(2) in operation by that date.

**Scope:**

This regulation defines the peer to peer communication protocol – the FMTP – for the automatic system information exchanges between Air Traffic Control Units and for civil-military coordination.

**Interoperability: Commission Regulation (EC) No 1265/2007 laying down requirements on air-ground voice channel spacing for the single European sky [8.33 kHz]**

**Into force:** 16 November 2007

**Scope:**

Eurocontrol is mandated to develop a draft interoperability implementing rule for the deployment of air-ground voice communications based on reduced 8.33 kHz channel spacing. This implementing rule will also address civil military coordination.

**Service Provision: Commission Regulation (EC) No 1315/2007 on safety oversight in air traffic management and amending Regulation (EC) No 2096/2005**

**Into force:** 10 November 2007.

**Scope:**

This Regulation establishes a safety oversight function to be carried out by National Supervisory Authorities concerning air navigation services, air traffic flow management, and airspace management by adopting the provisions of ESARR1 (ATM safety oversight). UK succeeded in obtaining a risk-based approach.

**Service Provision: Commission Regulation (EC) No 482/2008 establishing a software safety assurance system to be implemented by air navigation service providers [ESARR6) and amending Annex II to Regulation (EC) No2096/2005 assurance system to be implemented by air navigation service providers**

**Into force:** 20 June 2008, except:-

- It shall apply from 1 January 2009 to the new software of EATMN systems referred to in Article 1(2), first subparagraph.
- It shall apply from 1 July 2010 to any changes to the software of EATMN systems referred to in Article 1(2), first subparagraph, in operation by that date.

**Scope:**

This Regulation (drafted by the Cion in conjunction with Eurocontrol's Safety Regulatory Unit (SRU)) lays down the requirements for the definition and implementation of a software safety assurance system by air traffic service (ATS) providers, communication, navigation and surveillance (CNS) providers as well as by entities providing air traffic flow management (ATFM) and airspace management (ASM). It identifies and adopts the mandatory provisions of the Eurocontrol Safety Regulatory Requirement on software in ATM systems (ESARR6).

The Regulation shall apply to the new software and to any changes to the software of the systems for ATS, ASM, ATFM and CNS. but shall not apply to the software of airborne constituents as well as space-based equipment.

Amends Annex II of the Common Requirements - Regulation (EC) 2096/2005 by following addition:

**"3.2.5 Section 5**

**Software safety assurance system**

Within the operation of the safety management system, a provider of air traffic services shall implement a software safety assurance system to be implemented by air navigation service providers and amends 2096/2005.

Article 4(1) in conjunction with Annex I allocates software assurance levels (from the Common Requirements) to all operational EATMN software. A minimum of four software assurance levels to be applied with Level 1 indicating the most critical level.

<p><b>Service Provision: Commission Regulation (EC) No 668/2008 amending Annexes II to V of Regulation (EC) No 2096/2005 laying down common requirements for the provision of air navigation services, as regards working methods and operating procedures</b></p> <p><b>Into force:</b> 5 August 2008</p> <p><b>Scope:</b></p> <p>This Regulation makes consequential amendments to the Common Requirements Regulation in lieu of amendments to the ICAO Annexes referenced therein.</p>
<p><b>Interoperability: Commission Regulation (EC) No 29/2009 laying down requirements on data link services for the single European sky</b></p> <p><b>Into force:</b> 6 February 2009</p> <p><b>Scope:</b></p> <p>This Regulation covers the provision and use of data link services supported by air-ground communications. This implementing rule will also address civil-military coordination.</p>
<p><b>Interoperability: Commission Regulation (EC) No 30/2009 of amending Regulation (EC) No 1032/2006 as far as the requirements for automatic systems for the exchange of flight data supporting data link services is concerned</b></p> <p><b>Into force:</b> 6 February 2009</p> <p><b>Scope:</b></p> <p>Amends Regulation (EC) 1032/2006 to include the exchange of flight data supporting data link services.</p>
<p><b>Interoperability: Commission Regulation (EC) No 262/2009 laying down requirements for the coordinated allocation and use of Mode S interrogator codes for the single European sky</b></p> <p><b>Into force:</b> 20 April 2009 except for Article 3 (Interoperability and performance requirements) which will enter into force on 1 January 2011.</p> <p><b>Scope:</b></p> <p>Lays down the regulatory provisions for the allocation and use of Mode S interrogator codes setting out the process and procedures to acquire and implement the codes, requirements for Mode S radar operators, requirements for the radars themselves, and implementation provisions. Mode S is a co-operative surveillance technique for air traffic control which enables the selective interrogation of aircraft and the extraction of air-derived data through which new air traffic management functionalities can be derived.</p>
<p><b>Interoperability: Commission Regulation (EU) No 73/2010 laying down requirements on the integrity of aeronautical data and aeronautical information for the single European sky</b></p> <p><b>Status:</b> Published in OJEU on 27 January 2010. Will enter into force 20 days thereafter (16 February 2010). It will apply as from 26 September 2011</p> <p><b>Scope</b></p> <p>The ADQ IR supplements and strengthens the requirements of ICAO Annex 15 in order to achieve aeronautical information of sufficient quality.</p>

## **Airspace: Commission Regulation (EU) No 255/2010 laying down common rules on air traffic flow management**

**Status:** Published in OJEU on 26 March will come into force 20 days thereafter (15 April 2010) It will apply as from 26 September 2011

### **Scope:**

This IR enhances air traffic flow management procedures and processes and optimises available capacity in the use of airspace, supports operational decisions by air navigation service providers, airport operators and airspace users, and covers flight planning, use of available airspace capacity during all phases of flight, and use of routeings by General Air Traffic (GAT). The agreed final version does not include a provision in an earlier draft regarding the coordination of airport slots (landing rights) and ATFM “slots”.

## SES I/II - IMPLEMENTING RULES UNDER DEVELOPMENT AS AT 26 MAY 2010

<b>Now SES II: Airspace Route and Sector Design</b>
<p><b>Status:</b> Likely to be new mandate to Eurocontrol in context of Network Management Function work arising out of SES II. Route Design Function IR expected to be in place end 2010 (see later under Annex C – NMF).</p> <p><b>Scope:</b></p> <p>Eurocontrol to develop draft implementing rules on the harmonisation of airspace design (upper and lower airspace to be taken into consideration separately) and on common principles and criteria for route and sector design. There is a difference of opinion between Eurocontrol and the Commission on route and sector design issues before the implementing rules can go before the SSC.</p>
<b>Framework Regulation: Draft Mandate to Eurocontrol on performance review</b>
<p><b>Status:</b> To be superseded by the European Commission generated Performance Review IR (voted on by Member States at the 35<sup>th</sup> Session of the Single Sky Committee on 7 May 2010)</p> <p><b>Scope:</b></p> <p>Eurocontrol to develop a draft implementing rule on the examination and evaluation of air navigation performance. This will identify key performance areas, associated key performance indicators, a relevant set of information to be provided on a mandatory basis, different parties and actors involved and their rights and obligations, and include measures for monitoring and dissemination. Eurocontrol is mandated to develop draft implementing rules which shall:</p> <p>Identify the key performance areas as well as the associated key performance indicators;</p> <p>Identify a relevant set of information to be provided on a mandatory basis which will cover the existing information as well as any other information required for performance review in the different key performance areas. This information shall cover both historical and forward looking information;</p> <p>Identify different parties and actors involved in the process of performance review and define their rights and obligations;</p> <p>Develop measures for the dissemination to interested parties of the relevant information as well as recommendations in term of performance in order to meet the objectives of Art 11(2) of the Framework regulation in an impartial way;</p> <p>Develop measures for the monitoring of actions related to performance as well as the dissemination of best practices.</p>
<b>Service Provision – Draft Mandate to Eurocontrol on the development of safety/risk classification scheme for the design of ATM</b>
<p><b>Status:</b> Development of this IR will now be undertaken under the auspices of EASA whose remit has been extended to include ATM, ANS and Aerodrome Safety by Regulation (EC) 1108/2009 (for further information on EASA timeframes see later under Annex D).</p> <p><b>Scope:</b></p>



<p>To develop an implementing rule based on Eurocontrol's ESARR 4 (risk assessment and mitigation in ATM) which was adopted into the SES legislation under the Common Requirements Regulation. The implementing rule will specify the requirements for risk assessment and mitigation with regard to a new system or to changes to an existing system, the risk classification scheme and common criteria for its use, implementation, and verification of compliance.</p>
<p><b>Interoperability: Draft Mandate to Eurocontrol on the development of an interoperability implementing rule on surveillance performance and interoperability requirements</b></p>
<p><b>Status:</b> under development – Final Report scheduled for May 2010.</p> <p><b>Scope:</b></p> <p>This draft implementing rule will specify the performance requirements of surveillance information in terms of accuracy, availability, continuity and integrity, the coverage and redundancy requirements, the ground and airborne interoperability requirements, surveillance spectrum protection requirements, and provisions on conformity assessment and implementation.</p>
<p><b>Interoperability: Mandate to Eurocontrol to assist the European Commission in the development of an interoperability implementing rule extending the scope of Aeronautical Data and Information Quality (ADQ).</b></p>
<p><b>Status:</b> under development – Member States approved the passing of this Mandate to Eurocontrol at the 34<sup>th</sup> Session of the Single Sky Committee (SSC) on 23/24 March 2010.</p> <p><b>Scope:</b></p> <p>This is the second mandate on ADQ, to develop implementing rules to complement the existing Commission Regulation No. 73/2010 (see Annex A above) which covers data from origination to publication of the aeronautical information by the Aeronautical Information Service (AIS) provider. The objective of this latest mandate is to extend the scope of this regulation to achieve aeronautical information of sufficient quality in the aeronautical data chain, from post-publication by the AIS to the end-user.</p>
<p><b>SES II: Airspace – Mandate to Eurocontrol for the development of implementing rules on Standardised European Rules of the Air (SERA)</b></p>
<p><b>Status:</b> under development – Final Report due 25 June 2010</p> <p><b>Scope:</b></p> <p>Eurocontrol is requested to support the European Commission and European Aviation Safety Agency (EASA) regulatory initiative to develop common and standardised European rules of the air (SERA), with a view to supporting implementation of Functional Airspace Blocks (FAB's), helping free movement of aircraft across Europe's borders, increasing safety and minimising the inconvenience and risk of misunderstandings caused by varying national sets of rules of the air.</p>

<b>SES II: Framework Regulation – Draft Regulation laying down a performance scheme for air navigation services and network functions</b>
Commission-generated draft – for further information on scope, timescales and status please see <b>Annex C</b>
<b>Service Provision regulation: Draft Regulation amending Commission Regulation (EC) No. 1794/2006 laying down a common charging scheme for Air Navigation Services</b>
Consequential amendment because of the introduction of the principle of “determined cost” to replace full-cost recovery – for more details see Annex C.

## SES II - FIRST PILLAR: (KEY THEMES) SES PERFORMANCE SCHEME AND NETWORK MANAGEMENT FUNCTION STATUS AS AT 26 MAY 2010

### PERFORMANCE SCHEME: NEW ARTICLE 11 OF SES FRAMEWORK REGULATION (AS AMENDED BY REGULATION (EC) 1070/2009)

#### **Status:**

EU Member States voted in support of the SES Performance Scheme IR at the 35<sup>th</sup> session of the Single Sky committee held on 7 May 2010. It will now undergo jurist linguist checks before publication in the OJEU (probably in the autumn). SSC35 and the 33<sup>rd</sup> Session of the Provisional Council (includes non-EU States) have agreed with the Commission's intention to designate Eurocontrol's Performance Review Commission as the Performance Review Body for the purposes of the SES Performance Scheme. Formal designation by the Commission will proceed shortly

#### **Scope:**

MS have the discretion to exempt airports with less than 50,000 CATMs pa. MS also have the discretion not to apply the cost-efficiency aspects of the scheme to airports with more than 50,000 CATMs pa where the provision of ANS is assessed to be in a broadly contestable market by satisfying the conditions of the "contestability test" set out in Annex 1 of the Charging Regulation

#### **Content of IR**

Principal provisions cover:

- roles of the Performance Review Board, the NSAs and the European Aviation Safety Agency
- key performance areas and performance indicators, the latter to be based on existing indicators of sufficient maturity to produce meaningful results
- the content of national performance plans
- incentive schemes
- process and criteria for assessing local targets against Community ones
- monitoring and evaluation
- additional data collection to develop performance indicators for subsequent Reporting Periods

#### SES Performance Scheme timelines

Q2 2010 - PRB formally designated by European Commission (will be Eurocontrol PRC)  
 Q3 2010 - Performance Scheme IR in force  
 Q4 2010 - EU-wide targets set  
 Q2 2011 - National Performance Plans in place  
 Q3/4 2011 - PRB approves NPPs or returns them for correction and further submission  
 January 1<sup>st</sup> 2012 – December 31<sup>st</sup> 2014 - 1<sup>st</sup> Reference Period

#### **High-level principles of SES Performance Scheme:**

The high-level principles for the SES Performance Scheme are set out in Article 11 (Performance Scheme) as amended by Regulation 1070/2009 which came into force on 4 December 2009.

Article 11 introduces a two-tier system of performance regulation through the setting of targets.

- Community-wide targets will be defined in the key performance areas (KPAs) of safety, the environment, capacity and cost-efficiency. These will then be passed to National Supervisory Authorities (NSAs).
- The NSAs must draw up, after proper consultation with stakeholders (notably airspace users),

national and/or regional plans (at the level of FABs) including performance targets which must be consistent with Community targets and which will be binding. The plans must also incorporate an appropriate incentive scheme.

If the Commission decides that one or more national or regional targets does not match the assessment criteria to be set, the Commission can seek revised targets from the Member State(s) concerned. If the revised targets are not adequate the Commission may require the Member State(s) concerned to take corrective measures. Alternatively, there may be instances where the Community target needs to be revised.

Article 11 also empowers the Commission to designate Eurocontrol or another impartial and competent body to act as an independent performance review body (PRB) whose role will be to assist the Commission in the performance regulation function.

There will be periodic review, monitoring and benchmarking of the performance of air navigation services and network functions. Reference periods shall cover a minimum of three years and a maximum of five years with the first period set at three years (this will be 2012-2014).

### **Consequential amendment to common charging scheme**

In respect of the cost-efficiency aspect of the Performance Scheme, a consequential amendment is required to be made to the SES common charging regulation (Regulation (EC) No. 1794/2006) to introduce the principle of predetermined cost to replace the current system based on full-cost recovery. A draft IR implementation rule amending the charging regulation is currently under discussion by Member States and will be agreed in Q2 of 2010 and will need to come into force at the same time as the performance scheme IR.

## **NETWORK MANAGEMENT FUNCTION (NMF): NEW ARTICLE 6 OF SES AIRSPACE REGULATION (AS AMENDED BY REGULATION (EC) 1070/2009)**

### **Status:**

#### NMF timelines

End 2010: Regulation on development of route design function;  
Regulation on development of frequency co-ordination plans;  
Regulation on development of transponder code management function;  
Designation of the Network Manager;

2011 NMF-related FUA procedures.

### **SES Network Management Function:**

New Article 6 of the SES Airspace Regulation, as amended by Regulation (EC) 1070/2009 which came into force on 4 December 2009, sets out the principles of the network management function proposed for the SES. From Article 6.1 the ATM network functions "...shall allow optimum use of airspace and ensure that airspace users can operate preferred trajectories, while allowing maximum access to airspace and air navigation services. These network functions shall be aimed at supporting initiatives at national level and at the level of functional airspace blocks .....". Towards this end the following shall be carried out:

- (a) Improvements to the overall efficiency in the design and management of routes
- (b) Coordination of "scarce resources" within aviation frequency bands used by general air traffic, in particular radio frequencies as well as coordination of transponder codes.

The functions in (a) "shall not involve the adoption of binding measures of a general scope or the exercise of discretion. They shall take into account proposals established at national level and at the level of functional airspace blocks. They shall be performed in coordination with military authorities in accordance with agreed procedures concerning the flexible use of airspace".

Detailed IRs will be adopted with regard to:

- Measures to enhance the efficiency of aeronautical frequency management;
- early identification and resolution of frequency needs to support the design and operation of the European aviation network;
- additional network functions as designed in the ATM Master Plan (product of SESAR Definition Phase – see Annex E below);
- detailed arrangements for cooperative decision-making by Member States;
- arrangements for the consultation of the relevant stakeholders in the decision-making process both at national and international level;
- Division of tasks and responsibilities between the network management function and national frequency managers.

#### Responsibility for NMF

Article 6(8) of Airspace Regulation states that “Member States shall entrust Eurocontrol or another impartial and competent body with the performance of ATFM subject to appropriate oversight arrangements”.

## SES II SECOND PILLAR: A SINGLE EUROPEAN AVIATION SAFETY REGULATOR STATUS AS AT 26 MAY 2010

### EASA – The European Aviation Safety Agency

#### **Status:**

Regulation 1108/2009 came into force on 14 December 2009,

Following discussions in the EASA Management Board (comprising representatives of Member States and the Commission) and the EASA Committee and written liaison with the Single Sky Committee, the Agency has determined priorities for rulemaking with respect to the two extensions to its responsibilities:-

Rules from first extension (under Reg. (EC) 216/2008) will focus on flight crew licensing and air operations by 2012;

Rules from second extension (under Regulation (EC) 1108/2009) will fast-track ATM/ANS services by end 2010 (rather than the deadline of 2012 stipulated in the legislation) with a deadline for aerodromes of 2013.

#### **Legislative background:**

EASA was established in 2003 under **Regulation EC 1592/2002**, which gave it responsibility for the airworthiness of aircraft. EASA's responsibilities were extended to include air operations, flight crew licensing and the oversight of third-country aircraft in 2008 under **Regulation EC 216/2008**. **Regulation (EC) 1108/2009** further extended EASA's responsibilities to include aerodromes, ATM and ANS safety making it the single European aviation safety regulator.



## SES II THIRD PILLAR: THE INTRODUCTION OF NEW TECHNOLOGIES - SESAR STATUS AS AT 26 MAY 2010

### SESAR – the European ATM modernisation programme

#### Status:

In early stages of Development Phase (principally involving the implementation of the Master Plan overseen by the S-JU). The Development Phase is sub-divided into three implementation phases (IP1, IP2 and IP3):

#### IP1:

- involves 80 “operational improvements” (OI’s) – existing projects delivering benefits have been absorbed into SESAR
- IP1 related IRs to be mandated have been prioritised with a first cluster of 3 IRs to enable network operations and a second cluster of 4 IRs to prepare the framework for future deployments (eg. SWIM, CNS performance)
- Meeting held on IP1 Governance on 20 January 2009 involving the Commission, the SESAR JU, Eurocontrol, ICB representation and SSC Members (civil and military). The SSC agreed to the setting up an IP1 Deployment Steering Group which met for the first time on 27 April 2010.

#### ATM Master Plan

- 1<sup>st</sup> Revision of ATM Master Plan due in 2010

#### SESAR Deployment Phase funding and governance proposal

- Commission Communication in 2010 on proposal for funding and governance of SESAR Deployment Phase – expected to be appended legislative proposal

#### Background:

Whilst institutional measures and common standards are essential to the transformation of the European ATM System into a more uniform one, the real gains in system efficiency come when capacity-enhancing new technologies can be introduced operationally. Prompted by industry, all aviation stakeholders and the Cion have come to recognise that a more coordinated approach to R&D and a clear vision of a future generation ATM system and its components and requirements is needed in order to accelerate the development of an integrated ATM system based on state of the art technologies that will keep pace with the current rate of traffic growth. The SESAR programme aims to bring this vision, and to bring programme management discipline to the definition and development of future ATM concepts and technologies. The SESAR project is divided into three phases.

*Definition Phase:* development of the ATM Master Plan (Feb 2006-March 2008)  
*Development Phase:* execution of the ATM Master Plan by the SESAR JU (2009 to 2014)  
*Deployment Phase:* 2014+ (nominally to 2020)

The SESAR Joint Undertaking was set up by Council Regulation (EC) No 219/2007 as the governance structure for the Development Phase. Patrick Ky was elected as the Executive Director of the S- JU Administrative Board on 12 October 2007. Amending Regulation (EC) No. 1361/2008 came into force on 1 January 2009 redefining the legal status of the JU as a “Community Body” in line with more recently established Joint Undertakings relating to large Community Research and Development projects. This will entitle the SJU to the considerable tax benefits accruing to such bodies.

SESAR Master Plan formally endorsed by Member States as the European ATM Master Plan at the March 2009 Transport Council. This paved the way for the S-JU to sign formal agreements

with the 15 private industry partners who had lodged “expressions of interest” in joining (including NATS and an airports consortium involving BAA) on 12 June 2009 formally launching the Development Phase. The S-JU also concluded an agreement with Eurocontrol, the other founding member.

Member State involvement in SESAR is via the Single Sky Committee (SSC), and Community positions reached at the SSC are put forward by the Commission at the S-JU Administrative Board.

## **SESAR alignment with FAA’s NextGen Programme**

### **Status of MoC negotiations**

Three EU/FAA negotiation meetings have been held to date (18 December 2009 and 2 March and 29 April 2010) and a further meeting is scheduled for June. It is still thought possible to conclude the MoC within the term of the Spanish Presidency of the EU which ends on 30 June 2010.

### **Background and scope:**

NextGen is the Federal Aviation Administration’s programme to modernise the US ATM system.

The European Commission concluded a Memorandum of Understanding with the FAA on 18 July 2006 fairly early on in the SESAR Definition Phase and this was updated on 17 March 2009.

At the October 2009 Transport Council Member States agreed to grant a mandate to the European Commission to negotiate a Memorandum of Cooperation (MoC) in Civil Aviation Research and Development with the US Federal Aviation Administration (FAA). This followed a direction from the Council in its Resolution on “Endorsement of the European Air Traffic Management Master Plan”.

The mandate is aimed initially at cooperation on SESAR and NextGen, particularly in terms of achieving interoperability between the two systems both of which involve significant technological programmes affecting airlines operating globally. However, it envisages the expansion of the scope of the MoC to include other Civil Aviation R&D related issues in order to pursue common objectives such as the reduction of the environmental impact of civil aviation.

The Commission will be assisted in the negotiations by a Special Committee of representatives from the Member States.

## SES II FOURTH PILLAR: MANAGING CAPACITY ON THE GROUND STATUS AS AT 26 MAY 2010

### The Airport Observatory

#### Status:

The UK continues to participate constructively in the Observatory, including its three working groups, but has ongoing concerns - shared by other Member States - that the Commission has not yet produced a clear and focused work programme. The next plenary meeting is expected in September 2010. The Commission's work plan for 2010/11 includes a Communication on Airport Policy to report on Capacity Action Plan (SESII) and discuss state of play on airport capacity. We have no further information at this stage, but assume it will also refer to the Observatory's work

#### Update on working groups:

- WG1 (airport capacity): questionnaire tested with sample of airports (UK: Birmingham, Heathrow, Southampton) and feedback submitted to Cion by March deadline – no WG meetings this year and no update from Cion on next steps.
- WG2 (gate-to-gate): three areas of work (i) slots regulation - Cion conducting impact study July to Sept; (ii) inventory of existing local rules to report in June; (iii) interaction between airport slots and SES e.g. links between flight plans and slots. DfT attended meeting on 18 May; next meeting on 24 June.
- WG3 (intermodality / local impacts): DfT attended meeting in Frankfurt (March) - discussed role of Frankfurt as a hub airport, surface access and environmental impacts. Next meeting on 10 June in Paris will focus on QLAIIR project (local impacts of airports).

#### Scope:

The Airport Observatory is part of the SES II strand of work on airport capacity issues. Its participants include Member States, industry representatives (e.g. the Airports Council International - Europe, the International Air Transport Association and other interested parties (e.g. EUROCONTROL and the Airports Regional Conference). CANSO (the Civil Air Navigation Services Organisation) has also joined the Observatory. The Observatory has been established to enable relevant parties to exchange and monitor data and information on airport capacity as a whole. It will also offer advice on network management tasks in the context of the SES (although no work has begun on this).

SES II FIFTH PILLAR: HUMAN FACTORS  
STATUS AS AT 26 MAY 2010

<b>Human Factors</b>
<b>Status:</b>
<b>Scope:</b>