The European Commission issued mandates to EUROCONTROL for the development of implementing rules pursuant to Article 8(1) of the single European sky (SES) framework Regulation.

EUROCONTROL has developed a series of draft implementing rules (IRs) under its Regulatory and Advisory Framework (ERAF) using the EUROCONTROL Notice of Proposed Rule-Making (ENPRM) regulatory process. This rigorous process is a mechanism by which widespread stakeholder consultation is ensured allowing all interested parties, including the public to comment on regulatory provisions before they become binding.

Those draft implementing rules have been reviewed and adopted by the European Commission as EU regulations; completing the general framework of the single European sky.

For further detailed information on the draft implementing rules developed by EUROCONTROL (including stakeholder consultation material), please contact us at standardisation@eurocontrol.int

## Aeronautical Data and Information Quality (ADQ) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on Aeronautical Data Integrity (ADI). The mandate title was later modified to Aeronautical Data Quality (ADQ) in order to more properly reflect the nature of its content to refer to data and information quality rather than just to data integrity.

In terms of scope, the aeronautical information data process chain extends from the original data sources (e.g. surveyors, procedure designers, etc) through Aeronautical Information Services (AIS) and publication to the end users of the data for aeronautical applications. The purpose of the draft implementing rule was to supplement and strengthen the relevant existing requirements of ICAO Annex 15.

The Commission of the European Union has adopted Regulation (EC) No 73/2010 of 26 January 2010 laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky.

The final report delivered to the European Commission on 22nd October 2007 identified 11 means of compliance. Subsequent discussions within the Industry Consultation Body (ICB) have reduced this to 5 means of compliance developed by EUROCONTROL in the form of EUROCONTROL Specifications. Namely, electronic AIP (eAIP), data quality requirements (DQR), data assurance levels (DAL), data origination (DO) and aeronautical information exchange (AIX) specifications.

Furthermore, EUROCONTROL provides support to regulated parties through the ADQ Implementation Support Cell.

## Aeronautical Data and Aeronautical Information Quality (ADQ-2) mandate

A mandate issued to EUROCONTROL in 2005, resulted in the implementing rule on ADQ referred to in Part 2. For practical reasons, it was decided to restrict the scope of this rule to cover from data origination to publication of the aeronautical information by the AIS provider. It was, however, accepted throughout the development of this mandate that the full data supply chain would have to be addressed if end-to-end data quality was to be achieved.

In order to provide the data quality values required to meet specific applications such as Performance Based Navigation (PBN), there is a need to define the performance requirements for how data should be originated, published, transferred, processed, integrated and supplied throughout the whole aeronautical data chain.

On the request of the EU this mandate has been discontinued. The subject has been addressed through an EASA rulemaking task (RMT.0593/0594).

## Co-ordination and Transfer (COTR) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on co-ordination and transfer (COTR) between Air Traffic Service Units.

This implementing rule addresses the system information exchange between Air Traffic Service Units in the process of notification, co-ordination and transfer of flights and also civil-military coordination.

The Commission of the European Union has adopted Regulation (EC) No 1032/2006 of 6 July 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. The implementing rule was amended 6th February 2009 by EU Regulation No 30/2009 to take into account the data link service implementing rule (Regulation (EC) No 29/2009).

The EUROCONTROL Specification for the On-Line Data Interchange (OLDI) has been recognized as Community specifications describing a message set for the COTR IR.

EUROCONTROL has also developed the associated Flight Message Transfer Protocol (FMTP) implementing rule to provide communications support for COTR exchanges (Regulation (EC) No 633/2007).

The Data Link Services (DLS) implementing rule relies on COTR exchanges (Regulation (EC) No 30/2009).

# Data Link Services (DLS) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on the provision and use of data link services supported by air-ground communications.

This implementing rule also addresses civil military coordination.

The Commission of the European Union has adopted Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the single European sky.

The Data Link Services (DLS) implementing rule targets airspace users operating above Flight Level 285 and Air Navigation Service Providers operating in the EU region. The baseline technology is ATN/VDL Mode 2, but other technology may be acceptable subject to demonstrated compliance to standards, capability of exchanging data with Air Traffic Services and formal regulatory acceptability of the solution proposed.

In terms of means of compliance EUROCONTROL has published a specification on data link services addressing air and ground elements of the DLS implementing rule.

This specification has been used to develop a Community specification for the DLS ground elements:

ETSI EN 303 214 V1.2.1 Data Link Services (DLS) System; Community Specification for application under the Single European Sky Interoperability Regulation EC 552/2004; Requirements for ground constituents and system testing.

EUROCONTROL has supported the European Aviation Safety Agency (EASA) in preparing the ATN-B1 datalink section of the Airborne Communications, Navigation and Surveillance Certification Specification which has been published in December 2013. The Certification Specification includes acceptable means of compliance and guidance material for demonstrating compliance with Commission Regulation (EC) No 29/2009 and supersedes the prior Special Condition and associated Certification Review Item.

# Flight Message Transfer Protocol (FMTP) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on communication services to support flight message transfer protocol (FMTP) between Air Traffic Service Units. This implementing rule also addresses civil-military coordination.

In order to achieve the interoperability between air traffic service units, there is a need to define the message transfer protocol to support On-Line Data Interchange (OLDI) using the internet protocol (IP).

The Commission of the European Union has adopted Regulation (EC) No 633/2007 of 7 June 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. The implementing rule was amended in March 2011 by Regulation (EU) No 283/2011.

The EUROCONTROL Specification for the flight message transfer protocol (FMTP) has been recognized as Community specifications. EUROCONTROL has also made available the EUROCONTROL Inter Centre (ETIC) test tool, FMTP test plans and other guidance material.

## Flexible Use of Airspace (FUA) mandate

The Article 7 of the Single European Sky Airspace Regulation calls upon Member States to ensure the uniform application of the concept of the flexible use of airspace as described by ICAO and as developed by EUROCONTROL. EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on the flexible use of airspace.
The Commission of the European Union has adopted Regulation (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace.

The FUA Concept allows the maximum joint use of airspace by appropriate civil/military co-ordination to achieve the required separation between civil and military flights, hence reducing airspace segregation needs.

The EUROCONTROL Specification for the flexible use of airspace (FUA) has been recognised as Community specifications and supports the implementation of FUA.

EUROCONTROL has developed the Local And sub-Regional Airspace Management support system (LARA). The LARA team manages the development of the LARA software which is made available to EUROCONTROL stakeholders to implement FUA.

## Initial Flight Plan (IFPL) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on the initial flight plan. The purpose of this implementing rule was to ensure that the key elements of a flight plan are common to all actors for the pre-flight phase and their updates.

The Commission of the European Union has adopted Regulation (EC) No 1033/2006 of 4 July 2006 laying down the requirements on procedures for flight plans in the pre-flight phase for the single European sky.

The implementing rule was amended 8th May 2013 by Regulation (EU) No 428/2013 to take into account the latest ICAO provisions relating to the global Flight Plan 2012 initiative.

The EUROCONTROL Specification for the initial flight plan (IFPL) has been recognised as Community specifications and supports the implementation of the IFPL implementing rule.

EUROCONTROL also supports the implementation of the rule as follows:

- Publication of the IFPS user manual as an EUROCONTROL specification, in an electronic downloadable format in the public domain,
- Provision of formalised web-based IFPS training modules for personnel involved in flight planning,
- Analyses of flight planning behaviours,
- Access to NM Interactive reporting system for airspace users, air traffic service providers and regulatory authorities,
- Post and pre-operational off-line support function for helping flight planners to comply with the regulatory requirements,
- Provision of flight plan validation and routing assistance facilities,
- Access to a flight plan data repository.

## Mode S Interrogator Code Allocation (MSI) Mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on the allocation and use of Mode S interrogator codes.

The Commission of the European Union has adopted Regulation (EC) No 262/2009 of 30 March 2009 laying down requirements for the coordinated allocation and use of Mode S interrogator codes for the single European sky.

This regulation applies to civil and military operators of Mode S interrogators.

Regulation (EC) No 262/2009 of 30 March 2009 defines eligible Mode S interrogators that must request a coordinated interrogator code (IC) from the Mode S Interrogator Code Allocation Service.

EUROCONTROL manages and maintains the Mode S IC Allocation coordination procedure in accordance with the rule and in close co-ordination with the European Regional Office of ICAO.

On that basis, EUROCONTROL provides the Mode S IC Allocation international coordination service to European Region States including, but not limited to, European Union Member States.

The service provision includes:

- Operation of the Mode S IC Allocation (MICA) Cell, responsible for the maintenance of the Mode S IC Allocation Plan;
- Chairmanship and secretariat support to the Mode S IC Coordination Group (MICoG), which oversees the work of and provide guidance to the MICA Cell;

- Coordination with the European Regional Office of ICAO.
- MICA webpage

The EUROCONTROL Specification for Mode S IC Allocation (MICA) supports the implementation of the MICA implementing rule.

## Performance Based Navigation (PBN) mandate

EUROCONTROL has been mandated to develop a draft interoperability implementing rule on Performance Based Navigation (PBN) that will define navigation requirements and identify the functionalities required in en-route and terminal airspace, including arrival and departure, and also approach.

Following the completion of Phase I – Regulatory Approach - on the request of the European Commission the mandate was discontinued and the work on the drafting of the implementing rule was transferred to EASA. The subject has been addressed through EASA rulemaking task RMT.0639, on the basis of the Regulatory Approach Document produced by EUROCONTROL during Phase I of the mandate. The resulting EASA Opinion can be accessed here .

## Risk Classification Scheme (RCS) mandate

EUROCONTROL has been requested to support the European Commission (EC) in developing appropriate regulatory material for a Risk Classification Scheme (RCS) for the design of the Air Traffic Management (ATM) functional system.

EC Regulation 2096/2005 (the Common Requirements) contains a severity classification for the identification of the effects of ATM/CNS related hazards on the safety of aircraft, but without quantitative rates being applied.  At the same time, EUROCONTROL Safety Regulatory Requirement 4 Risk Assessment and Mitigation in ATM (ESARR 4) contains a risk classification scheme with a maximum tolerable rate for severity class 1, but the maximum tolerable rate for the severity classes 2 to 5 have still to be developed. There is therefore a need to converge towards harmonised requirements in regulatory material addressing the development of an RCS for ATM.

Despite the extensive consultation undertaken, the Single Sky Committee (meeting held 2nd April 2009) noted the standstill on the development of an implementing rule on a risk classification scheme. The Commission of the European Union decided to re-assess the objective of this mandate in the context of SES II package.

Regulation (EC) No 2096/2005 identifies and adopts the mandatory provisions of ESARR 4 on risk assessment and mitigation in ATM which is relevant for the certification of air navigation service provider. The Regulation mandates Air Navigation Service Providers (ANSPs) to conduct risk assessment and mitigation to an appropriate level in order to ensure the highest possible level of safety of services provided. ANSPs should develop safety objectives related to the design of the ATM functional system. The development of safety objectives and the apportionment

process at ANSPs' levels should be consistent with the European RCS apportioned at State's level and under the supervision of the National Supervisory Authorities (NSAs). When required by specific implementing rules, other organisations should have similar approach.

EUROCAE ED-125 proposes a generic methodology for apportionment at unit Tower (TWR), Area Control Centre (ACC), Approach Control (APP) level and for different complexities of airspaces. ED125 applies more specifically to the organisation level in order to define the safety objectives of a change. Several other types of apportionment can be taken into consideration (e.g. Breakdown by Accident Types).

## Standardised European Rules of the Air (SERA) mandate - Part A

EUROCONTROL has been mandated by the European Commission to develop, in close co-operation with EASA, common and standardised European rules of the air, 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.

In terms of scope, the mandate was based on the SES Regulatory Framework and some provisions of EASA Basic Regulation. It encompassed ICAO Annex 2 "Rules of the Air" and other ICAO Standards and relevant practices (SARPs) and Procedures for Air Navigation Services (PANS). The implementing rule did not create new obligations but rather transpose already existing obligations, and standardises the way the existing ICAO obligations are implemented within the single European sky.

Upon analysis SERA was developed in successive phases, the first covering the transposition of ICAO Annex 2, "Rules of the Air", named SERA Part A.

The following phases consisted of SERA Parts B and C, transposing the ICAO Annex 11 provisions and possible other ICAO provisions as appropriate, and when considered necessary, the relevant set of common EU differences to ICAO provisions.

At its 40th session, the Single Sky Committee agreed that a formal opinion on this Part A would be sought together with the vote on Part B.

Following the delivery of the final report to the European Commission, the Single Sky Committee organized a written consultation on SERA at its 38th session. To support the implementation of SERA, the dedicated SSC Working Group on SERA also identified which provisions should be better captured by Acceptable Means of Compliance (AMC) or Guidance Material (GM).

EUROCONTROL does not provide any generic support to the implementation of SERA.

## Standardised European Rules of the Air (SERA) mandate - Part B

EUROCONTROL has been mandated by the European Commission to develop, in close co-operation with EASA, common and standardised European rules of the air, 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.

Several successive phases had been identified to develop SERA. A first phase, termed "Part A", focused on the European transposition of the provisions of ICAO Annex 2. The second phase ("Part B") focused on transposition of ICAO Annex 11. It was followed by the relevant supplement containing the European common differences if applicable.

Following the first phase, the EC has updated the mandate on SERA.

During it's 45th session the Single Sky Committee voted a positive opinion on the proposed draft regulation on SERA which combined the contents of Parts A and B.

EUROCONTROL does not provide any generic support to the implementation of SERA.

## SES mandate on Standardised European Rules of the Air (SERA) – Part C

EUROCONTROL has been mandated by the European Commission to develop, in close co-operation with EASA, common and standardised European rules of the air, 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.

Several successive phases had been identified to develop SERA. A first phase, termed "Part A", focused on the European transposition of the provisions of ICAO Annex 2. A second phase ("Part B") focused on transposition of ICAO Annex 11. During it's 45th session the Single Sky Committee voted a positive opinion on the proposed draft regulation on SERA which combined the contents of Parts A and B.

In order to fulfil the mandate requirements, a third phase termed "Part C" was to consider which provisions from ICAO PANS-ATM and other related sources (like Doc 7030 and Annex 10 Vol II) would be eligible to efficiently complement the adopted SERA regulation (A and B) and to transpose these provisions into draft additional requirements to be included in SERA.

SERA Parts A and B were adopted by the European Commission through the publication of Commission Implementing Regulation (EU) No 923/2012 laying down the common rules of the air and operational provisions regarding services and

procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (SERA IR).

In accordance with the requirements of the amended SERA mandate, the formal consultation was conducted via the consultation process of the European Aviation Safety Agency (EASA). The Notice of Proposed Amendment was held between 18th February and 19th May 2014 and has been published on the EASA website (NPA 2014-05). The EASA Opinion has been published on 16 December 2014 (Opinion 04/2014) together with the Comment Response Document (CRD 2014-05).

On 15 September 2015, EASA has published a Notice of Proposed Amendments (NPA 2015-14) on Acceptable Means of Compliance (AMC) and Guidance Material (GM) to SERA Part C which was closed for comments on 14 March 2016.

Received comments and EASA responses were presented in the Comment Response Document (CRD 2015-14).

This rulemaking activity lead to the publication of Decision 2016/023/R and Commission Implementing Regulation (EU) 2016/1185 of 20 July 2016 amending Implementing Regulation (EU) No 923/2012 as regards the update and completion of the common rules of the air and operational provisions regarding services and procedures in air navigation (SERA Part C) and repealing Regulation (EC) No 730/2006

## Surveillance Performance and Interoperability requirements (SPI) Mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on surveillance performance and interoperability requirements (SPI).

During the preparation of the draft implementing rule on SPI, it was decided with the agreement of the European Commission, to enlarge the scope of the regulatory approach so as to address the issue of the use of aircraft identification (ACID). In response to this decision and in parallel with the update of SPI taking into account the results of the formal consultation, a draft implementing rule on ACID has also been developed.

The Commission of the European Union has adopted Regulation (EU) No 1206/2011 of 22 November 2011 laying down requirements on aircraft identification for surveillance for the single European sky and Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky.

EUROCONTROL proposed actions to support the implementation of the SPI Regulation were organised into five main streams of activity, for the different stakeholders involved in its implementation:

- Support to the European Commission (EC) and to the EASA;
- Support to Air Navigation Service Providers;
- Support to Member States / National Supervisory Authorities;
- Support to Aircraft Operators;
- Support to industry.

The support included, but was not limited to, adaptation of existing EUROCONTROL documents or development new of Means of Compliance with the regulatory provisions, development of appropriate guidelines, management of exemption cells with regard the carriage requirements as well as monitoring of the airborne equipage.

EUROCONTROL also launched an informal consultation between and 14th October 2011 on the priorities of the tasks needed to support Air Navigation Service Providers (ANSP's) and National Supervisory Authorities (NSA's) for implementing SPI IR including the prioritization of Means of Compliance (MoC).

EUROCONTROL has supported the European Aviation Safety Agency (EASA) in preparing the Airborne Communications, Navigation and Surveillance Certification Specification that has been published in December 2013. The Certification specification includes acceptable means of compliance and guidance material for Mode A/C, Mode S Elementary, Mode S Enhanced Surveillance, and ADS-B Out 1090 MHz Extended Squitter demonstrating compliance with Commission Regulation (EU) No 1206/2011 and Commission Regulation (EU) No 1207/2011.

For further details, please refer to the Aircraft Equipage Requirements in the European Commission IRs 1207/2011 and 1028/2014.

## Air-Ground Voice Channel Spacing (VCS) mandate

EUROCONTROL has been mandated by the European Commission to develop a draft implementing rule for interoperability on Air-Ground Voice Channel Spacing (VCS).

In order to address VHF congestion in core area Member States and in view of the present non-availability of new alternative systems, there was a need to define the requirements for air-ground voice channel spacing, including the deployment of reduced 8.33 kHz channel spacing.

The Commission of the European Union has adopted Regulation (EC) No 1265/2007 of 26 October 2007 laying down requirements on air-ground voice channel spacing for the single European sky.

As the scope of VCS is applicable to the airspace above flight level 195, the extension of 8.33 kHz air-ground voice channels spacing below flight level 195 was subject of a second regulatory activity which has resulted in the publication of Regulation (EU) 1079/2012.

No EUROCONTROL Specifications nor Community specifications have been prepared to support the deployment of VCS.

EUROCONTROL facilitated the 8.33kHz Programme Steering Group.

EUROCONTROL has also supported the European Aviation Safety Agency (EASA) in preparing the Airborne Communications, Navigation and Surveillance Certification Specification that has been published in December 2013. The Certification specification includes acceptable means of compliance and guidance material for voice channel spacing by incorporating JAA TGL (8.33 kHz) and demonstrating compliance with Commission Regulation (EU) No 1079/2012.

- Airborne Communications, Navigation and Surveillance (ACNS)

The following technical standards are relevant to the VCS regulations.

- EUROCAE ED 23B –Minimum Operational Performance Specification for Airborne VHF Receiver-Transmitter operating in the frequency range 117,975 – 137,000 MHZ, Document ED-23B, Amendment 3, December 1997 (superseded by ED 23C)

- EUROCAE ED 23C - Minimum Operational Performance Specification for Airborne VHF Receiver-Transmitter operating in the frequency range 117,975 – 137,000 MHZ, Document ED-23C, June 2009

- ETSI EN 300 676-1 V1.4.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Ground-based VHF hand-held, mobile and fixed radio transmitters, receivers and transceivers for the VHF aeronautical mobile service using amplitude modulation

## Voice Channel Spacing (VCS-2) mandate

Regulation (EC) 1265/2007 laying down requirements on Air-ground Voice Channel Spacing for the single European sky has been successfully implemented through the deployment of 8.33 kHz communications in the airspace above Flight Level 195.

As mentioned in its preamble, this Regulation was considered only as a first step, to be expanded in due time by a second phase, to address the entire airspace and in order to respond to the further demand for additional VHF requirements.

The objective of this draft regulation was to update Regulation (EC) 1265/2007 so as to enlarge its applicability to the airspace below Flight Level 195.

No EUROCONTROL Specifications nor Community specifications have been prepared to support the deployment of VCS II.

EUROCONTROL facilitated the 8.33kHz Programme Steering Group.

EUROCONTROL has also supported the European Aviation Safety Agency (EASA) in preparing the Airborne Communications, Navigation and Surveillance Certification Specification that has been published in December 2013. The Certification specification includes acceptable means of compliance and guidance material for voice channel spacing by incorporating JAA TGL (8.33 kHz) and demonstrating compliance with Commission Regulation (EU) No 1079/2012.

- Airborne Communications, Navigation and Surveillance (ACNS)

The following technical standards are relevant to the VCS regulation.

- EUROCAE ED 23B –Minimum Operational Performance Specification for Airborne VHF Receiver-Transmitter operating in the frequency range 117,975 – 137,000 MHZ, Document ED-23B, Amendment 3, December 1997 (superseded by ED 23C)
- EUROCAE ED 23C - Minimum Operational Performance Specification for Airborne VHF Receiver-Transmitter operating in the frequency range 117,975 – 137,000 MHZ, Document ED-23C, June 2009
- ETSI EN 300 676-1 V1.4.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Ground-based VHF hand-held, mobile and fixed radio transmitters, receivers and transceivers for the VHF aeronautical mobile service using amplitude modulation

## Other Mandates

EUROCONTROL has developed various implementing rules and technical specifications that complete the general framework of the single European sky (SES).

These implementing rules and technical specifications are based on mandates that EUROCONTROL received from the European Commission.

The mandates listed here have been given to EUROCONTROL:

### Regulatory mandates
Airspace Design, including Airspace Classification
Air Traffic Flow Management (ATFM)
Common Charging Scheme
Performance Review

### Non-regulatory mandates
European Upper Flight Information Region (EUIR)
Establishment of Functional Airspace Blocks (FABs)
Single Aeronautical Information Publication (SAIP) for EUIR