



NOTICE OF PROPOSED AMENDMENT (NPA) No 2011-02

DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY

for a Commission Regulation laying down requirements regarding services in air navigation and amending Commission Regulation (EU) No XXX/2011 laying down common rules of the air and operational provisions regarding services and procedures in air navigation and amending Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010

***'Standardised European Rules of the Air (SERA) Part B'
'Requirements regarding Services in Air Navigation'***

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A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending Commission Regulation (EU) No XXX/2011¹ laying common rules of the air and operational provisions regarding services and procedures in air navigation and amending Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (hereinafter referred to as the 'SERA Implementing Rule'). The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) ATM.001 and is further specified in the European Commission's mandate to EUROCONTROL on Standardised European Rules of the Air² and its amendment to it by the letter MOVE E2/JP/sr sent to EUROCONTROL on 15/10/2010 (hereinafter referred to as the 'SERA Mandate') and is described in more details below.
2. The European Aviation Safety Agency (hereinafter referred to as the 'Agency') is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation³ which are adopted as 'Opinions' (Article 19(1)). It also adopts Certification Specifications, including Airworthiness Codes and Acceptable Means of Compliance and Guidance Material to be used in the certification process (Article 19(2)).
3. When developing rules, the Agency is bound to follow a structured process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as 'The Rulemaking Procedure'⁴.
4. This rulemaking activity is included in the Agency's Rulemaking Programme for 2011–2014⁵. It implements the rulemaking task ATM.001 'Extension of the EASA system to safety regulation of Air Traffic Management (ATM) and Air Navigation Services (ANS) — development of Implementing Rules (ATM.001(a)) and Acceptable Means of Compliance, Guidance Material and Certification Specifications (ATM.001(b)) on requirements for Air Navigation Service Providers'⁶. It also complements the efforts of the European Commission to establish a common set of rules of the air under the Single European Sky (SES) umbrella.
5. The text of this NPA has been developed by the Agency which was supported by the relevant group of experts as explained in Chapter III. It is submitted for consultation of all interested parties in accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.
6. As requested by the SERA Mandate and as further explained in the EUROCONTROL's Initial Plan on the European Commission's Mandate for support on the development of Standardised

¹ The exact number of this Regulation is not available as this regulation has not been adopted yet by the European Commission through Commitology. The latest draft available can be found in Appendix IV to this Explanatory Note for information.

² Further information about the European Commission's Mandate to EUROCONTROL and the outcome and deliverables of EUROCONTROL for the Phase 1 to the European Commission can be found in the following link: http://www.eurocontrol.int/ses/public/standard_page/sk_sera.html.

³ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1). Regulation as last amended by Regulation 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51).

⁴ Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB 08-2007, 13.6.2007.

⁵ <http://easa.europa.eu/rulemaking/docs/programme/2011-2014/4-year%20Rulemaking%20Programme%202011-2014.pdf>.

⁶ [http://easa.europa.eu/rulemaking/docs/tor/atm/ToR%20ATM.001\(a\)%20&%20\(b\)%20-%20Issue%202.pdf](http://easa.europa.eu/rulemaking/docs/tor/atm/ToR%20ATM.001(a)%20&%20(b)%20-%20Issue%202.pdf).

Rules of the Air SES/AS/SERA/IPL2⁷, the content of this NPA has been prepared on the basis of the outcome of a cooperative work carried out by EASA and EUROCONTROL.

7. The proposed rule is compliant with the development of European Union and international law (ICAO), and:
 - a. has been developed taking into account the ongoing work under the single European sky umbrella to implement Article 4 of Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky, as amended by Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system, (hereinafter the 'airspace regulation') that was accomplished following the SERA Mandate and that resulted in the draft SERA Implementing Rule which this NPA complements;
 - b. as it can be found in Appendix VI and in Appendix V to this NPA, it has transposed the relevant provisions from ICAO Annex 11 and ICAO Annex 3 with the minimum changes needed to implement ICAO Standards into the European regulatory framework as it will be explained below. This is done with a view to fulfilling the objective laid down in Article 2 paragraph 2(d) of the Basic Regulation 'to assist Member States in fulfilling their obligations under the Chicago Convention, by providing a basis for a common interpretation and uniform implementation of its provisions, and by ensuring that its provisions are duly taken into account in this Regulation and in the rules drawn up for its implementation'.

II. Consultation

8. To achieve optimal consultation, the Agency is publishing the draft opinion of the Executive Director on its internet site. Comments should be provided within 3 months in accordance with Article 6 of the Rulemaking Procedure. Comments on this proposal should be submitted by one of the following methods:

CRT: Send your comments using the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>.

E-mail: Comments can be sent by e-mail only in case the use of CRT is prevented by technical problems. The(se) problem(s) should be reported to the [CRT webmaster](mailto:CRTwebmaster@easa.europa.eu) and comments sent by email to NPA@easa.europa.eu.

Correspondence: If you do not have access to internet or e-mail you can send your comment by mail to:
 Process Support
 Rulemaking Directorate
 EASA
 Postfach 10 12 53
 D-50452 Cologne
 Germany

Comments should be submitted by **10 May 2011**. If received after this deadline they might not be taken into account.

III. Comment Response Document

9. All comments received in time will be responded to and incorporated in a comment response document (CRD). The CRD will be available on the Agency's website and in the Comment-Response Tool (CRT).

⁷ <http://www.eurocontrol.int/ses/gallery/content/public/docs/pdf/ses/SERA%20INITIAL%20PLAN%20PHASE%20I%20December%202010.pdf>.

IV. Content of the draft Opinion

a. Background and regulatory framework

10. Regulation (EC) No 1108/2009 amending the Basic Regulation was adopted by the European co-legislators in order to cover the safety regulation of ATM/ANS (and aerodromes) by the European aviation safety regulatory system (henceforth the 'EASA system'). Therefore, a series of implementing measures (including draft Implementing Rules (IRs), Acceptable Means of Compliance (AMC), Certification Specifications (CSs) and Guidance Material (GM)) need to be prepared by the European Aviation Safety Agency ('the Agency') within the specified deadlines that don't stem only from the Basic Regulation itself but also from the need to support the achievement of a single European sky and the implementation of the SES II⁸ (e.g. facilitate the establishment of the Functional Airspace Block (FAB) by the end of 2012).
11. As specified in recital (13) of Regulation (EC) No 1108/2009 and also as required by Article 8b paragraph 7 of the same regulation, the measures shall be developed using as far as practicable the relevant provisions of Regulation (EC) No 549/2004 of 10 March 2004 laying down the framework for the creation of the single European sky (framework Regulation), Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation), Regulation (EC) No 551/2004 of the European Parliament and the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation), and Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation). These regulations have been amended by Regulation (EC) No 1070/2009 of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European aviation system.
12. Essential Requirements to the Basic Regulation contained in Annex Vb Chapter 1.a require the Agency to develop detailed operating rules and procedures for the safe conduct of air traffic in a given airspace and which are related to the safe interaction between aircraft. Situations such as operating a controlled flight without obtaining appropriate air traffic clearances can adversely affect safe separation from other controlled flights, which could, in the worst case scenario, lead to a collision between aircraft. This was explained in detail in the Agency's description of the Essential Requirements in Annex Vb which was attached to the Agency's Opinion No 01/2008. In the ICAO context, Annex 2 contains rules of the air, as well as other annexes (such as Annex 3, Annex 6, Annex 10 and Annex 11) and some other ICAO documents, such as PANS ATM (Doc 4444) and PANS Aircraft Operations (Doc 8168), contain numerous such operating rules and procedures.

The Essential Requirements in Chapter 1.a of Annex Vb to the Basic Regulation are copied below for easy reference:

'All aircraft, excluding those engaged in the activities referred to in Article 1(2)(a), in all phases of flight or on the movement area of an aerodrome, shall be operated in accordance with common general operating rules and any applicable procedure specified for use of that airspace.'

13. In addition, Article 4 of the SES airspace Regulation requires the Commission to adopt implementing rules related to rules of the air and uniform airspace classification application.
14. As the requirement to develop rules of the air on the basis of ICAO Annex 2 was already covered in the SES airspace Regulation before the EASA Basic Regulation was extended to the field of ATM/ANS and aerodromes, the European Commission started already the work in 2007 by requesting EUROCONTROL to conduct detailed charting and analysis of all existing differences notified by the SES participating Member States to ICAO Annex 2, as well as an examination of the relevance of the detailed provisions of Annex 2 as regards their suitability for transposition into EU law. Then the European Commission mandated EUROCONTROL to

⁸ http://ec.europa.eu/transport/air/single_european_sky/ses_2_en.htm.

support the Commission and EASA with the development of the Standardised European Rules of the Air (SERA). The work done under the Phase 1 of this mandate and the output of this work are explained in more details in paragraph i below.

15. The above indicates that there is a dual legal basis for the development of the rules of the air. In one hand the EASA Basic Regulation requires EASA to prepare implementing rules to cover the common general operating rules and any applicable procedures specified for use of that airspace and on the other hand the SES airspace Regulation requires the European Commission to adopt implementing rules related to rules of the air and the uniform airspace classification application.
16. Because of all the above, the initial mandate from the European Commission to EUROCONTROL indicated already that the work needs to consider the institutional developments related to the extension of the EASA Basic Regulation to ATM/ANS. The European Commission has later amended the mandate to clarify that the process to be followed for the SERA Phase 2 is the EASA rulemaking procedures in accordance with high level political decisions. The amendment also specified that this procedure should be complemented by a EUROCONTROL informal consultation process as necessary.

i. SERA Mandate and draft Commission Regulation on common rules of the air

17. On the 14 of August 2009, the European Commission issued a mandate to EUROCONTROL for support on the development of Standardised European Rules of the Air (SERA) ('Mandate to EUROCONTROL for support on development of standardised European Rules of the Air (SERA)').
18. The intention of the European Commission as stated in the mandate is to create a set of regulatory material with a view to supporting implementation of Functional Airspace Blocks (FABs) and 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.
19. The SERA mandate states that the common rules should ensure an efficient and expeditious international air traffic, which requires a common understanding of signs, collision avoidance procedures, air traffic services instructions, phraseology and similar related matters. The mandate recognises that even if ICAO Annex 2 is named 'Rules of the Air', the candidate ICAO provisions which are of a 'rule of the air' nature are spread across several annexes and documents, most notably:
 - Annex 2 — Rules of the Air,
 - Annex 6 — Operation of Aircraft,
 - Annex 10 — Communication Procedures,
 - Annex 11 — Air Traffic Services,
 - Document 4444 — PANS-ATM,
 - Document 8168 — PANS-OPS,
 - Document 7030 — EUR Regional Supplementary Procedures.
20. The SERA mandate foresees a phased approach in the development of regulatory measures. The first deliverable was concentrated on the transposition of ICAO Annex 2 standards and related provisions into a draft Commission Regulation laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (SERA Part A).

21. This first draft implementing rule (hereinafter referred to as the 'SERA Part A') which focuses on the transposition of ICAO Annex 2 under the SERA mandate was delivered by EUROCONTROL to the European Commission in June 2010⁹. In view of the subject matter, the draft was developed by EUROCONTROL, EC, and ICAO in consultation with EASA. The European Commission made a legislative proposal based on the report sent by EUROCONTROL and it was initially presented to the Single Sky Committee at their September 2010 meeting. Based on the comments received, the European Commission has subsequently amended the proposal and the latest draft available at the time this NPA is issued is provided for information only and in order to help the understanding of the draft SERA Part B in the Appendix IV to this Explanatory Note. This draft is being further reviewed by the European Commission based on the comments received and it cannot therefore be considered as final until it is adopted by the European Commission through committee.
22. As explained by EUROCONTROL in its final report to the European Commission, in the draft SERA Part A the ICAO layout and structure have been retained as much as possible and taken as a common basis because the mandatory provisions of ICAO Annex 2 must be applied over the high seas without exception. Existing national differences from ICAO SARPs were carefully assessed and some, where appropriate, were retained as proposed common differences. However, the majority of the proposed common differences result from the upgrading of notes contained in ICAO Annex 2 from interpretative material in ICAO Annex 2 to mandatory requirement in the SERA IR. The common European differences are described in a supplement to SERA Part A and Member States shall notify these differences to the ICAO as required by the Chicago Convention. Member States shall formally notify ICAO for the common differences the latest by the date of applicability of the draft SERA Part A when adopted.
23. The SERA mandate was amended by letter MOVE E2/JP/sr sent to EUROCONTROL on 15/10/2010 to reflect the adoption of Regulation (EC) No 1108/2009 amending the Basic Regulation.
24. The main changes introduced in the SERA mandate are summarised below:
 - The use of the EASA rulemaking process was introduced for the continuation of SERA regulatory process after SERA Part A;
 - The working method was adjusted to take into account the establishment of the rulemaking task ATM.001 and the associated rulemaking group and ad hoc working groups. The former EUROCONTROL SERA implementing rule drafting group that developed the draft SERA Part A evolved into an ad hoc drafting group for ATM/ATS regulation together with additional members from the ATM.001 rulemaking group and working under the umbrella of ATM.001.

ii. The regulatory framework

The total system approach

25. The aviation system needs to be considered as a single system in which all parties (aircraft, engines, equipment systems and constituent manufacturers, aircraft operators, crew, ANSPs, aerodromes designers and aerodrome operators, air traffic controllers, ground engineers, maintenance engineers, maintenance organisations training schools, regulators and oversight authorities) are working together forming a seamless network.
26. In order to guarantee a high and uniform level of civil aviation safety as well as to guarantee a competitive and efficient aviation market and the free movement of persons and goods in the most efficient and effective manner within the EU, it has been decided to centralise some regulatory acts at European Union level. As already explained above, with regard to safety regulation in the civil aviation system, the Agency has now been given the competences for all aviation domains: initial airworthiness, continuing airworthiness, air operations, flight crew licensing, aerodromes, air traffic management and air navigation services. Moreover, for the

⁹ http://www.eurocontrol.int/ses/public/standard_page/sk_sera.html.

field of Air Traffic Management and Air Navigation Services (ATM/ANS), the European Commission has implemented the single European sky (SES) with competence in rulemaking for ATM/ANS. The safety pillar of the SES II is however covered by the extension of EASA to ATM/ANS as explained in recital (1) of Regulation (EC) No 1108/2009.

27. A total aviation system approach is needed to avoid safety gaps and overlaps in the overall risk management process. The only way to achieve this is to clarify the rights and obligations, privileges and responsibilities of each party of the system. In order to reach those objectives, and taking into account the European regulatory framework, it is extremely important to apply a coordinated, harmonised and, where practicable, an integrated approach for rulemaking at European Union level.
28. The coordinated and integrated approach can only be achieved if the rulemaking processes and planning are coordinated and if, as far as it is practicable, the rule structures are harmonised or better integrated.
29. An integrated rule structure for the civil aviation system would allow for harmonisation of the safety processes and terms used by the regulated persons and would clarify the responsibilities of each party of the system in order to avoid safety gaps (no entity will be responsible to mitigate the identified risk) or safety overlaps (various entities are required to apply the same mitigating measure for an identified risk), and therefore it would facilitate the implementation of the total aviation system approach.

The need to split ICAO Annex 3, Annex 11 and other relevant documents

30. ICAO Annexes are mainly addressed to the States which have the obligation to ensure that the standards contained in the annexes are applied by the relevant regulated parties (persons and organisations). The contracting Member States need to transpose the ICAO SARPs into their national legal framework.
31. In the European Union there is a split of responsibilities between the Member States, the European Commission and EASA regarding rulemaking and the application of the rules.
32. With regard to the rulemaking activities in the field of ATM for civil aviation, almost all the rulemaking tasks are centralised and it is the European Commission to adopt the necessary implementing rules.
33. However, as far as safety of the civil aviation system is concerned, the Agency has been given the task to prepare the necessary rules within the scope provided in the EASA Basic Regulation. The Agency is also responsible for implementing the rules in limited cases for which it is the competent authority as required under Article 22a of the EASA Basic Regulation (e.g. Pan-European Service Providers). In most of the cases, Member States designate a National Supervisory Authority or Authorities which is/are tasked to implement the EU regulations, to issue certificates and licences (e.g. ANSPs and ATCOs) and to oversee the continuous compliance with the applicable requirements.
34. Because of the different roles of the different parties in the European Union, it is not always possible to perform just a cut and paste of the ICAO Annexes into the European Union regulations. Moreover, in the field of ATM, the rules have usually been organised depending on who is responsible to comply with them. When EUROCONTROL published the ESARRs, it was already decided that certain provisions from the ICAO Annexes (such as safety management and safety oversight) should be regulated separately from other safety and technical requirements. Existing SES regulations, such as Commission Regulation (EC) No 2096/2005 which is based on EUROCONTROL ESARR 3 and ESARR 4, contains the provisions from ICAO Annex 11, Annex 3 and Annex 15 on SMS and QMS, and Commission Regulation (EC) No 1315/2007, which is based on ESARR 1, contains the safety oversight requirements for the competent authorities that are contained in ICAO Annex 11, Annex 3 and Annex 15. Regulation (EC) No 2096/2005 and Regulation (EC) No 1315/2007 have already been transposed under the EASA Basic Regulation with the Opinion No 02/2010 that the Agency issued to the European Commission on 29 May 2010.

35. Moreover, some of the technical requirements which are today in Annex 11 are already regulated through other SES regulations, such as the designation of providers which is required in the service provision Regulation (Regulation (EC) No 550/2004), the flexible use of airspace (Regulation (EC) No 2150/2005), the air traffic flow management (Regulation (EC) No 255/2010) and the aeronautical data quality (Regulation (EC) No 73/2010).
36. Additionally, the European Commission mandated EUROCONTROL in the SERA Mandate to support the establishment of a complete and consistent set of European rules of the air by complementing the provisions coming from Annex 2 with similar provisions coming from other ICAO annexes, such as Annex 3, Annex 6, Annex 10, Annex 11 and with the material from other ICAO documents.
37. Based on the above, it is obvious that the simple cut and paste of the ICAO Annexes 3, 6, 10, and 11 at this stage would double the regulations that are already applicable to the undertakings and it is therefore not possible.
38. Moreover, in order to implement a performance-based rulemaking [which goes hand in hand with the implementation of SMS together with the performance scheme (Regulation (EC) No 691/2010) in ATM], it is essential to ensure that the implementing rules contain all the essential elements which are necessary for a safe and uniform implementation of the ICAO provisions in the European Union and that, where applicable, use is made of the Acceptable Means of Compliance and Guidance Material for the non-essential elements as it was specified in the SERA Mandate.

The rule structure

39. In order to allow the regulated persons and organisations as well as the competent authorities to identify the rules applicable to them and to avoid double and conflicting requirements, an integrated rule structure is considered essential for the implementation of a total system approach for the civil aviation system. In addition, in order to ensure compliance with the ICAO standards, it is proposed to make use of the integrated rule structure accompanied by up-to-date ICAO compliance matrices that would map the ICAO provisions in the European regulatory framework and would assist Member States in fulfilling their obligations under the Chicago Convention.
40. To accomplish the above, the European Commission is proposing to the Single Sky Committee a comprehensive rule structure that could build, as appropriate, on the rule structure as proposed by EASA for its extension to air operations and flight crew licence but adapted of course to ATM/ANS field — although the proposed rule structure is constantly under development and it is not yet approved or finalised. Appendix I to this Explanatory Note explains a snapshot of the proposed rule structure based on the latest available proposal in order to help understanding the intention and the integration and interaction of the provisions contained in the SERA Implementing Rule with other regulations that are being prepared by EASA. It is important to consider this proposed rule structure as a concept and as a goal as its application to ATM is still under development. **Stakeholders' views are welcome in this particular area.**
41. It is important to highlight that the rule structure is proposed to help the regulated persons and organisations to find their way through the regulation, to ensure coordination between the regulations and to avoid double regulation. It is therefore considered by the Agency as an enhancement of the regulatory system and it tries to make it easier for users to find all the regulations applicable to them. This regulatory approach is not new in the ATM field since, as explained above, the existing SES regulatory framework (resulting from SES I) already took this approach.
42. With regard to the structure and substructure of the draft SERA IR, it is proposed to follow the same structure that was proposed by EUROCONTROL to the European Commission and that the Commission is using during the legislative process for SERA Part A (meaning that the same Annex to the regulation contains SERA Part A and SERA Part B). As the final structure of the

SERA IR is still under development and will depend on the outcome of the consultation process, Stakeholders' views are also welcome on this area.

iii. Working method

43. Following the delivery of the draft SERA Part A IR and the amendment of the SERA mandate, the EUROCONTROL SERA drafting group, which has worked in the first phase of the mandate, was modified and became the Ad hoc Leading Group for ATS/ATM Regulation (ALGAR). It is composed of members from both EUROCONTROL SERA drafting group and EASA ATM.001 rulemaking group and is in charge of the preparation of both SERA Part B and follow-up draft material as well as the relevant requirements for air traffic services for which the legal basis is only in the Essential Requirements in Annex Vb, Chapter 2 of the EASA Basic Regulation. This is covered under the rulemaking task ATM.001. As already explained, this group has merged the two tasks: development of SERA requirements together with the support to EASA in the rulemaking task ATM.001.
44. This combined group started its activities in June 2010. As the first task of the group was to review the material coming from ICAO Annex 11 and Annex 3 and from relevant documents to identify the candidate material for SERA requirements, the group developed some principles of allocation ('SERA drafting principles') that once agreed were considered to be the basis of the work. These drafting principles are detailed in b.i. below.
45. On the basis of these drafting principles, the group developed a first draft of SERA Part B for which EUROCONTROL organised an informal consultation with the stakeholders following the instructions contained in the amended SERA mandate. SERA Part B informal consultation was conducted from 12 November 2010 until 6 December 2010. The purpose of the informal consultation was to improve the content of the draft SERA Part B with the stakeholders' input and in particular to seek views on the following issues:
 - the introduction of maximum duration for airspace class F implementation;
 - the insertion in the draft SERA Part B of an appendix, containing a table with the airspace classes description which comes from Appendix 4 to ICAO Annex 11;
 - the separation to be provided for VFR at night in controlled airspace;
 - the clearance for special VFR flights;
 - as the term OFIS is not used in Europe, it was decided to keep only the provisions related to ATIS ;
 - tool 7 of EUROCONTROL airspace classification toolbox not transposed;
 - downstream clearances;
 - use of Radio Mandatory Zone (RMZ) and Transponder Mandatory Zone (TMZ); and
 - the deletion of 'composite separation'.
46. Comments were received from 13 organisations (46% of the responses came from ANSPs, 46% from CAAs and 8% from military authorities). The responses from the stakeholders were considered extremely useful with a lot of valuable comments allowing the ALGAR working group to improve the draft SERA Part B IR during the following period from the end of the informal consultation until the end of 2010.
47. The final draft SERA Part B was then reviewed by the ATM.001 rulemaking group. It is important to highlight that due to the tight deadlines given by the European Commission and by the political decisions to have a set of SERA requirements adopted by the end of 2011 to provide Member States with at least one year of transition and to support the establishment of the FABs by the end of 2012, the time available for the ATM.001 rulemaking group to review the outcome of the drafting group was very limited and was only concentrated on the following aspects:

- clarification of the responsible actor (ATS unit versus competent authority) in some provisions;
 - the application of the drafting principles to some provisions and whether it should be regulated in SERA or elsewhere (e.g. ATS requirements); and
 - the interpretation of the proposed SERA requirements coming from Annex 3 in relation to routine aircraft observation.
48. Although the stakeholders participating in the ATM.001 rulemaking group were also consulted through the informal consultation, the group only concluded their views in the above-mentioned items but was not able to conclude on the entire draft of SERA Part B.
49. The Agency has decided to launch the NPA process to respect the deadlines set by the European Commission and to broaden the consultation. Based on the views of the ATM.001 rulemaking group on the above-mentioned items and based on the outcome of the informal consultation, the Agency has decided to make specific requests on these areas.
50. The content of this NPA has been prepared by the Agency on the basis of the draft SERA Part B after the ALGAR working group reviewed the comments received from the EUROCONTROL informal consultation and it has also made use of the explanatory and justification material provided by EUROCONTROL to the Agency on the 10 of January 2011.

iv. Next steps and the way forward

51. Following the Rulemaking Procedure, the Agency, supported by the ALGAR working group and under the umbrella of ATM.001, will review the comments received during the NPA public consultation process and will enhance the draft SERA Part B.
52. In order to meet the deadlines it is anticipated to publish the CRD at the end of June 2011 in order to allow the Agency to issue the Opinion to the European Commission at the beginning of October 2011. These are only estimated timescales and they may vary depending on the outcome of the NPA process.
53. During the NPA process, it is the Agency's intention to develop the necessary Acceptable Means of Compliance and Guidance Material to support the implementation of SERA in the EU with a view to issuing the Agency's decisions in early 2012. The Agency will follow the same working method as explained in iii as this is the working arrangement requested by the European Commission to EUROCONTROL in the amended SERA mandate.
54. In addition, the Agency together with the ALGAR working group will further assess the content of ICAO PANS-ATM with a view to determining, following the drafting principles explained below, whether they can be transposed into SERA Part B, SERA Part C, if applicable and necessary to keep them in a different Part, or into AMC/GM material.
55. In parallel, the Agency continues its rulemaking activities for the transposition of the remaining provisions for SARPs from Annex 3 and Annex 11 and other relevant ICAO material under the umbrella of the rulemaking task ATM.001 for the development of the relevant requirements for the air traffic management and air navigation services (ATM/ANS) and as required by the EASA Basic Regulation. For the development of air traffic services requirements the same working arrangements in paragraph iii are used.

b. New proposed Annex to SERA Implementing Rule (SERA Part B)

i. Principles of allocation of ICAO Annex 11 provisions into the SERA Implementing Rules

56. Currently rules of the air and ATM procedures regarding the same or similar subjects are found across multiple ICAO annexes and documents. As already mandated by the European Commission in the SERA mandate, it is considered necessary to proactively and progressively resolve this situation in the EU, rather than replicating it. Furthermore, the allocation of ICAO

material to the SERA regulation needs to be consistent and to support a future integrated rule structure, with alignment of EASA and SES processes. In order to be able to prepare the content of this NPA, and in particular the text of draft SERA Part B, the experts of the ad hoc group developed drafting principles that could be applied to help making decisions on the allocation of material to SERA and how the rules should be drafted. These principles address in particular:

- how to decide which material should be covered by SERA, what is covered by existing rules, and what might be best covered in other rules in the future;
 - how to deal with varying ICAO material (annexes, PANS, standards, recommended practices, notes), and its positioning within the EU rule structure as either: Implementing Rules (IRs), Acceptable Means of Compliance (AMC), Certification Specifications (CSs) and Guidance Material (GM); and
57. how to incorporate issues regarding the development of ICAO differences of varying degree and nature of compliance, particularly where they demonstrate a performance improvement over and above the ICAO requirements. The principles for transposition can be found in the Appendix II to this Explanatory Note. It should be highlighted that the principles developed are generic principles. Therefore these generic principles were not always appropriate, and some provisions have been treated on a case by case basis due to their specificity when transposing¹⁰ the ICAO material into EU regulations.

ii. Content of SERA Part B

58. The draft opinion contains additional definitions to those already contained in article 2 of the draft SERA IR and a new Part B (SERA Part B) that transposes the Rules of the air provisions related to services in air navigation (transposed from ICAO Annexes 11 and 3). It also contains two appendices to the Annex.
59. Based on the application of the drafting principles, no notified national differences have been retained for the commonly agreed differences for SERA Part B. However, new provisions, more detailed than the existing ICAO provisions, as well as the elevation of notes to the binding status, are considered to be differences and are included in the Supplement to SERA Part B. It must be noted that all differences are more demanding than the ICAO provisions (therefore considered to be Category A differences).

Definitions

60. The definitions presented are transposed from ICAO Annexes 11 and 3 and amend article 2 of the draft SERA IR. These definitions have been selected by the dual criteria that they belong to the above-mentioned annexes and that they correspond to the terms used in the draft SERA Part B.
61. It should be noted that differences cannot be notified with respect to ICAO definitions. In cases where substantive changes are made to a definition, it is necessary to notify a difference to the provision(s) affected by the use of the new definition.
62. The definitions proposed for the SERA Implementing Rule do not represent substantive change to the definitions contained in ICAO Annexes 11 and 3, but are editorially amended to reflect the SES legislative environment. This is notably the case for the definition of 'operator', adapted into 'aircraft operator' to avoid any confusion between the respective meanings of ICAO and EASA definitions.

SERA Part B

63. It consists of five chapters, followed by two appendices:

¹⁰ The terms 'transpose(d)' and 'transposition' are intended to mean the consideration of the ICAO provisions and the subsequent adaptation into the EU rule structure. These terms are not intended to mean only 'copy paste' from the ICAO provisions into the EU Regulations.

- Chapter 1 — Air Traffic Services (ATS) consists of:
 - Objectives of ATS and coordination between aircraft operators and air traffic services units. Paragraph 2.2 from ICAO Annex 11 is transposed without difference. Since SERA Part B is describing the requirements related to 'services in air navigation', it has been decided to place the objectives of ATS at the beginning of Part B, considering that Part A was related to general provisions, frequently describing requirements put primarily on pilots. It is important to highlight that as objectives they are not measurable requirements and therefore the possibility was considered to place it elsewhere. **Views from the stakeholders are particularly sought for the placement of the paragraph 1.1.1 of SERA Part B, whether it could be placed in the articles of the regulation (Article 1 Subject matter and scope), in Part ATS, to remain in SERA Part B as currently proposed, or elsewhere.** Paragraph 2.16 of Annex 11 is transposed with editorial change, relevant to EU legislation (the reference to 'Annex 6' is replaced by 'relevant EU rules on Air Operations'). Although, the provisions come from ICAO without technical modification, it is considered to be a wide provision which could lead to various different interpretations. **Views from the stakeholders are expected for the application and implications of the requirements in paragraph 1.1.2.1 of SERA Part B, especially for the expression 'shall have due regard for the requirements of the aircraft operators'.**
 - ICAO provisions for the time in air traffic services are transposed partially (only paragraph 2.25.2 of ICAO Annex 11) due to the application of the principles applied in determining the rules of the air. The rest of paragraph 2.25 of ICAO Annex 11 has been considered as candidate material for Part ATS. A limited number of States have notified differences with regard to this specific requirement, indicating that time checks would be delivered to the nearest minute only. This kind of difference was also supported by few similar comments of the informal consultation considering that the adoption of such a difference at European level would probably constitute a Category C difference to ICAO SARPs ('Less protective'). **The views of the stakeholders are sought in order to optimally assess the question at the stage of final drafting.**
 - Airspace classification (6 ICAO airspace classes) transposes chapter 2.6 of ICAO Annex 11 but also adds provisions contained in the table of Appendix 4 to ICAO Annex 11, relevant to speed limitation, communication requirements and requirements for ATC clearance. The table presenting the ATS airspace classes appears in Appendix 1 to SERA Part B. It differs from the table in Appendix 4 to ICAO Annex 11 by adding a column for radio communication capability requirements. This addition has been considered necessary in order to provide more clarity in the requirements. Some comments were expressed during the informal consultation regarding the rationale and utilisation of the 250 kts speed limitation in some airspace classes and not in some others. It may be consequently useful to clarify that the 250 kts speed limitation has been adopted by ICAO as a result of studies showing that the 'see and avoid' principle could be efficient only up to a certain speed. Therefore, this limitation is applied whenever the 'see and avoid' principle is used and, on the contrary, not applied where separation is provided by ATS. Subsequently, where the speed limitation is not implemented, visual separation should not be permitted.
 - The ICAO provision for the temporary nature of class F airspace is further developed setting maximum duration of 3 years for application of advisory service. In fact, ICAO Class F has no difference from Class G with respect to VMC minima. Class F contains an obligation on ATC to provide an advisory service to IFR flights

as far as it is practicable but it is not guaranteed as to its effect. This provides that in Class F, IFR in receipt of an advisory service will be separated from other IFR as far as practical, although this is not guaranteed. While there is a requirement for IFR flights to maintain continuous two-way communication with ATC, it is not mandatory for such flights to participate in the advisory service. It is considered that there is little benefit provided by Class F. Therefore it is not considered appropriate to promote the application of Class F in European airspace. Today only three Member States employ Class F in Europe, two of them are considering the option to withdraw it and the third one is applying a hybrid version which could be replaced using the proposed SERA provisions. Another harmonisation step could be the aim to remove the application of ICAO Class F in the European airspace. Based on the current proposal of SERA Part B and taking into account the tools provided, **stakeholders' views are welcome on the possibility to remove the ICAO Class F from the SERA Part B provisions.**

- o Regulatory tools are provided to the Member States for establishing requirements for communication and SSR transponders carriage in certain portions of the airspace by defining Radio Mandatory Zone (RMZ) and Transponder Mandatory Zones (TMZ).

This is not required by ICAO but it is based on the airspace classification toolbox (tools 6 and 8), on the European Commission's approach as described in its working paper (WP) 7 presented to the Single Sky Committee at their 37th meeting that took place last September 2010 and on the outcome of the informal consultation. It is believed that the proposed provisions related to RMZ and TMZ may provide a satisfactory solution which would allow States to use these concepts to enhance safety in those parts of the airspace where it is felt necessary while maintaining a sufficient level of commonality and standardisation in the methods applied throughout Europe. Definitions of RMZ and TMZ have been proposed in the list of definitions to be added to article 2 of the draft SERA regulation and the drafting of the provisions related to these concepts has been improved taking into account the comments received from stakeholders and to improve the clarity as far as continuous air-ground communication watch (listening watch) and two-way communication are concerned. A requirement for initial call before entering radio mandatory zone has been added to the draft. Consequently, the continuous air-ground communication watch (listening watch) is confirmed as the minimum requirement in the context of the RMZ. The intention is that pilots give a first contact call to be followed by a reply from ATS or not according to the activity and specificity of the RMZ, as decided by the competent authority and subsequently published. In case of no answer, continuous air-ground communication watch (listening watch) would be maintained throughout the RMZ. It must be noted that these concepts do not introduce any need to notify differences to ICAO.

- o Provisions for service to aircraft in the event of emergency transpose the standards of paragraph 2.23 of ICAO Annex 11. In-flight contingency provisions transpose directly paragraph 2.24 of ICAO Annex 11.

A new provision is added in paragraph 1.5.1.1.2 of SERA Part B, which is a difference from ICAO SARPs and is also recorded in the Supplement to SERA Part B.

Transposition of paragraph 2.24.1.1.2 of ICAO Annex 11 is also more demanding since paragraph 1.5.1.1.3 of SERA Part B requests an immediate action when ATS unit is aware of the possibility of interception or other safety hazards. This is also a difference from ICAO SARPs and is recorded in the Supplement to SERA Part B.

Another difference from ICAO SARPs in this chapter is the elevation of Note 1 in paragraph 2.23.3 and Note 3 in paragraph 2.24.1 of ICAO Annex 11 into the

provision in the first sentence of paragraph 1.5.1.3 of SERA Part B. This difference is also recorded in the Supplement to SERA Part B.

- Chapter 2 — Air Traffic Control (ATC) Service consists of:
 - Provisions for application and operation of ATC service transposing directly the provisions of paragraphs 3.1 and 3.3 of ICAO Annex 11. Recommendations and notes of these ICAO Annex 11 paragraphs are not transposed for the time being as well as point 3.3.2 which will be transposed in Part ATS. Point 3.3.5 of ICAO Annex 11 is transposed with editorial changes replacing the words 'Appendix 3 to Annex 2' with 'SERA Part A Appendix 2' to make the correct reference to the EU legislation.

During the review with the various groups of experts and because of the need to avoid double requirements within the EU regulations, the question was whether the provisions in 2.1 would be better placed where all the rest of the provisions related to ATS will be in the future.

Views of the stakeholders are sought for the right placement of the provisions in paragraph 2.1 of SERA Part B (transposing paragraph 3.1 of ICAO Annex 11), whether it should be part of SERA or of Part ATS.

- Composite separation was first introduced in Annex 11 in its sixth edition in 1970 and can only be used in accordance with regional air navigation agreements. At present, the only regional agreement regarding the use of composite separation is related to the flexible Pacific Organized Track Systems (PACOTS) North Pacific (NOPAC) route system in certain specified areas (between the United States and Japan and the route system between Hawaii and the west coast of the United States within the Fukuoka, Oakland Oceanic and Anchorage Oceanic FIRs).
- In accordance with the ICAO *ATS Planning Manual* (Doc 9426), paragraph 3.2.1, composite separation is applied only in controlled airspace where traffic density warrants the introduction of a parallel track system or additional tracks. Furthermore, it is specified in paragraph 3.2.2 that composite separation may be considered where navigation is not or cannot be accomplished by short range navigation aids and is dependent on long-distance station-referenced aids and/or on self-contained navigation aids. Finally, in Doc 9426 it is also specified that composite separation is to be used in areas where non-radar control procedures are applied and the frequency of flights crossing the axis of the associated track system is not significant.
- Based on the above it can be concluded that composite separation does not require to be considered for EUR airspace; consequently, the Annex 11 provisions regarding composite separation have not been included in the draft Part B and should not be included in the SERA Implementing Rule.
- Provisions from paragraphs 3.3.5.1 and 3.3.5.2 of ICAO Annex 11 are also not transposed, because based on the application of the above drafting principles the monitoring of height-keeping performance in RVSM airspace was considered a better candidate for transposition into the Authority Requirements regulation.
- The paragraph on the selection of separation minima transposes paragraph 3.4 of ICAO Annex 11 with specific editorial changes reflecting the EU legislation. In particular, this section mandates the Commission to propose measures with regard to the selection of separation minima. It also mandates the competent authority the responsibility to select the separation minima while in ICAO provisions the entity responsible for the selection of the separation minima is not explicitly mentioned. The intention for the next phase of SERA development is to review the provisions of

ICAO PANS-ATM and ICAO Document 7030 which are fulfilling both the 'rule of the air' and the 'binding status' criteria before deciding on the future structure and interface between Part B (services) and Part C (procedures), if applicable. Discussions within the ATM.001 rulemaking group indicated that the selection of the separation minima could also be proposed by the ANSPs and approved by the competent authority. In addition, some of the experts were in favour of placing this provision in the relevant requirements for air traffic services (Part ATS) since this is not considered to be an action that is required to be known by the pilot. **Views of the stakeholders are sought in order to better address the requirement for the entity responsible for selection of the separation minima and for the placement of these provisions.**

- o Air traffic control clearances section transposes the requirements from chapter 3.7 of ICAO Annex 11. The recommendation of 3.7.2.2 of ICAO Annex 11, relevant to uninterrupted descent of an aircraft from supersonic cruise, is elevated to requirement in SERA Part B. As in other provisions the term 'Appropriate ATS authority' is replaced by 'competent authority' to reflect properly EU existing and planned legislation. The transposition of paragraph 3.3.4 of ICAO Annex 11 into paragraph 2.2.2 of SERA Part B is more demanding and thus is also a difference from ICAO SARPs, recorded in the Supplement to SERA Part B.

Some elements have been added to the read back provisions in order to be more specific and to insist on some important aspects which were inherently covered by the lead in text of paragraph 2.4.4.1.1 of SERA Part B ('*Other clearances or instructions ... shall be read back ...*'). It concerns the read back of 'newly assigned communication channels' which is already stated in Doc 7030 and the 'taxi instructions' which were considered essential by relevant groups of experts (e.g. the EUROCONTROL APDSG) and subsequently deserved to be specifically mentioned among the 'Other clearances or instructions' to be read back. Therefore, these elements are not considered to create differences to ICAO.

The Agency is of the opinion that possibility for prescribing when voice read-back of CPDLC message is required or not should be an operational decision following procedures proposed by the ATS Unit and approved by the competent authority.

Views of the stakeholders are sought for paragraph 2.4.4.2 of SERA Part B regarding the voice read-back CPDLC messages, whether this provision is more relevant to ATS units, or the read-back requirements shall be established by the competent authorities.

- o The analysis conducted by the ad hoc group of experts showed that downstream clearances are used in EU Member States only in relation to obtaining oceanic clearance before entering the North Atlantic Region and not applied within the European airspace. However, in order to ensure that a comprehensive evaluation is achieved, the views of the stakeholders of the EUROCONTROL informal consultation panel were sought as to whether the 'downstream clearances' section should be deleted or retained. Based on the comments received during the informal consultation, it was decided to retain the downstream clearance provisions in the draft Part B.
- o ICAO provisions for ATFM are not transposed since they have been already covered by another Commission Regulation or will be covered by other relevant and additional provisions for ATFM.
- o Control of persons and vehicles at aerodromes section transposes without significant changes to the provisions from paragraph 3.8 of ICAO Annex 11.

- o The provisions related to special VFR in controlled zone define in addition to ICAO SARPs the applicable conditions for special VFR. The conditions for VFR are described in SERA Part A. In 4.2, a reference is made to the special VFR clearance. The special VFR clearance is a concept which belongs to air traffic services, and therefore it is proposed to describe it in SERA Part B as presented in the proposed draft. The content of this description is based on the elements of tool 4 of the EUROCONTROL ANT airspace classification toolbox, which have been adapted as necessary in the context of SERA Part B while maintaining consistency with SERA Part A. The proposed provision also covers the requests expressed in several stakeholders' comments to define minimum conditions for a special VFR clearance to be delivered. The current approach proposed has been widely supported during the EUROCONTROL informal consultation. However, this is considered to be a difference from ICAO SARPs and is also included in the Supplement to SERA Part B.

- o Special VFR flights may be permitted in a CTR. Annex 11 indicates that 'clearance issued by air traffic control units shall provide separation: ... between special VFR flights when so prescribed by the appropriate ATS authority'.

In order to improve safety and standardisation at European level, the possibility was envisaged to apply throughout the single European sky the requirement to provide separation between special VFR flights. Despite the fact that some comments received during the EUROCONTROL informal consultation were in favour of a systematic separation to be provided between special VFR flights, a clear tendency could not be identified and the decision has been to leave the option to the competent authority to decide whether to apply these separations as provided in paragraph 2.2.2 e) in the draft SERA Part B.

- o Some consideration regarding the possibility to propose provisions for separation of VFRs at night in controlled airspace:

When the competent authority permits VFR at night, the conditions described in SERA Part A (4.3) shall apply. These conditions were also included in the EUROCONTROL toolbox approved by the ANT. These conditions require a permanent radio contact in some cases, but not in all cases. Similarly, VFR at night is permitted in several types of airspaces, where separation with other VFR at night or IFR flights may not be provided (i.e. Class E airspace) and the responsibility for spacing rests with the pilot and the 'see and avoid' principle. With regard to this situation, the views of the stakeholders were requested in the EUROCONTROL informal consultation in order to assist in deciding whether this is sufficient and acceptable or if additional provisions should be included to require separation in these cases. A clear tendency resulting from the informal consultation showed that there was not a strong support for the provision of such separation. Moreover, one of the Member States informed to have already implemented such a provision for 2 years and based on the experience gained and the lack of identified benefits has decided to step back and to stop such a provision of separation.

- Chapter 3 — Flight Information Service (FIS) consists of:
 - The provisions related to the application and the scope of FIS directly transpose the standard from chapters 4.1 and 4.2 of ICAO Annex 11. The ICAO recommendations and notes in these chapters are not transposed in the draft IR, except from the transposition of the note in paragraph 4.1.1 of ICAO Annex 11. This note is transposed in paragraph 3.1.2 of SERA Part B and it is therefore recorded in the Supplement as a difference from ICAO SARPs.
 - Automatic Terminal Information Service (ATIS) defining the use of ATIS message and ATIS for arriving and/or departing aircraft. These provisions transpose partially chapter 4.3 Operational flight information service broadcast of ICAO Annex 11, covering only ATIS provisions.

The acronym OFIS, used in Annex 11, corresponds to a generic concept which was intended for use at global level, but for which the only corresponding provision in Europe is the ATIS concept. Subsequently, it has been agreed to replace OFIS with ATIS where appropriate and to consider only this specific case, as applicable in the European airspace. This approach was widely supported during the EUROCONTROL informal consultation.

In order to clarify some comments received on the provision 3.3.1.1 regarding the transmission of the ATIS message by the ATS Unit, the understanding of this provision is that when it is specifically requested by the pilot, the ATS Unit shall transmit the full content of the ATIS message. This point will be considered when guidance material is developed.
 - One comment indicated that an ANSP has developed a safety assessment leading to a different order for the elements of the ATIS information to be delivered. This safety assessment will be considered as soon as it is available and will be reviewed and assessed together with all the comments received from the consultation.
- Chapter 4 — Alerting Service consists of:
 - The provisions related to the application transpose only paragraph 5.1.1 from ICAO Annex 11.
 - The provisions related to information on aircraft operating in the vicinity of an aircraft in a state of emergency transposes paragraph 5.6 of ICAO Annex 11. All other provisions contained in Chapter 5 of ICAO Annex 11 will be considered in Part ATS.
- Chapter 5 — Services Related to Meteorology — Aircraft Observations and Reports transposes provisions from chapter 5 of ICAO Annex 3.
 - In accordance with the SERA principles of allocation described above, those ICAO Annex 3 provisions which require collective actions to ensure the correct outcome have been included in SERA Part B, Chapter 5. The remaining ICAO Annex 3 provisions are being considered as candidate material for the relevant meteorological service requirements (Part-MET), except from those provisions for meteorological service providers (already covered in Regulation (EC) No 2096/2005) which are transposed under the EASA Basic Regulation through the Agency's Opinion No 02/2010.
 - In order to clarify a point raised during the informal consultation, it shall be noted that the term 'meteorological authority' existing in ICAO Annex 3 has been, after proper assessment, replaced in these relevant provisions into 'meteorological service provider' or 'competent authority' as appropriate. This replacement is due to the fact that the former ICAO term does not exist in the SES terminology and

therefore was not appropriate to be retained. It is important to highlight that within the SES legislation only Member States, National Supervisory Authorities or Air Navigation Services Providers are defined. The extension of the EASA Basic Regulation to the field of ATM/ANS was such that the same terminology and definitions were maintained and therefore only those actors should be identified.

- o The provisions related to the type of aircraft observations (routine and special) transpose paragraph 5.2 of ICAO Annex 3 into paragraph 5.1 of SERA Part B. To be consistent with paragraph 5.4 of ICAO Annex 3, the term 'by air-ground data link' has been added.
- o The routine aircraft observations by air-ground data link transposes Appendix 4, 1.1.1, paragraphs 5.3.1, 5.3.2 and 5.4 of ICAO Annex 3. It elevates the recommendation from 5.3.2 'For helicopter operations to and from aerodromes on offshore structures, routine observations shall be made from helicopters at points and times as agreed between the meteorological service provider and the helicopter operators concerned.' into an implementing rule.

The discussions within the ATM.001 rulemaking group indicated that the elevation of the recommendation from ICAO Annex 3 in 5.3.2 into a regulation may not be supported by helicopter operators. Therefore, **views on the suitable transposition of paragraphs 5.3.2 of ICAO Annex 3 would be appreciated.**

- o The provisions for special aircraft observations, other non-routine aircraft observations and reporting of aircraft observations during flight directly transpose respectively paragraphs 5.5, 5.6 and 5.7 of ICAO Annex 3.
 - o The provisions of paragraph 5.8 of ICAO Annex 3 have been transposed in paragraph 5.6.1. The recommended practice in ICAO Annex 11, 4.2.3 has been transposed into 5.6.2.
64. Regarding the supplement to SERA Part B, there is no identified national difference considered for adoption at European level. The reason is because the provisions which have been selected to be in SERA Part B with the binding status of IR are of significant importance and deserve full standardisation. Additionally, the assessment of existing national differences did not show benefits which were likely to justify the adoption of these differences at European level.
65. Moreover, the existing differences will be covered in many cases by the introduction of some tools of the EUROCONTROL ANT approved toolbox, as requested by many stakeholders. The clarification provided by ICAO regarding the two-way communication requirements as of ICAO Annex 2 (4.9 and 5.3.2 — requirements for air-ground voice communications) and ICAO Annex 11 (Appendix 4 — technical capability for two-way communications) also justify that no additional differences would be needed. In this regard, tools 6 and 8 have been considered in the draft whereas tool 7 has not been retained as it would provide a relaxation for a requirement which does not exist. Therefore, and as already highlighted above, the only differences presented in the supplement are linked to notes elevated to the binding status and new text derived from the EUROCONTROL/ANT toolbox or proposed by the drafting group.
66. The implementation of the SERA rule with Part B, once adopted, will require Member States to withdraw any differences previously notified to ICAO with respect to the relevant provisions from Annexes 11 and 3 and to notify the commonly agreed differences in the proposed Supplement to SERA Part B to ICAO.

V. Regulatory Impact Assessment

Purpose and intended effect

67. The aim of the RIA is to determine the best option to achieve the objective of the rulemaking activity while minimising potential negative impacts. It consists of a series of five logical steps that structure the analysis: issue identification, objective definition, option development, impact analysis and options comparison. In this particular case the options comparison is quite limited due to the reason that SERA draft IR was developed in accordance with SERA Mandate and therefore the possibility for choosing the options on how to proceed with the amendment of SERA Part A draft IR was limited.
68. The principle retained is that the impact assessment should cover the generic aspects of the impact of the implementation of standardised ICAO provisions in the scope of the mandate. The impact assessment focuses on aspects deemed to be relevant for all parties concerned by the rule, without examining the detailed impact of the draft implementing rule on a State-by-State basis.
69. It must be noted that the present consultation applies to the draft SERA Part B implementing rule, and essentially to its content. Other related subjects, such as effective dates of applicability, coherence with the wider European and international legal arrangements, functioning of the maintenance mechanism, and in general the issues related to the content and requirements of the SERA mandate itself are not the subject of this consultation and should be addressed by the appropriate bodies (e.g. the EC and the Single Sky Committee).
- a. Issue which the NPA is intended to address*
70. The transposition of the relevant provisions from the ICAO Annex 11 and Annex 3 into the Standardised European Rules of the Air (SERA).
71. Furthermore, the European Commission requested in the SERA Mandate clearly that the work should lead primarily to the creation of a draft European Commission implementing rule unless it would be considered that full harmonisation is not required. It was also requested that the rule should prioritise ICAO-compliant solutions.
- b. Scale of the issue*
72. As mentioned above, even if ICAO Annex 2 is named 'Rules of the Air', it is recognised that provisions which are of a 'rule of the air' nature may also be found in other ICAO documents. That was the basis for the development of draft SERA Part B by identifying which provisions coming from ICAO Annex 3 and Annex 11 shall be transposed into EU legislation as rules of the air.
73. SERA draft IR does not primarily aim at creating new obligations on the Members States but intends to standardise the way existing ICAO obligations will be implemented within the single European sky. Since the transposed ICAO provisions have been in use worldwide for a long time, the scale of the issue is not to be considered as significant.
74. There are few cases in which the proposed draft SERA Part B differs (difference CAT A) from the ICAO SARPs.
- c. Brief statement of the objectives of the NPA*
75. The purpose of this Notice of Proposed Amendment (NPA) is to develop an Opinion on the Implementing Rules on Standardised European Rules of the Air Part B which amends draft Implementing Rules on Standardised European Rules of the Air Part A. The scope of SERA Part A 'Rules of the Air' covers, as described above, the transposition of ICAO Annex 2 provisions.
76. The main objective is to continue with the effort already started by the European Commission to establish a harmonised set of rules of the air for the European airspace to increase safety and to minimise the inconvenience and risk of misunderstandings caused by varying national sets of rules and to ensure an efficient and expeditious international air traffic, which requires a

common understanding of signs, collision avoidance procedures, air traffic services instructions, phraseology and similar related matters.

Options

a. The options identified

a.1 Do nothing:

77. There are 'rules of the air' provisions in the ICAO materials which are not only contained in ICAO Annex 2. The 'do nothing' option will therefore fail to provide clear and uniform regulatory material and to harmonise the European rules of the air.

78. With no uniform European rules of the air, the airspace users will have to follow Member States' legislation with regard to the rules of the air and thus the objectives of the Basic Regulation and the single European sky legislative package will not be reached.

a.2 Draft SERA Part B, transposing rules of the air provisions from ICAO annexes, other than Annex 2:

79. Amending the draft SERA Part A IR by adding rules of the air provisions relevant to the 'Requirements regarding services in air navigation' (SERA Part B) will provide single structured regulation ensuring harmonised and consistent European rules of the air. This is in line with the objectives of the SERA mandate stated by the European Commission.

b. The preferred option selected

80. The selected option is the option a.2 'Draft SERA Part B, transposing rules of the air provisions from ICAO Annexes, other than Annex 2'. The option was selected in accordance with the SERA mandate.

Sectors concerned

81. SERA IR will impact persons (pilots, ATCOs) and entities (Member States, competent authorities, ANSP, aircraft operators and most likely aerodrome operators).

82. Impacts

a. All identified impacts

83. Persons and entities operating in MS that implemented airspace classification not exactly following the ICAO provision (e.g. allowing certain VFR in class A or using class F not as a temporary classification, etc.) may be affected by the implementation of this regulation. In addition, the few additions (e.g. such as elevating some notes into provisions as described in the Supplement to SERA Part B and new text based on the airspace classification toolbox) may also affect those identified sectors.

84. In order to prepare well-structured and broken down quantitative assessment a European-wide survey is needed in order to identify the following:

- MS in which the SERA airspace classification will impose changes;
- How the changes introduced are going to affect the related national legislations and how the implementation can be carried out;
- To which extend the access of some airspace users to certain portions of the airspace will be affected and whether the newly introduced tools in SERA Part B will allow to mitigate the issues through new procedures;
- What resources including training would be needed for the implementation of the new procedures, etc.

85. This kind of survey would presumably request both time and resources and having in mind the tight timeframe for SERA drafting, it is not considered feasible and thus a credible quantitative assessment is hardly possible.

i. Safety

86. To properly evaluate the overall safety impact of an IR and its CSs, AMC and GM, the full set of the legislation package is needed. In this particular case SERA Part B introduces into the EU legislation only the transposed provisions from ICAO Annex 3 and Annex 11, which are considered to be of 'rules of the air' nature. SERA Part B complements SERA Part A which transposes the provisions from ICAO Annex 2. Moreover, further work with regard to the development of SERA IR is to follow, transposing relevant provisions from ICAO Annex 10, PANS-ATM, PANS-OPS and other documents into the EU legislation and applicable implementing measures. In fact, the full legislative set could be considered complete when all IRs as described in the section 'Rule structure' are adopted. For that reason, an overall safety impact assessment of the proposed SERA Part B IR (as the Agency uses to perform for other Agency's proposal) cannot be carried out at this stage. However, it is important to highlight that once all the relevant measures (Implementing Rules, Acceptable Means of Compliance and Guidance Material) are in place and implemented the overall safety impact is considered to be positive since there will be uniform implementation of the ICAO SARPs and recommended practices in the European airspace against today's situation.
87. As already explained, it cannot be expected that a full set of harmonised European rules can be prepared at the same time. This is also recognised by the European Commission in the SERA Mandate which foresees a phased approach in the SERA IR development.
88. The phased approach led to the fact that the SERA Part A was developed not following the Agency's rulemaking procedure. The delivery to the European Commission was done by EUROCONTROL with its 'Final Report for the Draft Implementing Rule on the development of the Standardised European rules of the Air'. The safety assessment relevant to SERA Part A was also developed by EUROCONTROL as a part of EUROCONTROL's final report. As a logical continuation of the SERA Part A safety assessment, the safety assessment for the draft SERA Part B has been developed following the same methodology that was used for the development of the SERA Part A safety assessment. The summary of this safety assessment is provided in Appendix III to this NPA. It shall be noted that the safety assessment, due to the reasons mentioned above, is more of qualitative nature rather than of quantitative one.

ii. Economic

89. At this stage, the costs include mostly those costs associated with dissemination of information, training and familiarisation of air navigation service providers and airspace users with the Rule. However, it is considered to be 'one shot' costs to change the rules the first time. After that, a reduction of the on-going costs is expected thanks to harmonisation. However, it should also be highlighted that due to the lack of available data from each and every EU Member State, the evaluation of the economic impact assessment is only qualitative.
90. The effect in the various areas of the European airspace could be:
- no change, where national rules are already fully in compliance with SERA Part B;
 - modification of some national rules so as to comply with SERA Part B;
 - none of the Member States will have to put efforts on transposing amendments of ICAO Annex 11, since it will be done in the IRs.
91. The scale of the impact will depend upon:
- national costs associated with meeting regulatory requirements for undertaking national safety assessments of changes (if any) associated with implementing SERA Part B;
 - the number and scope of differences identified between SERA Part B and national rules;
 - the extent of changes (if any) to operational procedures necessitated in any Member State; and
 - the scale of risk mitigation measures (if any) required by the safety assessment that needs to be carried out locally.

92. The costs of the SERA Part B Implementing Rule may comprise:
- the costs of dissemination of information, training and familiarisation with the SERA IR;
 - the costs of the changes to operational procedures;
 - the costs of risk mitigation measures (if any) required by the safety assessment that needs to be carried out locally.
93. The impact on regulators, air navigation service providers (ANSPs) and aircraft operators will clearly depend on the extent to which their national rules diverge from the SERA Part B. The involvement of ANSPs and aircraft operators will comprise the dissemination of information on any rule change to their staff, training their staff as appropriate and implementing any changes to operational procedures that are required. Competent authorities will have to ensure that their staff are aware of any changes to the rules within their own airspace and to ensure compliance of ANSPs, airport operators and aircraft operators with the amended rules. Establishing an appropriate transition period for the entry into force of the SERA Part B rules could make such an impact minor.

Regulators

94. Regulators will initially need to be assured that the required changes to the rules have been implemented, which will involve a cost (e.g. inspectors). Thereafter, the costs of ensuring compliance with any amended rules will not differ from the existing costs of ensuring compliance with the current rules. It is possible that in some States there will be the need to amend the national legislation accordingly affected by the provisions of SERA Part B.
95. In some particular cases some cost may come from the need to introduce changes in the airspace classification and thus need to amend all relevant maps and publications.

ANSPs

96. All ANSPs should already have in place the necessary procedures to ensure that the appropriate information is fully disseminated to all the necessary personnel. Whilst there will be some administrative impact, given the changes required for each ANSP, the use of these existing procedures to implement the SERA Part B should not have a significant effect on ANSP costs.
97. With regard to training, whilst there may be some minor costs relating to the update of training materials, the cost of training courses when the new rules are in place shouldn't be different to the present cost to keep the personnel competent. Training costs could be increased only in the States where airspace classification needs to be amended and also ATS procedures have to be amended accordingly. In any case the cost of changes to the operational procedures to support the implementation of SERA Part B can only be estimated locally.

Aircraft operators

98. Existing routine procedures for pilot briefing required by EU or national regulations cover the dissemination of information on the proposed Rule. Therefore, this process should be capable of being handled within the current procedures with minimal effect on costs.
99. With regard to training and examinations, as with the ANSPs, whilst there may be some minor costs relating to the update of training material, the costs of training when the new rules are in place can only be estimated locally.
100. In some particular cases, when the regulator implements RMZ and/or TMZ in airspace class G, F and E, a limited population of aircraft used for general aviation may require additional equipment but the cost estimation can only be done locally by those States implementing this measures.

iii. Environmental

101. None or minor environmental impact is expected.

iv. Social

102. No social impact is expected.

v. Other aviation requirements outside the EASA or SES scope

103. No other requirements outside the EASA or SES scope. However, it has to be recognised that while military aircraft operations and military service providers providing services mainly to OAT are out of the scope of SES or EASA Basic Regulation, the implementation of these provisions at EU level could potentially have some implications on their activities but cannot be estimated with the available information.

Summary and final assessment

a. Comparison of the positive and negative impacts for each option evaluated

104. As it is mentioned above, the possibility for choosing the options on how to proceed with the development of SERA Part B was limited. For this reason, this RIA cannot make a comparative analysis for the impact of each option but it is concentrated on the evaluation of the positive and negative impacts of the selected option 'transposing rules of the air provisions from ICAO Annexes, other than Annex 2'.

a.1 Positive impacts:

- Uniform implementation of standardised European rules of the air within the scope of the Basic Regulation and SES.
- Single regulation covering requirements, relevant to the rules of the air from ICAO Annexes, and transposing rules of the air provisions from ICAO Annexes, other than Annex 2.
- Airspace users will not have to follow each Member State's specific transposition of the ICAO SARPs, related to the rules of the air.
- Reduced inconvenience and risks of misunderstanding caused by varying national sets of rules of the air and different airspace classification.
- Supports Member States by providing a uniform and compliant implementation of ICAO SARPs. None of the Member States will have to put efforts on transposing amendments to the relevant provisions in ICAO Annex 11 and Annex 3 in the future, since it will be done centralised at European level through the relevant rulemaking tasks.
- Harmonises the implementation of ICAO airspace classification.
- Harmonises the provisions related to special VFR and provides unambiguous conditions for its implementation.
- Provides tools to the Member States to enhance safety in those parts of the airspace where it is felt necessary by establishing Radio Mandatory Zone (RMZ) and Transponder Mandatory Zones (TMZ). In this way the Member States are enabled to accommodate the ICAO airspace classification in accordance with their specific needs.

a.2 Negative impacts:

- As already mentioned, the principle retained for the impact assessment is to limit the scope to the general issues because it cannot enter into the detailed aspects of implementation or the national specificities of the implementation of the draft SERA Part B. Moreover, due to the tight timescale, extensive survey of the specific MS implementation of the SERA Part B provisions was not conducted.
- Possible negative impact is the cost associated to the implementation of the SERA Part B with regard to training the personnel and change in the procedures.

- b. Final assessment and recommendation of a preferred option
105. The adoption of uniform rules of the air transposing provisions from ICAO Annexes other than Annex 2 implies costs which will depend on the previously existing situation within the Member States.
 106. Where changes are required, there should already be procedures in place, in the relevant Safety and change management systems, for the dissemination of information to the appropriate people and the incremental cost of including information of these proposed rules changes in this process should be minimal.
 107. In the case of training, whilst there may be some costs involved in the modification of the training material, the costs of training when the new rules are in place can only be estimated locally.
 108. A final regulatory impact assessment will have to be conducted after the consultation period and it will be provided to the European Commission together with the Agency's Opinion.
 109. Where more significant changes are required, especially connected with the introduction of new airspace classification and/or TMZ and RMZ, the associated cost will increase accordingly but it cannot be evaluated at the present moment.
 110. However, the potential negative impact associated to potential increase of the cost for some Member States, which have implemented Annex 11 and Annex 3 with some differences, should be compensated by the overall positive safety impact since there will be uniform implementation of the ICAO SARPs and recommended practices in the European airspace, once all the relevant measures (Implementing Rules, Acceptable Means of Compliance and Guidance Material) are adopted and implemented. Moreover, none of the Member States will have to put efforts on transposing amendments of ICAO Annex 11 and Annex 3, since it will be done in the IRs.
 111. Moreover, it is also important to highlight the positive impact associated with the implementation of the draft SERA Part B IR which will support the free movement of aircraft across Europe's borders will support Member States in their efforts to keep high safety levels as well as the implementation of Functional Airspace Blocks.

B. Draft Opinion

I. Draft Opinion SERA Part B

- A. Proposed amendment to Commission Regulation (EU) No XXX/2010 of [...] laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Regulations (EC) No 2096/2005, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010:

Amend article 2 as follows:

1. 'aircraft observation' means the evaluation of one or more meteorological elements made from an aircraft in flight.
2. 'aircraft operator' means a person, organisation or enterprise engaged in or offering to engage in an aircraft operation.
3. 'AIRMET information' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.
4. 'air-report' means a report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting.
5. 'air traffic control instruction' means directives issued by air traffic control for the purpose of requiring a pilot to take a specific action.
6. 'automatic terminal information service (ATIS)' means the automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:
 - a. Data link-automatic terminal information service (D-ATIS) means the provision of ATIS via data link.
 - b. Voice-automatic terminal information service (Voice-ATIS) means the provision of ATIS by means of continuous and repetitive voice broadcasts.
7. 'clearance limit' means the point to which an aircraft is granted an air traffic control clearance.
8. 'downstream clearance' means a clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft.
9. 'forecast' means a statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.
10. 'radio mandatory zone (RMZ)' means an airspace of defined dimensions wherein the carriage and operation of radio equipment is mandatory.
11. 'radio navigation service' means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids
12. 'runway visual range (RVR)' means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.
13. 'SIGMET information' means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-

route weather phenomena which may affect the safety of aircraft operations.

14. 'strayed aircraft' means an aircraft which has deviated significantly from its intended track or which reports that it is lost.
15. 'traffic information' means information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.
16. 'transfer of control point' means a defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next.
17. 'transponder mandatory zone (TMZ)' means an airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory.
18. 'unidentified aircraft' means an aircraft which has been observed or reported to be operating in a given area but whose identity has not been established.

Amend Annex as follows:

Part B – Requirements regarding Services in Air Navigation

Chapter 1 – Air Traffic Services

1.1 General

1.1.1 Objectives of the air traffic services

1.1.1.1 The objectives of the air traffic services shall be to:

- a) prevent collisions between aircraft;
- b) prevent collisions between aircraft on the manoeuvring area and obstructions on that area;
- c) expedite and maintain an orderly flow of air traffic;
- d) provide advice and information useful for the safe and efficient conduct of flights;
- e) notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required.

1.1.2 Coordination between the aircraft operator and air traffic services

1.1.2.1 Air traffic services units, in carrying out their objectives, shall have due regard for the requirements of the aircraft operators consequent on their obligations as specified in the relevant European rules on Air Operations, and, if so required by the aircraft operators, shall make available to them or their designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.

1.1.2.2 When so requested by an aircraft operator, messages (including position reports) received by air traffic services units and relating to the operation of the aircraft for which operational control service is provided by that aircraft operator shall, so far as practicable, be made available immediately to the aircraft operator or a designated representative in accordance with locally agreed procedures.

1.1.3 Time in air traffic services

1.1.3.1 Aerodrome control towers shall, prior to an aircraft taxiing for take-off, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources. Air traffic services units shall, in addition, provide aircraft with the correct time on request. Time checks shall be given to the nearest half minute.

1.2 Classification of airspaces

1.2.1 States shall, as appropriate to their needs, designate airspace in accordance with the following airspace classification as defined below and in accordance with Appendix 1:

Class A. IFR flights only are permitted, all flights are provided with air traffic control service and are separated from each other. Continuous air-ground voice communications are required for all flights. All flights shall be subject to ATC clearance.

Class B. IFR and VFR flights are permitted, all flights are provided with air traffic control service and are separated from each other. Continuous air-ground voice communications are required for all flights. All flights shall be subject to ATC clearance.

Class C. IFR and VFR flights are permitted, all flights are provided with air traffic control service and IFR flights are separated from other IFR flights and from VFR flights. VFR flights are separated from IFR flights and receive traffic information in respect of other VFR flights and traffic avoidance advice on request. Continuous air-ground voice communications are required for all flights. For VFR flights a speed limitation of 250 kts IAS applies below 3 050 m (10 000 ft) AMSL. All flights shall be subject to ATC clearance.

Class D. IFR and VFR flights are permitted and all flights are provided with air traffic control service, IFR flights are separated from other IFR flights, receive traffic information in respect of VFR flights and traffic avoidance advice on request. VFR flights receive traffic information in respect of all other flights and traffic avoidance advice on request. Continuous air-ground voice communications are required for all flights and a speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL. All flights shall be subject to ATC clearance.

Class E. IFR and VFR flights are permitted; IFR flights are provided with air traffic control service and are separated from other IFR flights. All flights receive traffic information as far as is practical. Continuous air-ground voice communications are required for IFR flights. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL. All IFR flights shall be subject to ATC clearance. Class E shall not be used for control zones.

Class F. IFR and VFR flights are permitted, all participating IFR flights receive an air traffic advisory service and all flights receive flight information service if requested. Continuous air-ground voice communications are required for IFR flights participating in the advisory service and all IFR flights shall be capable of establishing air-ground voice communications. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL. ATC clearance is not required.

Class G. IFR and VFR flights are permitted and receive flight information service if requested. All IFR flights shall be capable of establishing air-ground voice communications. A speed limitation of 250 kts IAS applies to all flights below 3 050 m (10 000 ft) AMSL. ATC clearance is not required.

1.2.2 Implementation of Class F shall be considered as a temporary measure until such time as it can be replaced by alternative classification. Such temporary application of advisory service shall not exceed 3 years.

1.3 Requirements for communications and SSR transponder

1.3.1 Radio Mandatory Zone (RMZ)

1.3.1.1 VFR flights operating in parts of classes E, F or G airspace and IFR flights operating in parts of classes F or G airspace, designated as a radio mandatory zone (RMZ) by the competent authority, shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel.

1.3.1.2 Before entering a radio mandatory zone an initial call containing the designation of the station being called, call sign, type of aircraft, position, level, the intentions of the flight and other information as prescribed by the competent authority, shall be made by pilots on the appropriate communication channel.

1.3.2 Transponder Mandatory Zone (TMZ)

1.3.2.1 For all flights operating in the airspace designated by the competent authority as a transponder mandatory zone (TMZ) in accordance with relevant Union and national rules, the mandatory carriage and operation of SSR transponders capable of operating on Modes A and C or on Mode S shall be required.

1.3.3 Airspaces designated as Radio Mandatory Zone and/or Transponder Mandatory Zone shall be duly promulgated in the Aeronautical Information Publications.

1.4 Service to aircraft in the event of an emergency

1.4.1 In the case of an aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, air traffic services units shall give the aircraft maximum consideration, assistance and priority over other aircraft as may be necessitated by the circumstances.

1.4.2 When an occurrence of unlawful interference with an aircraft takes place or is suspected, air traffic services units shall attend promptly to requests by the aircraft. Information pertinent to the safe conduct of the flight shall continue to be transmitted and necessary action shall be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.

1.4.3 When an occurrence of unlawful interference with an aircraft takes place or is suspected, air traffic services units shall, in accordance with locally agreed procedures, immediately inform the appropriate authority designated by the State and exchange necessary information with the aircraft operator or its designated representative.

1.5 In-flight contingencies

1.5.1 Strayed or unidentified aircraft

1.5.1.1 As soon as an air traffic services unit becomes aware of a strayed aircraft it shall take all necessary steps as outlined in 1.5.1.1.1 and 1.5.1.1.3 to assist the aircraft and to safeguard its flight.

1.5.1.1.1 If the aircraft's position is not known, the air traffic services unit shall:

- a) attempt to establish two-way communication with the aircraft, unless such communication already exists;
- b) use all available means to determine its position;

- c) inform other air traffic services units into whose area the aircraft may have strayed or may stray, taking into account all the factors which may have affected the navigation of the aircraft in the circumstances;
- d) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft;
- e) request from the units referred to in c) and d) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

1.5.1.1.2 The requirements in d) and e) shall apply also to air traffic services units informed in accordance with c).

1.5.1.1.3 When the aircraft's position is established, the air traffic services unit shall:

- a) advise the aircraft of its position and corrective action to be taken. This advice shall be immediately provided when ATS is aware that there is a possibility of interception or other hazard to the safety of the aircraft; and
- b) provide, as necessary, other air traffic services units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.

1.5.1.2 As soon as an air traffic services unit becomes aware of an unidentified aircraft in its area, it shall endeavour to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures. To this end, the air traffic services unit shall take such of the following steps as are appropriate in the circumstances:

- a) attempt to establish two-way communication with the aircraft;
- b) inquire of other air traffic services units within the flight information region about the flight and request their assistance in establishing two-way communication with the aircraft;
- c) inquire of air traffic services units serving the adjacent flight information regions about the flight and request their assistance in establishing two-way communication with the aircraft;
- d) attempt to obtain information from other aircraft in the area.

1.5.1.2.1 The air traffic services unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

1.5.1.3 In the case of a strayed or unidentified aircraft, the possibility of the aircraft being subject of unlawful interference shall be taken into account. Should the air traffic services unit consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authority designated by the State shall immediately be informed, in accordance with locally agreed procedures.

1.5.2 Interception of civil aircraft

1.5.2.1 As soon as an air traffic services unit learns that an aircraft is being intercepted in its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:

- a) attempt to establish two-way communication with the intercepted aircraft via any means available, including the emergency radio frequency 121.5 MHz, unless such communication already exists;
- b) inform the pilot of the intercepted aircraft of the interception;
- c) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
- d) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
- e) in close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft;
- f) inform air traffic services units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions.

1.5.2.2 As soon as an air traffic services unit learns that an aircraft is being intercepted outside its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:

- a) inform the air traffic services unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with 1.5.2.1;
- b) relay messages between the intercepted aircraft and the appropriate air traffic services unit, the intercept control unit or the intercepting aircraft.

Chapter 2 – Air Traffic Control Service

2.1 Application

2.1.1 Air traffic control service shall be provided:

- a) to all IFR flights in airspace Classes A, B, C, D and E;
- b) to all VFR flights in airspace Classes B, C and D;
- c) to all special VFR flights;
- d) to all aerodrome traffic at controlled aerodromes.

2.2 Operation of air traffic control service

2.2.1 In order to provide air traffic control service, an air traffic control unit shall:

- a) be provided with information on the intended movement of each aircraft, or variations therefrom, and with current information on the actual progress of each aircraft;
- b) determine from the information received, the relative positions of known aircraft to each other;

- c) issue clearances and information for the purpose of preventing collision between aircraft under its control and of expediting and maintaining an orderly flow of traffic;
- d) coordinate clearances as necessary with other units:
 - 1) whenever an aircraft might otherwise conflict with traffic operated under the control of such other units;
 - 2) before transferring control of an aircraft to such other units.

2.2.2 Clearances issued by air traffic control units shall provide separation:

- a) between all flights in airspace Classes A and B;
- b) between IFR flights in airspace Classes C, D and E;
- c) between IFR flights and VFR flights in airspace Class C;
- d) between IFR flights and special VFR flights;
- e) between special VFR flights unless otherwise prescribed by the competent authority;

except that, when requested by an aircraft and agreed by the pilot of the other aircraft and if so prescribed by the competent authority for the cases listed under b) above in airspace Classes D and E, a flight may be cleared without separation being so provided in respect of a specific portion of the flight below 3050 M (10 000 ft) during climb or descent, during day in visual meteorological conditions.

2.2.3 Separation by an air traffic control unit shall be obtained by at least one of the following:

- a) vertical separation, obtained by assigning different levels selected from the table of cruising levels in Appendix 2 to Annex I of this Regulation, except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control clearances;
- b) horizontal separation, obtained by providing:
 - 1) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or
 - 2) lateral separation, by maintaining aircraft on different routes or in different geographical areas.

2.3 Separation minima

2.3.1 The selection of separation minima for application within a given portion of airspace shall be as follows:

- a) the selection of separation minima shall be done in accordance with the provisions adopted under the Chicago Convention as applicable under the prevailing circumstances. The Commission shall propose measures with regards to the selection of separation minima.
- b) the selection of separation minima shall be made in consultation between the entities responsible for the provision of air traffic services in neighbouring airspace, and approved by the competent authorities concerned, when:
 - 1) traffic will pass from one into the other of the neighbouring airspaces;

- 2) routes are closer to the common boundary of the neighbouring airspaces than the separation minima applicable in the circumstances.

2.3.2 Details of the selected separation minima and of their areas of application shall be notified:

- a) to the air traffic services units concerned; and
- b) to pilots and aircraft operators through aeronautical information publications, where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.

2.4 Air traffic control clearances

2.4.1 Air traffic control clearances shall be based solely on the requirements for providing air traffic control service.

2.4.2 Contents of clearances

2.4.2.1 An air traffic control clearance shall indicate:

- a) aircraft identification as shown in the flight plan;
- b) clearance limit;
- c) route of flight;
- d) level(s) of flight for the entire route or part thereof and changes of levels if required;
- e) any necessary instructions or information on other matters such as approach or departure manoeuvres, communications and the time of expiry of the clearance.

2.4.3 Clearances for transonic flight

2.4.3.1 The air traffic control clearance relating to the transonic acceleration phase of a supersonic flight shall extend at least to the end of that phase.

2.4.3.2 The air traffic control clearance relating to the deceleration and descent of an aircraft from supersonic cruise to subsonic flight shall provide for uninterrupted descent during the transonic phase.

2.4.4 Read-back of clearances and safety-related information

2.4.4.1 The flight crew shall read back to the air traffic controller safety-related parts of ATC clearances and instructions which are transmitted by voice. The following items shall always be read back:

- a) ATC route clearances;
- b) clearances and instructions to enter, land on, take off from, hold short of, cross and backtrack on any runway; and
- c) runway-in-use, altimeter settings, SSR codes, newly assigned communication channels, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.

2.4.4.1.1 Other clearances or instructions, including conditional clearances and taxi instructions, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.

2.4.4.1.2 The controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the read-back.

2.4.4.2 Voice read-back of CPDLC messages shall not be required, unless otherwise prescribed by the competent authority.

2.4.5 Coordination of clearances

2.4.5.1 An air traffic control clearance shall be coordinated between air traffic control units to cover the entire route of an aircraft or a specified portion thereof as follows.

2.4.5.1.1 An aircraft shall be cleared for the entire route to the aerodrome of first intended landing:

- a) when it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or
- b) when there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

2.4.5.2 When coordination as in 2.4.5.1.1 has not been achieved or is not anticipated, the aircraft shall be cleared only to that point where coordination is reasonably assured; prior to reaching such point, or at such point, the aircraft shall receive further clearance, holding instructions being issued as appropriate.

2.4.5.2.1 When prescribed by the ATS unit, aircraft shall contact a downstream air traffic control unit, for the purpose of receiving a downstream clearance prior to the transfer of control point.

2.4.5.2.1.1 Aircraft shall maintain the necessary two-way communication with the current air traffic control unit whilst obtaining a downstream clearance.

2.4.5.2.1.2 A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.

2.4.5.2.1.3 Unless coordinated, downstream clearances shall not affect the aircraft's original flight profile in any airspace, other than that of the air traffic control unit responsible for the delivery of the downstream clearance.

2.4.5.3 When an aircraft intends to depart from an aerodrome within a control area to enter another control area within a period of thirty minutes, or such other specific period of time as has been agreed between the area control centres concerned, coordination with the subsequent area control centre shall be effected prior to issuance of the departure clearance.

2.4.5.4 When an aircraft intends to leave a control area for flight outside controlled airspace, and will subsequently re-enter the same or another control area, a clearance from point of departure to

the aerodrome of first intended landing may be issued. Such clearance or revisions thereto shall apply only to those portions of the flight conducted within controlled airspace.

2.5 Control of persons and vehicles at aerodromes

2.5.1 The movement of persons or vehicles including towed aircraft on the manoeuvring area of an aerodrome shall be controlled by the aerodrome control tower as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off.

2.5.2 In conditions where low visibility procedures are in operation:

- a) persons and vehicles operating on the manoeuvring area of an aerodrome shall be restricted to the essential minimum, and particular regard shall be given to the requirements to protect the ILS/MLS sensitive area(s) when Category II or Category III precision instrument operations are in progress;
- b) subject to the provisions in 2.5.3, the minimum separation between vehicles and taxiing aircraft shall be as approved by the competent authority taking into account the aids available;
- c) when mixed ILS and MLS Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive ILS or MLS critical and sensitive areas shall be protected.

2.5.3 Emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic.

2.5.4 Subject to the provisions in 2.5.3, vehicles on the manoeuvring area shall be required to comply with the following rules:

- a) vehicles and vehicles towing aircraft shall give way to aircraft which are landing, taking off or taxiing;
- b) vehicles shall give way to other vehicles towing aircraft;
- c) vehicles shall give way to other vehicles in accordance with air traffic services unit instructions;
- d) notwithstanding the provisions of a), b) and c), vehicles and vehicles towing aircraft shall comply with instructions issued by the aerodrome control tower.

2.6 Special VFR in control zones

2.6.1 Special VFR flights may be authorized to operate within a control zone, subject to an ATC clearance. Except when permitted by the competent authority for helicopters in special cases such as medical flights, search and rescue operations and fire-fighting, the following additional conditions shall be applied:

- a) by ATC:
 - i) during day only;

- ii) the ground visibility is not less than 1 500 m or, for helicopters, not less than 800 m;
 - iii) the ceiling is not less than 180 m (600 ft); and
- b) by the pilot:
- i) clear of cloud and with the surface in sight;
 - ii) the flight visibility is not less than 1 500 m or, for helicopters, not less than 800 m;
 - iii) at speed of 140 kts IAS or less to give adequate opportunity to observe other traffic and any obstacles in time to avoid a collision;

Chapter 3 – Flight Information Service

3.1 Application

3.1.1 Flight information service shall be provided by the appropriate air traffic services units to all aircraft which are likely to be affected by the information and which are:

- a) provided with air traffic control service; or
- b) otherwise known to the relevant air traffic services units.

3.1.2 The reception of flight information service does not relieve the pilot-in-command of an aircraft of any responsibilities and the pilot-in-command shall make the final decision regarding any suggested alteration of flight plan.

3.1.3 Where air traffic services units provide both flight information service and air traffic control service, the provision of air traffic control service shall have precedence over the provision of flight information service whenever the provision of air traffic control service so requires.

3.2 Scope of flight information service

3.2.1 Flight information service shall include the provision of pertinent:

- a) SIGMET and AIRMET information;
- b) information concerning pre-eruption volcanic activity, volcanic eruptions and volcanic ash clouds;
- c) information concerning the release into the atmosphere of radioactive materials or toxic chemicals;
- d) information on changes in the availability of radio navigation services;
- e) information on changes in condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow, ice or significant depth of water;
- f) information on unmanned free balloons;

and of any other information likely to affect safety.

3.2.2 Flight information service provided to flights shall include, in addition to that outlined in 3.2.1, the provision of information concerning:

- a) weather conditions reported or forecast at departure, destination and alternate aerodromes;
- b) collision hazards, to aircraft operating in airspace Classes C, D, E, F and G;
- c) for flight over water areas, in so far as practicable and when requested by a pilot, any available information such as radio call sign, position, true track, speed, etc., of surface vessels in the area.

3.2.3 Flight information service provided to VFR flights shall include, in addition to that outlined in 3.2.1, the provision of available information concerning traffic and weather conditions along the route of flight that are likely to make operation under the visual flight rules impracticable.

3.3 Automatic Terminal Information Service (ATIS)

3.3.1 Use of the ATIS messages in directed request/reply transmissions

3.3.1.1 When requested by the pilot, the applicable ATIS message(s) shall be transmitted by the appropriate air traffic services unit.

3.3.1.2 Whenever Voice-ATIS and/or D-ATIS is provided the appropriate air traffic services unit shall, when replying to an aircraft acknowledging receipt of an ATIS message or, in the case of arriving aircraft, at such other time as may be prescribed by the competent authority, provide the aircraft with the current altimeter setting.

3.3.1.3 Information contained in a current ATIS, the receipt of which has been acknowledged by the aircraft concerned, need not be included in a directed transmission to the aircraft, with the exception of the altimeter setting, which shall be provided in accordance with 3.3.1.2.

3.3.1.4 If an aircraft acknowledges receipt of an ATIS that is no longer current, any element of information that needs updating shall be transmitted to the aircraft without delay.

3.3.2 ATIS for arriving and departing aircraft

3.3.2.1 ATIS messages containing both arrival and departure information shall contain the following elements of information in the order listed:

- a) name of aerodrome;
- b) arrival and/or departure indicator;
- c) contract type, if communication is via D-ATIS;
- d) designator;
- e) time of observation, if appropriate;
- f) type of approach(es) to be expected;
- g) the runway(s) in use; status of arresting system constituting a potential hazard, if any;
- h) significant runway surface conditions and, if appropriate, braking action;
- i) holding delay, if appropriate;

- j) transition level, if applicable;
- k) other essential operational information;
- l) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
- *m) visibility and, when applicable, RVR;
- *n) present weather;
- *o) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;
- p) air temperature;
- q) dew point temperature;
- r) altimeter setting(s);
- s) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
- t) trend forecast, when available; and
- u) specific ATIS instructions.

3.3.3 ATIS for arriving aircraft

3.3.3.1 ATIS messages containing arrival information only shall contain the following elements of information in the order listed:

- a) name of aerodrome;
- b) arrival indicator;
- c) contract type, if communication is via D-ATIS;
- d) designator;
- e) time of observation, if appropriate;
- f) type of approach(es) to be expected;
- g) main landing runway(s); status of arresting system constituting a potential hazard, if any;
- h) significant runway surface conditions and, if appropriate, braking action;
- i) holding delay, if appropriate;
- j) transition level, if applicable;
- k) other essential operational information;

* These elements are replaced by the term “CAVOK” when the following conditions occur simultaneously at the time of observation: a) visibility, 10 km or more, and the lowest visibility not reported; b) no cloud of operational significance; and c) no weather of significance to aviation.

- l) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
- *m) visibility and, when applicable, RVR;
- *n) present weather;
- *o) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;
- p) air temperature;
- q) dew point temperature;
- r) altimeter setting(s);
- s) any available information on significant meteorological phenomena in the approach area including wind shear, and information on recent weather of operational significance;
- t) trend forecast, when available; and
- u) specific ATIS instructions.

3.3.4 ATIS for departing aircraft

3.3.4.1 ATIS messages containing departure information only shall contain the following elements of information in the order listed:

- a) name of aerodrome;
- b) departure indicator;
- c) contract type, if communication is via D-ATIS;
- d) designator;
- e) time of observation, if appropriate;
- f) runway(s) to be used for take-off; status of arresting system constituting a potential hazard, if any;
- g) significant surface conditions of runway(s) to be used for take-off and, if appropriate, braking action;
- h) departure delay, if appropriate;
- i) transition level, if applicable;
- j) other essential operational information;
- k) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by aircraft operators, the indication of the runway and the section of the runway to which the information refers;
- *l) visibility and, when applicable, RVR;

* These elements are replaced by the term "CAVOK" when the following conditions occur simultaneously at the time of observation: a) visibility, 10 km or more, and the lowest visibility not reported; b) no cloud of operational significance; and c) no weather of significance to aviation.

- *m) present weather;
- *n) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;
- o) air temperature;
- p) dew point temperature;
- q) altimeter setting(s);
- r) any available information on significant meteorological phenomena in the climb-out area including wind shear;
- s) trend forecast, when available; and
- t) specific ATIS instructions.

Chapter 4 – Alerting Service

4.1 Application

4.1.1 Alerting service shall be provided by the air traffic services units:

- a) for all aircraft provided with air traffic control service;
- b) in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and
- c) to any aircraft known or believed to be the subject of unlawful interference.

4.2 Information to aircraft operating in the vicinity of an aircraft in a state of emergency

4.2.1 When it has been established by an air traffic services unit that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved shall, except as provided in 4.2.2, be informed of the nature of the emergency as soon as practicable.

4.2.2 When an air traffic services unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall be made in ATS air-ground communications to the nature of the emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

Chapter 5 – Services Related to Meteorology – Aircraft Observations and Reports

5.1 Types of aircraft observations

5.1.1 The following aircraft observations shall be made:

- a) routine aircraft observations during by air-ground data link en-route and climb-out phases of the flight; and
- b) special and other non-routine aircraft observations during any phase of the flight.

5.2 Routine aircraft observations by air-ground data link

5.2.1 Automated routine aircraft observations shall be made by all aircraft and shall include:

- a) wind direction and wind speed;
- b) wind quality flag;
- c) air temperature;
- d) turbulence (if available); and
- e) humidity (if available).

5.2.2 Routine aircraft observations by air-ground data link shall be made at least every 15 minutes during the en-route phase and every 30 seconds during the climb-out phase for the first 10 minutes of the flight.

5.2.3 For helicopter operations to and from aerodromes on offshore structures, routine observations by air-ground data link shall be made from helicopters at points and times as agreed between the competent authority and the helicopter operators concerned.

5.2.4 Aircraft not equipped with air-ground data link shall be exempted from making routine aircraft observations.

5.3 Special aircraft observations

5.3.1 Special observations shall be made by all aircraft whenever the following conditions are encountered or observed:

- a) moderate or severe turbulence; or
- b) moderate or severe icing; or
- c) severe mountain wave; or
- d) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or
- e) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or
- f) heavy duststorm or heavy sandstorm; or
- g) volcanic ash cloud; or
- h) pre-eruption volcanic activity or a volcanic eruption.

5.3.2 In addition, competent authorities may determine other conditions which shall be reported by all aircraft when encountered or observed.

5.4 Other non-routine aircraft observations

5.4.1 When other meteorological conditions not listed under 5.3.1, e.g. wind shear, are encountered and which, in the opinion of the pilot-in-command, may affect the safety or markedly affect the efficiency of other aircraft operations, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable.

5.5 Reporting of aircraft observations during flight

5.5.1 Aircraft observations shall be reported by air-ground data link. Where air-ground data link is not available or appropriate, special and other non-routine aircraft observations during flight shall be reported by voice communications.

5.5.2 Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as is practicable.

5.5.3 Aircraft observations shall be reported as air-reports and shall comply with the technical specifications in Appendix 2.

5.6 Exchange of air-reports

5.6.1 ATS units shall transmit without delay routine air-reports by air-ground data link to the associated meteorological watch office and World Area Forecast Centre (WAFC).

5.6.2 ATS units shall transmit, as soon as practicable, special and non-routine air-reports to other aircraft concerned, to the associated meteorological watch office, and to other ATS units concerned. Transmissions to aircraft shall be continued for a period to be determined by the competent authorities.

APPENDIX 1 OF PART B - ATS AIRSPACE CLASSES — SERVICES PROVIDED AND FLIGHT REQUIREMENTS*(Chapter 1, 1.2.1 refers)*

<i>Class</i>	<i>Type of flight</i>	<i>Separation provided</i>	<i>Service provided</i>	<i>Speed limitation*</i>	<i>Radio communication capability requirement</i>	<i>Continuous two-way air-ground voice communication required</i>	<i>Subject to an ATC clearance</i>
A	IFR only	All aircraft	Air traffic control service	Not applicable	Yes	Yes	Yes
B	IFR	All aircraft	Air traffic control service	Not applicable	Yes	Yes	Yes
	VFR	All aircraft	Air traffic control service	Not applicable	Yes	Yes	Yes
C	IFR	IFR from IFR IFR from VFR	Air traffic control service	Not applicable	Yes	Yes	Yes
	VFR	VFR from IFR	1) Air traffic control service for separation from IFR; 2) VFR/VFR traffic information (and traffic avoidance advice on request)	250 kts IAS below 3050 m (10000 ft) AMSL	Yes	Yes	Yes
D	IFR	IFR from IFR	Air traffic control service, traffic information about VFR flights (and traffic avoidance advice on request)	250 kts IAS below 3050 m (10000 ft) AMSL	Yes	Yes	Yes
	VFR	Nil	IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)	250 kts IAS below 3050 m (10000 ft) AMSL	Yes	Yes	Yes

<i>Class</i>	<i>Type of flight</i>	<i>Separation provided</i>	<i>Service provided</i>	<i>Speed limitation*</i>	<i>Radio communication capability requirement</i>	<i>Continuous two-way air-ground voice communication required</i>	<i>Subject to an ATC clearance</i>
E	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 kts IAS below 3050 m (10000 ft) AMSL	Yes	Yes	Yes
	VFR	Nil	Traffic information as far as practical	250 kts IAS below 3050 m (10000 ft) AMSL	No**	No**	No
F	IFR	IFR from IFR as far as practical	Air traffic advisory service; flight information service	250 kts IAS below 3050 m (10000 ft) AMSL	Yes***	No***	No
	VFR	Nil	Flight information service	250 kts IAS below 3050 m (10000 ft) AMSL	No**	No**	No
G	IFR	Nil	Flight information service	250 kts IAS below 3050 m (10000 ft) AMSL	Yes**	No**	No
	VFR	Nil	Flight information service	250 kts IAS below 3050 m (10000 ft) AMSL	No**	No**	No
* When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 should be used in lieu of 10 000 ft.							
** Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.							

<i>Class</i>	<i>Type of flight</i>	<i>Separation provided</i>	<i>Service provided</i>	<i>Speed limitation*</i>	<i>Radio communication capability requirement</i>	<i>Continuous two-way air-ground voice communication required</i>	<i>Subject to an ATC clearance</i>
<p>*** Air-ground voice communications mandatory for flights participating in the advisory service. Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.</p>							

APPENDIX 2 of PART B
REQUIREMENTS REGARDING SERVICES
IN AIR NAVIGATION

TECHNICAL SPECIFICATIONS RELATED TO AIRCRAFT OBSERVATIONS
AND REPORTS

1. CONTENTS OF AIR-REPORTS

1.1 Routine air-reports by air-ground data link

1.1.1 When automatic dependent surveillance (ADS) or SSR Mode S is being applied, the elements contained in routine air-reports shall be:

Message type designator

Aircraft identification

Data block 1

Latitude

Longitude

Level

Time

Data block 2

Wind direction

Wind speed

Wind quality flag

Air temperature

Turbulence (if available)

Humidity (if available)

1.1.2 When ADS and SSR Mode S are not being applied, the elements contained in routine reports shall be:

Message type designator

Section 1 (Position information)

Aircraft identification
Position or latitude and longitude
Time
Flight level or altitude
Next position and time over
Ensuing significant point

Section 2 (Operational information)

Estimated time of arrival
Endurance

Section 3 (Meteorological information)

Air temperature
Wind direction
Wind speed
Turbulence
Aircraft icing
Humidity (if available)

1.2 Special air-reports by air-ground data link

1.2.1 When air-ground data link is used, the elements contained in special air-reports shall be:

Message type designator
Aircraft identification

Data block 1

Latitude
Longitude
Level
Time

Data block 2

Wind direction
Wind speed

Wind quality flag
Air temperature
Turbulence (if available)
Humidity (if available)

Data block 3

Condition prompting the issuance of a special air-report (one condition to be selected from the list presented in Table AP 2-1).

1.3 Special air-reports by voice communications

1.3.1 When voice communications are used, the elements contained in special air-reports shall be:

Message type designator

Section 1 (Position information)

Aircraft identification
Position or latitude and longitude
Time
Level or range of levels

Section 3 (Meteorological information)

Condition prompting the issuance of a special air-report, to be selected from the list presented in Table AP 2-1.

2. CRITERIA FOR REPORTING

2.1 General

2.1.1 When air-ground data link is used, the wind direction, wind speed, wind quality flag, air temperature, turbulence and humidity included in air-reports shall be reported in accordance with the following criteria.

2.2 Wind direction

2.2.1 The wind direction shall be reported in terms of degrees true, rounded to the nearest whole degree.

2.3 Wind speed

2.3.1 The wind speed shall be reported in metres per second or knots, rounded to the nearest 1 m/s (1 knot). The units of measurement used for the wind speed shall be indicated.

2.4 Wind quality flag

2.4.1 The wind quality flag shall be reported as 0 when the roll angle is less than 5 degrees and as 1 when the roll angle is 5 degrees or more.

2.5 Air temperature

2.5.1 The air temperature shall be reported to the nearest tenth of a degree Celsius.

2.6 Turbulence

2.6.1 The turbulence shall be reported in terms of the cube root of the eddy dissipation rate (EDR).

2.6.2 Routine air-reports

2.6.2.1 The turbulence shall be reported during the en-route phase of the flight and shall refer to the 15-minute period immediately preceding the observation. Both the average and peak value of turbulence, together with the time of occurrence of the peak value to the nearest minute, shall be observed. The average and peak values shall be reported in terms of the cube root of EDR. The time of occurrence of the peak value shall be reported as indicated in Table AP 2-2. The turbulence shall be reported during the climb-out phase for the first 10 minutes of the flight and shall refer to the 30-second period immediately preceding the observation. The peak value of turbulence shall be observed.

2.6.3 Interpretation of the turbulence report

2.6.3.1 Turbulence shall be considered:

- a) severe when the peak value of the cube root of EDR exceeds 0.7;
- b) moderate when the peak value of the cube root of EDR is above 0.4 and below or equal to 0.7;
- c) light when the peak value of the cube root of EDR is above 0.1 and below or equal to 0.4; and
- d) nil when the peak value of the cube root of EDR is below or equal to 0.1.

2.6.4 Special air-reports

2.6.4.1 Special air-reports on turbulence shall be made during any phase of the flight whenever the peak value of the cube root of EDR exceeds 0.4. The special air-report on

turbulence shall be made with reference to the 1-minute period immediately preceding the observation. Both the average and peak value of turbulence shall be observed. The average and peak values shall be reported in terms of the cube root of EDR. Special air-reports shall be issued every minute until such time as the peak values of the cube root of EDR fall below 0.4.

2.7 Humidity

2.7.1 The humidity shall be reported as the relative humidity, rounded to the nearest whole per cent.

3. SPECIFIC PROVISIONS RELATED TO REPORTING WIND SHEAR AND VOLCANIC ASH

3.1 Reporting of wind shear

3.1.1 When reporting aircraft observations of wind shear encountered during the climb-out and approach phases of flight, the aircraft type shall be included.

3.1.2 Where wind shear conditions in the climb-out or approach phases of flight were reported or forecast but not encountered, the pilot-in-command shall advise the appropriate air traffic services unit as soon as practicable unless the pilot-in-command is aware that the appropriate air traffic services unit has already been so advised by a preceding aircraft.

3.2 Post-flight reporting of volcanic activity

3.2.1 On arrival of a flight at an aerodrome, the completed report of volcanic activity shall be delivered by the aircraft operator or a flight crew member, without delay, to the aerodrome meteorological office, or if such office is not easily accessible to arriving flight crew members, the completed form shall be dealt with in accordance with local arrangements made by the meteorological authority and the aircraft operator.

3.2.2 The completed report of volcanic activity received by a meteorological office shall be transmitted without delay to the meteorological watch office responsible for the provision of meteorological watch for the flight information region in which the volcanic activity was observed.

Table AP 2-1. Template for the special air-report (downlink)

Key: M = inclusion mandatory, part of every message;
C = inclusion conditional; included whenever available.

<i>Element as specified in Chapter 5</i>	<i>Detailed content</i>	<i>Template(s)</i>	<i>Examples</i>
Message type designator (M)	Type of air-report (M)	ARS	ARS
Aircraft identification (M)	Aircraft radiotelephony call sign (M)	nnnnnn	VA812
DATA BLOCK 1			
Latitude (M)	Latitude in degrees and minutes (M)	Nnnnn or Snnnn	S4506
Longitude (M)	Longitude in degrees and minutes (M)	Wnnnnn or Ennnnn	E01056
Level (M)	Flight level (M)	FLnnn or FLnnn to FLnnn	FL330 FL280 to FL310
Time (M)	Time of occurrence in hours and minutes (M)	OBS AT nnnnZ	OBS AT 1216Z
DATA BLOCK 2			
Wind direction (M)	Wind direction in degrees true (M)	nnn/	262/
Wind speed (M)	Wind speed in metres per second (or knots) (M)	nnnMPS (or nnnKT)	40MPS (080KT)
Wind quality flag (M)	Wind quality flag (M)	n	1
Air temperature (M)	Air temperature in tenths of degrees C (M)	T[M]nnn	T127 TM455
Turbulence (C)	Turbulence in hundredths of m ² /3 s ⁻¹ and the time of occurrence of the peak value (C)1	EDRnnn/nn	EDR064/08
Humidity (C)	Relative humidity in per cent (C)	RHnnn	RH054
DATA BLOCK 3			
Condition prompting the issuance of a special		SEV TURB [EDRnnn]2 or	SEV TURB EDR076 VA CLD FL050/100

air-report (M)		SEV ICE <i>or</i> SEV MTW <i>or</i> TS GR3 <i>or</i> TS3 <i>or</i> HVY SS4 <i>or</i> VA CLD [FL nnn/nnn] <i>or</i> VA5 [MT nnnnnnnnnnnnnnnnnnnnnn] <i>or</i> MOD TURB [EDRnnn]2 <i>or</i> MOD ICE	
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Table AP 2-2. Time of occurrence of the peak value to be reported

<i>Peak value of turbulence occurring during the one-minute period minutes prior to the observation</i>	<i>Value to be reported</i>
0 – 1	
1 – 2	0
2 – 3	1
	2
...	...
13 – 14	13
14 – 15	14
No timing information available	15

Table AP 2 -3. Ranges and resolutions for the meteorological elements included in air-reports

<i>Element as specified in Chapter 5</i>	<i>Range</i>	<i>Resolution</i>
Wind direction: °true	000 – 360	1
Wind speed: MPS	00 – 125	1
KT	00 – 250	1
Wind quality flag: (index)*	0 – 1	1
Air temperature: °C	–80 – +60	0.1
Turbulence: routine air-report: m ² /3 s ⁻¹	0 – 2	0.01
(time of occurrence)*	0 – 15	1
Turbulence: special air-report: m ² /3 s ⁻¹	0 – 2	0.01
Humidity: %	0 – 100	1
* Non-dimensional		

Supplement to the Annex

List of commonly agreed differences to notify to ICAO in accordance with Article 4 of this Regulation:

PART B

Differences between Part B and the International Standards contained in Annexes 11 (13th edition, up to and including Amendment 47-B) and 3 (17th edition, up to and including Amendment 75) to the Convention on International Civil Aviation.

<p>Difference A11-01 ICAO Annex 11 Chapter 2</p>	<p>New provision. The Union regulation, paragraph 1.5.1.1.2, which is based on ICAO Annex 11, paragraph 2.24.1.1.1, Note, specifies: 1.5.1.1.2 The requirements in d) and e) shall apply also to air traffic services units informed in accordance with c).</p>
<p>Difference A11-02 ICAO Annex 11 Chapter 2</p>	<p>New provision. The Union regulation, paragraph 1.5.1.1.3, which is based on ICAO Annex 11, paragraph 2.24.1.1.2 and paragraph 2.24.1.1, Note, specifies: 1.5.1.1.3 When the aircraft's position is established, the air traffic services unit shall: a) advise the aircraft of its position and corrective action to be taken. This advice shall be immediately provided when ATS is aware that there is a possibility of interception or other hazard to the safety of the aircraft; and b) provide, as necessary, other air traffic services units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.</p>
<p>Difference A11-03 ICAO Annex 11 Chapter 2</p>	<p>New provision. The Union regulation, paragraph 1.5.1.3, which is based on ICAO Annex 11, paragraph 2.23.3, Note 1, and paragraph 2.24.1.3, specifies: 1.5.1.3 In the case of a strayed or unidentified aircraft, the possibility of the aircraft being subject of unlawful interference shall be taken into account. Should the air traffic services unit consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authority designated by the State shall immediately be informed, in accordance with locally agreed procedures.</p>

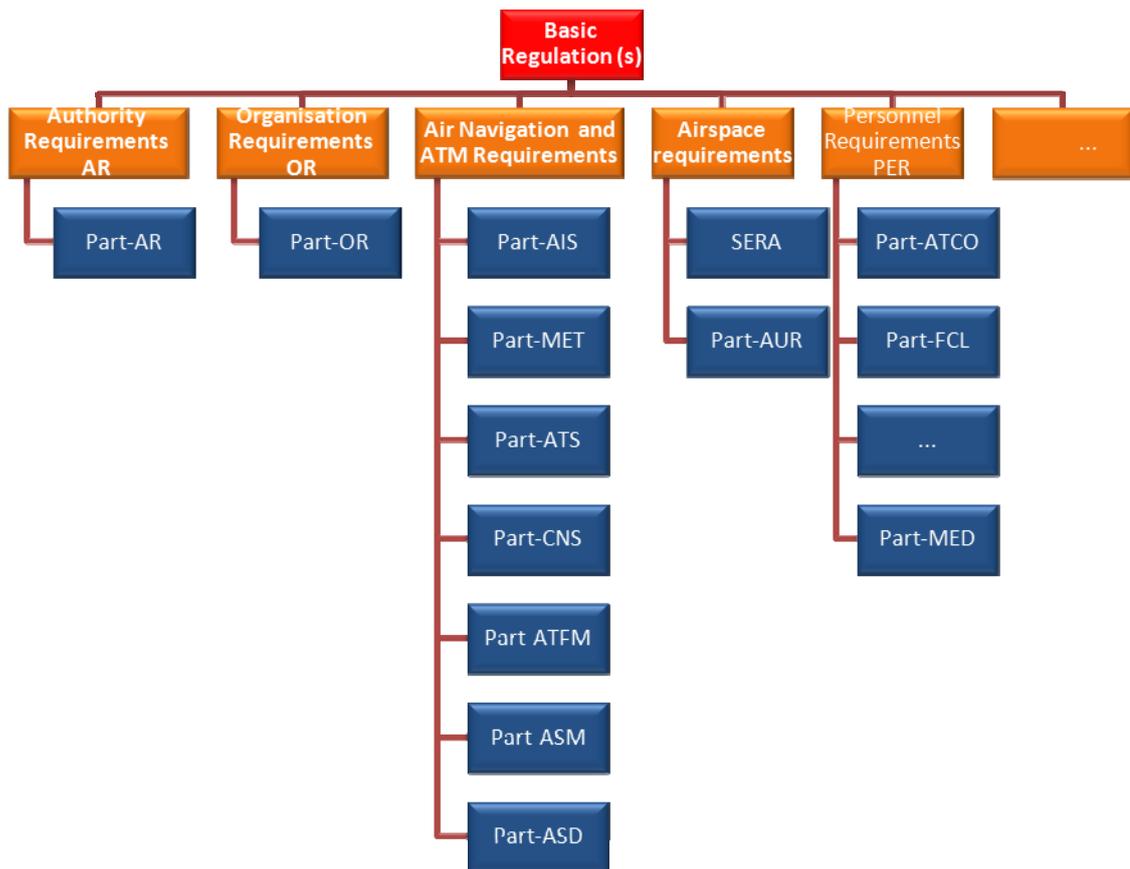
<p>Difference A11-04 ICAO Annex 11 Chapter 3</p>	<p>New provision. The Union regulation, paragraph 2.2.2, specifies:</p> <p>2.2.2 Clearances issued by air traffic control units shall provide separation:</p> <ul style="list-style-type: none"> a) between all flights in airspace Classes A and B; b) between IFR flights in airspace Classes C, D and E; c) between IFR flights and VFR flights in airspace Class C; d) between IFR flights and special VFR flights; e) between special VFR flights unless otherwise prescribed by the competent authority; <p>except that, when requested by an aircraft and agreed by the pilot of the other aircraft and if so prescribed by the competent authority for the cases listed under b) above in airspace Classes D and E, a flight may be cleared without separation being so provided in respect of a specific portion of the flight below 3050 M (10 000 ft) during climb or descent, during day in visual meteorological conditions.</p>
<p>Difference A11-05 ICAO Annex 11 Chapter 3</p>	<p>New provision. The Union regulation, paragraph 2.6, specifies:</p> <p>2.6 Special VFR in control zones</p> <p>2.6.1 Special VFR flights may be authorised to operate within a control zone, subject to an ATC clearance. Except when permitted by the competent authority for helicopters in special cases such as medical flights, search and rescue operations and fire-fighting, the following additional conditions shall be applied:</p> <ul style="list-style-type: none"> a) by ATC: <ul style="list-style-type: none"> i) during day only; ii) the ground visibility is not less than 1 500 m or, for helicopters, not less than 800 m; iii) the ceiling is not less than 180 m (600 ft); and b) by the pilot: <ul style="list-style-type: none"> i) clear of cloud and with the surface in sight; ii) the flight visibility is not less than 1 500 m or, for helicopters, not less than 800 m; <p>at speed of 140 kts IAS or less to give adequate opportunity to observe other traffic and any obstacles in time to avoid a collision;</p>

<p>Difference A11-06 ICAO Annex 11 Chapter 4</p>	<p>New provision. The Union regulation, paragraph 3.1.2, which is based on ICAO Annex 11, paragraph 4.1.1, Note , specifies:</p> <p>3.1.2 The reception of flight information service does not relieve the pilot-in-command of an aircraft of any responsibilities and the pilot-in-command shall make the final decision regarding any suggested alteration of flight plan.</p>
<p>Difference A3-01 ICAO Annex 3 Chapter 5</p>	<p>New provision. The Union regulation, paragraph 5.4.2, specifies:</p> <p>5.4.2 In addition, competent authorities may determine other conditions which shall be reported by all aircraft when encountered or observed.</p>

C. Appendices

I Snapshot of the proposed rule structure

Overview of Cover Regulations and Parts



112. Authority Requirements (AR): those are the requirements for competent authorities (National Supervisory Authorities (NSA), National Aviation Authorities (NAA) and the Agency, as applicable). For the field of ATM/ANS, these are required today in Regulation (EC) No 1315/2007 for the safety oversight functions of the NSA and in Regulation (EC) No 2096/2005 for the certification of ANSPs and their continuous monitoring. The concept would then be to integrate those requirements into this Part AR once adopted by the European Commission through commitology for the field of air operations and flight crew licensing
113. Organisation Requirements (OR) — requirements applicable to organisations (e.g. ANSPs). For the field of ATM/ANS, these requirements are those contained in Regulation (EC) No 2096/2005 complemented by some requirements from Regulation (EC) No 1315/2007 (requirements for reactions to findings by the NSA/competent authority and the requirements for the notification of changes to functional systems). The concept would then be to integrate these requirements into this Part once adopted by the European Commission through commitology for the field of air operations and flight crew licence.

114. Personnel Requirements (PER): those are requirements on personnel subject to licensing or certification scheme. Licensing of air traffic controllers is regulated today through the national regulations which are transposing the ATCO Directive. The ATCO Directive was transposed by the Agency into a draft Implementing Rule in its Opinion No 03/2010 to the European Commission. The aim would be the grouping of the relevant requirements into one single implementing rule dealing with personnel requirements subject to certification as follows:
- Part ATCO — Annex to the implementing rule on PER which is applicable to the licensing system of air traffic controllers.
 - Part-FCL — Annex to the implementing rule on PER which is applicable to the licensing system of pilots.
 - Part-MED — Annex to the implementing rule on PER which is applicable to the medical certification.
- There are and there will be other Annexes which are specific for other type of licensed or certificated personnel.
115. ATM and Air Navigation Regulation — The aim is to create a new proposed implementing rule that could contain those requirements related to air traffic management and air navigation services (e.g. Part ATS, Part-MET). For instance, those provisions from Annex 11 relevant to the ATS providers only should be included in Part ATS as well as those provisions which are only related to MET service providers should be included in Part-MET.
116. Airspace requirements should contain those requirements which are needed to be known and followed by users of the EU airspace. The intention would be to merge in the future the SERA provisions and also the requirements for the airspace usage as different annexes of the same regulation in the future:
- SERA — should include the requirements from SERA Part A, SERA Part B and SERA Part C, if applicable;
 - Part AUR — includes the airspace usage requirements that are being proposed in EASA Opinion No 05/2010¹¹.

II Drafting principles

1. Principles of allocation

- 1.1 In order to meet the SERA mandate requirements, and in particular to ensure that the total system approach is implemented in an organised and consistent way, the following principles should be applied when deciding on the allocation of candidate ICAO material to SERA or other EASA/SES rules:
- a) SERA should contain those provisions which require collective actions to ensure the correct outcome, i.e. joint procedures. This would then ensure a consistent source of information in one document and would enable joint understanding of what all parties are expected to do.
 - b) Provisions that are only of exclusive relevance to the operator or air traffic service provider (i.e. internal business and operations) should be excluded from

¹¹ <http://easa.europa.eu/agency-measures/docs/opinions/2010/05/Draft%20Regulation%20laying%20down%20common%20airspace%20usage%20requirements%20and%20operating%20procedures.pdf>.

SERA and instead captured in alternative rules specific to the operation, e.g. IR OPS, IR ATM/ANS (e.g. Part-MET), etc.

- c) Subject matter for which there is a fine line between a) and b) above should be considered case-by-case, taking into account the synergy with other material and the most logical placement.

In order to ensure accurate recording and monitoring of transposition plans, ICAO checklists should be utilised to record the placement of ICAO material into EU rules and an assessment of ICAO compliance achieved.

2. Status of the ICAO and EASA material

In order to conduct effective, efficient and consistent transposition of the ICAO material into EU law, it is essential that there is a clear understanding of the ICAO and EASA/EU rulemaking structures, and the synergies and variances between them.

ICAO

2.1 ICAO material frequently addresses Member States and is promulgated as Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS), and Notes¹²:

- a) Standards are those specifications where uniform application is necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the ICAO Convention. A Standard contains a statement specifying an obligation through the use of the verb 'shall'. However, for subsidiary statements, the verbs 'may' and 'need not' are acceptable.
- b) Recommended Practices are specifications for which uniform application is desirable in the interests of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavour to conform in accordance with the ICAO Convention. Recommended Practices use the verb 'should'.
- c) PANS comprise, to the most part, operating practices as well as material considered too detailed for SARPs. PANS often amplify the basic principles in the corresponding SARPs. In consequence, within PANS, the word 'shall' is used where uniform application is necessary for safety or regularity; the word 'should' is used where uniform application is desirable.
- d) Notes are used in association with SARPs and PANS but do not form part of the associated provisions. A note is used to introduce or reference a subject, or to clarify the intent of the provision. However, notes do not alter the obligation in the provision; therefore, the expressions 'shall', 'should', 'is desirable' are not to appear in the text of notes.

2.2 The Chicago Convention and its Annexes form the basis for national laws and regulations regarding the safety, security, regularity and efficiency of civil aviation. ICAO SARPs are adopted in accordance with the Chicago Convention. States have to comply with standards, unless they file a difference (see paragraph below). Also, each contracting State will need to undertake to keep its own regulations uniform, to the greatest possible extent, with those established under this Convention.

¹² Doc 8143 (Directives to Divisional-type Air Navigation Meetings and Rules of Procedure for their Conduct) provides complete detail.

Where States may find it impracticable to comply with the ICAO international standards and procedures in all respects, Article 38 of the Chicago Convention obliges States to notify ICAO of the differences. States are also invited to extend such notification to any differences from Recommended Practices when these are important for the safety of air navigation. It should be noted that in accordance with Article 12 of the Chicago Convention, Standards contained in Annex 2 (rules of the air) are mandatory over the high seas where they apply without exception.

EASA/EU

- 2.3 The EASA Rulemaking process can result in either Implementing Rules (IRs) which are directly binding on regulated persons or organisations, Acceptable Means of Compliance (AMC), Certification Specifications (CSs), or Guidance Material (GM).
- a) IRs are binding on persons (e.g. ATCOs, pilots), organisations (e.g. ANSPs, air operators) and competent authorities (e.g. NSAs, NAAs) in their entirety and used to specify high and uniform level of safety and to guarantee uniform conformity and compliance without variation.
 - b) AMC contain non-essential elements and are non-binding. The AMC serve as a means by which the requirements contained in the Basic Regulation and in the IR can be met. The AMC have the presumption of compliance with the IRs, meaning that, by achieving compliance with the AMC, compliance with the related IR is also achieved. However, applicants may decide to show compliance with the requirements using other means, and competent authorities may also produce their own alternative AMC (which may be proposed by organisations), based on those issued by EASA or not. The formalised process for the development and acceptance of alternative AMC is being addressed as part of the NPA 2008-22 and has been refined in the publication of the relevant Comment Response Document¹³ by EASA.
 - c) CSs are non-binding technical standards to meet the requirements of the Basic Regulation and applicable IR. However, they are made binding through the certification basis. It is not expected that CSs would be appropriate for SERA material due to the absence of technical specifications from the subject matter.
 - d) GM is non-binding but provides an explanation on how to achieve the requirements in the Basic Regulation or the IR. It contains information, including examples, to assist the user in the interpretation of the IR.

3 Analysis

- 3.1 It can be seen that there is likely to be a synergy between what is an ICAO Standard and what is required for an IR, as both should be used to ensure uniform conformity without variation. Therefore, it is expected that Standards would normally be transposed as IR material; this would also result in the complementary ICAO/IR use of the verb 'shall'.
- 3.2 In considering transposition of Recommended Practices, it is necessary to use a case-by-case approach, to determine whether for EU Member States uniform application through IR is necessary or feasible. Only where an IR is not necessary or feasible, AMC would be the appropriate transposition. For such cases, a high level requirement or safety objective should also be introduced or identified at IR or BR level.

¹³ <http://easa.europa.eu/rulemaking/r-archives.php#crds>.

Additionally, some Recommended Practices may be more appropriate as GM, particularly for those provisions for which compliance cannot be measured.

- 3.3 ICAO PANS are intended to provide detailed amplification of SARPs. In consequence, AMC would be the appropriate transposition in many cases. Additionally, some PANS replicate material also published in SARPs. In support of the harmonisation of the European ATS environment, a case-by-case approach to determine whether uniform application through IR is feasible or necessary will be used, in particular in cases where the ICAO PANS uses the keyword 'shall' or where specific operating limitations are involved.
- 3.4 ICAO notes would normally be considered as either not relevant (cross-references) or, where appropriate, transposed as GM. However, some Notes appear to define and support the application of the SARPs or PANS and may need to be incorporated into the IR or AMC.
- 3.5 ICAO SARPs and PANS requirements are frequently addressed to Member States whilst IRs should wherever possible be addressed to the specific regulated person, organisation or competent authority. Additionally, some SARPs and PANS contain material which could not be directly transposed as it would result in legal uncertainty. Therefore, in such situations it may be necessary to adapt as appropriate the ICAO text.
- 3.6 In reviewing the ICAO material, it is possible that the ALGAR drafting group will identify some elements that are not ideally suited to EU airspace, and for which in order to maintain high levels of safety, differences are required. For such cases, the principles applied are described in 5.

4 Principles of allocation to IR/AMC/GM

- 4.1 It is necessary to take a case-by-case approach to transposition, as the ICAO document structure does not consistently mirror a legislation/regulatory framework. Therefore, and in order to ensure the optimal solution for EU Member States, the following questions should be asked:
- a) For ICAO Standards/Recommended Practices/PANS:
- i. Is uniform and total compliance without variation necessary or desirable and feasible? If yes, then indicate the potential IR. If no, indicate the potential AMC for which a safety objective in the IR or even the BR needs to be developed or identified.
 - ii. Are there current or likely future alternative ways of achieving the requirement? If yes, indicate the potential AMC.
 - iii. Are there known State differences to ICAO notified/published? If yes, and if they are needed and justified to maintain a high level of safety, indicate a potential for AMC which should be considered. Also see Section 4 below.
- b) For ICAO notes:
- i. Is it a cross-reference? If yes, review the cross-reference material for potential transposition as IR, AMC or GM.

- ii. Is the note content necessary in order to achieve the Standard/Recommended Practice/PANS that it supports? If yes, consider note content for inclusion within the relevant IR or AMC or GM.
- iii. Does the note provide useful guidance, context, background, but is not necessary for the IR/AMC to be complied with? If yes, consider promulgation as GM.

4.2 The above approach is considered to be consistent with that specified in the SERA Mandate, which in general required the material of ICAO SARPs and PANS to be classified into three categories:

- a) Provisions that should be implemented as implementing rules, without differences to ICAO.
- b) Provisions where binding implementing rules are considered necessary but the ICAO baseline should be enhanced through adaptations or improvements leading to a common difference being filed by all Member States.
- c) Provisions which are of local nature or of a nature where full standardisation is not necessary. In these cases the usage of Acceptable Means of Compliance or Certification Specifications may be considered if that is considered useful for the implementation of the ICAO provisions by the Member States. In this case a safety objective in the IR should be developed or identified.

5 How to deal with ICAO differences?

5.1 Background

5.1.1 This section provides an overview of ICAO differences, their varying nature, and the notification requirements for these.

5.1.2 ICAO differences are categorised on the basis of whether the corresponding national regulation is:

- a) more exacting or exceeds the ICAO Standard or Recommended Practice;
- b) different in character or provides other means of compliance; or
- c) less protective or partially/not implemented.

5.1.3 Under Article 38 of the Chicago Convention, States shall give immediate notification of their national differences to ICAO Standards. Additionally, States are invited to extend such notification to any differences to Recommended Practices when the knowledge of such differences is important for the safety of air navigation.

5.1.4 Where the national regulations of States are not identical but essentially the same as those contained in the SARPs, no difference needs to be reported since the details of the procedures existing are the subject of notification by means of aeronautical information publications. In some cases this can be seen by States adapting ICAO wording to enhance clarity, but without changing the overall requirement.

5.1.5 Differences to PANS are not notified to ICAO; however, contracting States are requested¹⁴ to publish any 'significant' differences in their AIPs. This situation has led to

¹⁴ Appendix D of Resolution A36-13.

inconsistent publication of PANS differences in various State AIPs, mainly due to varying interpretations of what is 'significant'.

5.2 Principles of developing common European ICAO differences

- 5.2.1 Once the initial step of assessing candidate ICAO material for IR/AMC/GM placement is completed, the content should be considered to assess whether it should be adopted without variation, or if a difference should be developed. The potential options and steps to be taken for these are listed below for candidate IR and AMC material.
- 5.2.2 Where the subject matter is appropriate for IR, but an ICAO difference is considered necessary, the exact action required by the drafting group depends on the nature of the difference:
- a) More exacting or exceeds ICAO. Where it is found that a State or multiple States have implemented rules that are more exacting or exceed the ICAO requirements, these should be considered for adoption as EU standard in cases where it is clear that such a step could potentially enhance flight safety in the EU region. However, in order to enforce such measures in binding regulations, it would be necessary to accompany the proposal with a supporting impact assessment which demonstrates clear benefit versus any potential negative effects, and includes adequate transitional arrangements.
 - b) Different in character or provides other means of compliance. Where States have implemented rules that are different in character or an alternative means of compliance, these should be assessed to consider if they are the most appropriate solution for the EU airspace, and if so, specified as the EU standard in the IR. Alternatively, there could be consideration of the material being promulgated as an AMC to an appropriate requirement in the IR, along with the ICAO provision as an additional AMC.
 - c) Less protective or partially/not implemented. It is considered unlikely that any ICAO SARPs or PANS transposed into the EU rules would be less protective or partially/not implemented. However, if it is identified that this is potentially a valid approach, it would be necessary to complete a regulatory impact assessment and the proposal would need to be robustly justified on the basis that the benefits gained outweigh any negative safety impacts from the difference.
- 5.2.3 Where ICAO material is considered to be most appropriate as an AMC, but an ICAO difference of a 'more demanding' or 'different in nature' is considered necessary, there should be consideration of both the ICAO and the varying requirement to be promulgated as alternative AMC. In this case, a high level requirement or safety objective should be introduced or identified at BR or IR level. It is considered unlikely that ICAO SARPs/PANS would be transposed at a less protective level within an AMC. However, if it was identified that this was potentially a valid approach, it would be necessary to complete a regulatory impact assessment and the proposal would need to be robustly justified on the basis that the benefits gained outweigh any negative safety impact from the difference.
- 5.2.4 As recognised above, it will be necessary to appropriately adapt ICAO text to ensure that the requirements in IR and AMC are placed wherever considered more useful on specific regulated persons, organisations or competent authorities, rather than on Member States. Additionally, some SARPs and PANS contain material which could not

be directly transposed as it would result in legal uncertainty and this will need to be addressed on a case by case basis.

- 5.2.5 Regardless of the ICAO notification requirements specified above, it is considered appropriate for a complete set of compliances to be provided for all ICAO Standards, Recommended Practices and PANS, which are transposed into the EU rules. This will ensure that best practices are applied and enable total clarity of ICAO compliance to all EU Member States, airspace users, and service providers.

III Summary of the safety assessment on the draft SERA Part B

1 Safety assessment process

1.1 Introduction

The safety assessment approach is argument-driven intended to derive a process to be followed through the entire SERA Part B development lifecycle.

This safety assessment is addressing the European transposition of air traffic services requirements which are of a 'rule of the air' nature into the single European sky legislative framework. Such transposition (SERA Part B) shall be developed considering principally the ICAO Annex 11 and also some elements of the ICAO Annex 3.

It is recalled that for the first step (SERA Part A) addressing the European transposition of ICAO Annex 2, it has been shown during the relevant safety impact assessment that Air Operation in accordance with SERA Part A will be acceptably safe when all necessary regulations are in place.

To show that SERA Part B provision relative to Air Traffic Services is acceptably safe, it should be shown that '**SERA Part B air traffic services requirements, which are of a "rule of the air" nature, ensure a safe air traffic flow within the European Union**'. To support such claim it is essential to show that these requirements are complete and correct.

In order to satisfy this objective, the safety activities will address the SERA Part B specification and design phase, and partially the implementation, transition and operation phases.

In this document, the following terms are defined as follows:

- Safety Argument: A Safety Argument is a statement (or a set of statements) that is used to assert that the service or system concerned is safe, and should be developed as follows.
- Safety Specification: A requirement to be taken into account during the design phase.
- Safety issue: safety issues are identifying any problem encountered during the safety assessment which must be resolved before the Claim can be considered to be valid.
- Safety Assumption: Assumptions usually relate to matters outside of the direct control of the organisation responsible for the Safety Assessment but which are essential to the completeness and/or correctness of this assessment.
- Safety Requirement: Safety Requirements are means by which the necessary risk reduction measures are formally specified. Necessary in this context means necessary in order to achieve the required safety levels, as defined by the Safety Criteria.

1.2 The safety argument

The safety argument is based on a top level claim that **SERA Part B air traffic services requirements which are of a 'rule of the air' nature ensure a safe air traffic flow within the European Union**. A common general application of operating rules and procedures is necessary in order to have a high and uniform level of safety in Europe.

The top level safety claim was subsequently divided into the following five principal safety arguments:

1. SERA Part B provision has been defined/specified to ensure a safe air traffic flow;
2. SERA Part B provision has been designed to ensure a safe air traffic flow;
3. SERA Part B provision will be implemented completely and correctly;
4. Transition from current state to SERA Part B provision will ensure a safe air traffic flow;

5. Operational use of SERA Part B provision will ensure a safe air traffic flow.

2 Summary result for the specification phase

Different safety assurance activities relative to the specification phase were carried out to support the argument: 'SERA Part B provision has been defined/specified to ensure a safe air traffic flow'. The outcome from the safety assurance is documented in paragraphs 2.1 to 2.6 below.

2.1 Description of the operational environment

SERA Part B is addressing all airspace classes where air traffic services are provided. These services include Air Traffic Control, Flight Information, Air Traffic Advisory and alerting.

SERA Part B shall consider the current EU operational environment relative to the airspace classification, separation requirements and the different flight rules (IFR, Special VFR, VFR and VFR at night). It shall also consider any potential change associated to FAB implementation and SESAR development.

2.2 Compliance of EU Member States with ICAO Annex 11, ICAO Annex 3 and their operational service experience

EU Member States have notified differences against ICAO Annex 3 and 11 which are relative to the collective actions between airspace user and air traffic service provider. These notified differences were assessed and the outcome was taken into account during the development of SERA Part B.

Concerning the operational service experience (incident/accident) relative to air traffic services requirements of a 'rule of the air' nature, it should be noted at this stage that no adverse in service experience reports (e.g. incident occurrences) have been identified. That is to say that no incident reports indicating potential safety issues associated with the application of ICAO Annex 3 and 11 RoA aspects in the EU have been materialised.

2.3 EC requirements

EC requirements are expressed in the EC Mandate to EUROCONTROL and are relative to:

- the uniform application of the ICAO rules of the air in association with the uniform application of the European common differences to such ICAO standards;
- increasing safety; and
- minimising the inconvenience and risk of misunderstandings caused by varying sets of national rules of the air.

2.4 User requirements

- a) SERA Part B is applicable to all GAT (General Air Traffic) flights operating over or manoeuvring within the territory of a Member State. Flight rules include VFR and IFR. The expected benefit for pilots is to have a single rule applied throughout the EU which should improve efficiency and safety.
- b) SERA Part B is applicable, for the aerodrome environment, to all ground vehicle drivers or persons operating on the aerodrome manoeuvring area. Considering the application of a single rule applied throughout the EU, the expected benefit is to improve efficiency and safety even if ground personnel/vehicle drivers are generally working at a single location (e.g. at one aerodrome).
- c) SERA Part B is applicable to Air Traffic Service Providers (ATSP) and more specifically to controllers and/or Flight Information Service Officers (FISO) who are delivering the air traffic services to airspace and aerodrome users. The expected benefit for such actors is

also safety by providing services to users who have, thanks to this common rule, the same understanding of the RoA leading for example to less controller intervention.

2.5 Safety criteria determination

The objective of Air Traffic Services from a safety perspective is to:

- prevent collisions between aircraft;
- prevent collision between aircraft and between aircraft and ground vehicle on the manoeuvring area and with obstructions on that area;
- provide advice and information useful for the safe and efficient conduct of flights.

The safety performance of the Air Traffic Services is therefore associated to their capability to mitigate some aviation inherent pre-existing hazard/risks (e.g. Mid-air collision, CFIT, airspace penetration, wake-vortex encounters and adverse-weather encounters). It would be unrealistic to identify relative or absolute safety acceptance criteria when considering the limited scope of SERA Part B. Indeed, SERA Part B will address only the Air Traffic Services requirements which are of a 'rule of the air' nature and not all the air traffic services requirements. It means that SERA Part B requirements should consider only the necessary 'collective actions' between pilots and controllers for a safe and efficient flow of air traffic.

The safety criterion was already introduced in § 6.1.2 above. As it is not possible to derive relative or absolute safety criteria from such a claim, it is proposed to show that: **a complete and correct set of air traffic services requirements, which are of a 'rule of the air' nature, have been determined to ensure a safe flow of air traffic within the European Union.**

2.6 SERA Part B specification

The specification of SERA Part B, which will be the driver to develop (design) proper SERA Part B provisions, is supported by:

- the current operational environment associated to Air Traffic Services requirements which are of a 'Rules of the Air' nature;
- the current States' experience and, when applicable, due consideration to their notified differences;
- the consideration of EC requirements; and
- the consideration of users requirements.

This specification process defines the necessary level of ICAO Annex 11/Annex 3 transposition, i.e. the precise extent to which the existing ICAO provisions will be directly imported, so as to satisfy, from a safety point of view, the EC and users' requirements given the targeted operational environment.

It has been determined through the above safety assurance activities (§ 2.1–2.4) that SERA Part B will be developed properly if the following specifications are respected:

SERA Spec1	SERA Part B shall be limited to Air Traffic services requirements relative to the 'Rule of the Air' aspects.
SERA Spec2	SERA Part B provisions shall be designed considering ICAO Annex 11/Annex 3 provision, EU Member States' operational service experience, EU Member States' notified differences, European Union operational environment including FAB, airspace classification, separation requirements and flight rules.
SERA Spec3	SERA Part B provisions (in particular ICAO Annex 11/Annex 3 amended provisions and, if any, new provision) shall minimise the risk of different interpretation.

SERA Spec4	A rule exemption to a SERA Part B provision shall be allowed only on the basis of considerations of its assessed relevance.
SERA Spec5	Alternative procedure (i.e. flexibility) to a SERA Part B provision shall only be allowed if duly justified.
SERA Spec6	Any SERA Part B provision addressing risks inherent to aviation (e.g. CFIT, Mid Air Collision, Taxiway collision, etc.) is considered as a safety requirement.

3 Summary result for the design phase

Different safety assurance activities relative to the design phase were carried out to support the following argument: 'SERA Part B provision has been designed to ensure a safe air traffic flow'. The basic intent is to design SERA Part B provisions in accordance with the above described SERA Specifications (SERA Spec 1 to 6).

3.1 Functional design

In addition to discussion, clarification and issues raised, identified and solved during the ALGAR drafting group and APDSG meetings, additional design activities have been carried out.

Indeed, safety functions associated to airspace and aerodrome operations in accordance with SERA Part B have been identified by building Functional Models from the specification phase. Two models have been built, one for the airspace operation and another one for the aerodrome operation.

A certain number of necessary clarifications have been identified during this design activity as follows: It should be clarified if SERA Part B should address air traffic services provided to VFR at night flights in controlled airspace (Issue 1). Furthermore, it should be determined if the only provision of ICAO Annex 3 relevant to SERA Part B is the 'Aircraft observations and reports' section (Issue 2). It should be also clearly defined when pilots have to report aircraft meteorological observations considering the different possible types of flight and airspace classification (Issue 3).

Finally, persons and vehicles operating on the manoeuvring area of an aerodrome shall be regulated by an appropriate regulation to reach an acceptable level of safety (Issue 4).

Issue 1	Determine if SERA Part B should address air traffic services provided to VFR at night flight in controlled airspace.
Issue 2	Provide evidence that the only relevant provision of ICAO Annex 3 relevant to SERA Part B is the 'Aircraft observations and reports'.
Issue 3	SERA Part B should define accurately the applicability of the meteorological observations reporting when considering the different type of flight (VFR, IFR) and the different airspace classification.
Issue 4	Persons and vehicles operating on the manoeuvring area of an aerodrome shall be regulated by an appropriate regulation to reach an acceptable level of safety.

3.2 Logical design

Due to the specific nature of SERA Part B and because it will not significantly enrich/refine the functional modelling, it has been decided not to develop a Logical Model. Instead of that, the different elements (human, machine) associated to the functional modelling have been identified and the safe application of the SERA Part B provision will rely on them. The different

human elements are the following: controller; Flight Information Service Officer (FISO); pilot; vehicle driver; vehicle driver towing aircraft; emergency vehicle driver and persons operating on the manoeuvring area. The only machine element is the ATIS system.

3.3 Design of SERA Part B provisions

The most procedural aspects associated to SERA Part B are safety-related because their prime objective is to address risks inherent to aviation (e.g. Mid Air Collision, Taxiway collision, etc.). This means that **SERA Part B requirements shall be considered as safety requirements (SERA Spec6)**.

For that purpose, the design phase shall define these procedures very accurately in order to prevent any misinterpretation/adaptation/modification when this procedure is implemented. However, when considering a direct transposition of an ICAO Annex 11/Annex 3 requirement to SERA Part B, it is not necessary to consider such requirement as a new one and therefore it is not necessary to apply all the associated validation aspects. In such a case, a review of the existing Annex 11/Annex 3 requirements (eventually including minor modification) is considered sufficient for the design phase. The minor modifications applied to the ICAO Annex 11 text will be validated through engineering judgement (e.g. during ALGAR meeting).

On the contrary, a new provision or a provision differing from the ICAO Annex 11/Annex 3, should be developed and validated carefully respecting some key aspects: be necessary, sufficient, appropriate, designed with rigor and relevant.

3.4 Design completeness

The completeness aspect of SERA Part B is essential from a safety point of view and is mainly driven by **SERA Spec1** which states that 'SERA Part B shall be limited to Air Traffic services requirements relative to Rule of the Air aspects'.

The ICAO Annex 11 was used as the starting point and a screening review of the whole document was done to extract all sections/paragraphs associated to collective action between Air Traffic Services and airspace/ground users. The result of this screening activity leads to identifying those elements which constitute the main part of SERA Part B provisions (see the matrix document attached in Appendix VI to this NPA).

The review has revealed that certain paragraphs are not strictly describing collective action between ATS and airspace users but are addressing also collective actions between ATS units or between ATS units and military units (e.g. for coordination).

It has been also assessed if SERA Part B should include requirements coming directly/indirectly from SERA Part A provision. VFR at night operation is one element which is not included in ICAO Annex 11 but in SERA Part A provision. It is therefore necessary to decide if SERA Part B has to regulate the separation for such flights.

This item is associated with **Issue 1** identified during the specification phase.

For that purpose and based on Member States' experience (confirmed by the informal consultation), it has been decided to consider VFR at night and daytime VFR in the same way when considering the separation aspect. Therefore, **Issue 1** can be closed.

Furthermore because it has been decided to include the ICAO Annex 3 elements relative to collective actions beneficial for Air Traffic services into SERA Part B, an additional verification exercise was necessary. It has been checked and verified that the only collective actions between flight crew and ATS are those described in ICAO Annex 3 Chapter 5 (Aircraft observation and reports). **Issue 2** identified during the Specification phase can be closed. However, it should be noted that collective actions between meteorological services and flight crew or between meteorological services and ATS were not extracted from ICAO Annex 3 to populate SERA Part B, as they were not considered to be 'rules of the air'.

During the completeness review, one concern was raised which is relative to the exact meaning of **'collective action'**. Indeed, the screening exercise of ICAO Annex 11 and 3 is strongly dependent on the precise definition and usage of this term. The 'collective action' criterion should be accurately defined and applied.

Issue 5	The 'collective action' criterion should be accurately defined and applied.
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This issue is difficult to solve because even with a clear definition of collective action it is necessary sometimes to transpose the entirety of a provision which contains collective and also non-collective actions into SERA Part B. Splitting some provisions (notably when there is a list of bullet points) to an excessive level of detail would clearly damage the integrity of the original requirement (modifying the requirement to suppress only the non-collective action aspect could lead to a non-comprehensible or incomplete requirement). Therefore it is necessary to allow a certain level of flexibility, on a case-by-case basis, to keep some non-collective actions into SERA Part B and to preserve the integrity of certain ICAO requirements (slight overlap is better than gap or inconsistency) (see also the principles of allocation described contained in Appendix II to this NPA). Consequently, Issue 5 can be closed.

Apart from this concern, one ICAO provision which is not included in SERA Part B was identified and this provision could bring safety benefits. This provision is the ICAO Annex 11 recommendation (§4.2.3) which is relative to the 'Scope of FIS' .

4.2.3 Recommendation — *ATS units should transmit, as soon as practicable, special air-reports to other aircraft concerned, to the associated meteorological office, and to other ATS units concerned. Transmissions to aircraft should be continued for a period to be determined by agreement between the meteorological and air traffic services authorities concerned.*

The ALGAR drafting group should consider if such ICAO recommendation has to be included in SERA Part B.

Issue 6	Determine if ICAO Annex 11 recommendation section 4.2.3 relative to the 'Scope of FIS' should be transposed into SERA Part B.
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For the rest of SERA Part B provisions, it has been shown that it was complete thanks to several reviews which have been carried out during the ALGAR meetings to check the provision completeness as it is indicated by the relevant minutes of these meetings. Regarding the trustworthiness of this group, it should be emphasised that ALGAR was composed of different participants from EASA, the European Commission, ICAO and EUROCONTROL with a good knowledge of Air Traffic Services requirements associated to ICAO Annex 11/Annex 3.

In addition the EUROCONTROL APDSG (ATM Procedure Development Sub-Group), expertise was used for collecting views and opinions in the transposition of ICAO provisions into SERA Part B. The APDSG reviewed and provided comments on the candidate provisions from ICAO Annex 11 to be considered for future IR/AMC/GM and such outcome was fed to the ALGAR Group for consideration.

3.5 Design correctness

The correctness aspect of SERA Part B is essential from a safety point of view and is mainly driven by SERA Spec2 which states that '*SERA Part B provisions shall be designed considering ICAO Annex 11/Annex 3 provision, EU States' operational service experience, EU Member States' notified difference, EU operational environment including FAB, airspace classification, separation requirements and flight rules*'. Furthermore SERA Spec3 is also essential when designing SERA Part B provisions. Indeed, SERA safety-related provisions should be designed

to ensure that the probability to misinterpret the provisions by the different actors (e.g. controller, AFISO, pilot) is as low as practicable and should not be prone to interpretation.

The correctness analysis was carried out and for each SERA Part B requirement it has been assessed if the requirement is correct from a safety point of view considering **SERA Spec2** and **SERA Spec3**.

For requirements where correctness was not shown, **Issue** and/or **Reco** were identified. Eight issues (Table 1) and three recommendations (Table 2) were found, which needed to be addressed to satisfy the correctness criteria. An additional column is added to the table 1 and 2 to consider the new IR draft and identify if the Issue and/or Recommendation is still applicable (an iterative process is followed to conduct the safety assessment on the validated drafts in order to respect the deadlines set by the mandate).

Table 1: Issues identified during the Design correctness activity

Ref	Title	SERA Part B
Issue 7	Any change to the current airspace classification in a considered Member State shall be supported by a safety assessment addressing the potential safety issues associated to the implementation of SERA Part B provision.	Para 1.2 Issue 7 can be closed because SERA article 8 'Safety requirements' is also applicable to SERA Part B.
Issue 8	It shall be verified that the material (still tbd in SERA Part B) describing the separation minima allows separation minima reduction compared to the current situation. If separation reduction is possible, it shall be supported by a safety assessment.	Para 2.3 The text is now referring to the Chicago Convention. Issue 8 can be closed.
Issue 9	To properly inform all flight crews of the necessity to, respectively, read back and listen to the read back of the 'newly assigned frequency' and the 'taxi instruction'.	Para 2.4.4 Issue 9 still open.
Issue 10	Special VFR requirements 2.6.1.a) and b) relative to weather conditions are not referring to ATS aspects, it should be decided if such a requirement should be maintained in SERA Part B.	Para 2.6 Special VFR being directly linked to ATS, it has been decided (and supported by the informal consultation) to include all special VFR requirements into a single section of Part B instead of splitting it between SERA Part A and B. Issue 10 can be closed.

Issue 11	Confirm that SERA Part B requirement 2.6.1.c relative to separation minima is not redundant with SERA Part B requirements 2.2.2.e and 2.3.	Para 2.6 This paragraph has been modified accordingly. Issue 11 can be closed.
Issue 12	To amend the SERA Part B requirement 3.3.1 wording because 'Use of ATIS in directed request/reply transmissions' is ambiguous.	Para 3.3 Issue 12 still open.
Issue 13	The SERA Part B requirement 5.2.1 shall specify if routine a/c observations reporting is only applicable for a/c equipped with air-ground data link.	New Para 5.2 This new paragraph is addressing the issue. Issue 13 can be closed.
Issue 14	To clarify that routing reporting is only applicable to aircraft equipped with air-ground data link and amend SERA Part B accordingly.	New Para 5.2 This new paragraph is addressing the issue. Issue 14 can be closed.

Table 2: Recommendations issued during the Design correctness activity

Ref	Title	SERA Part B
Rec 01	Standardise the terminology associated to two-way radio communication in SERA Part B requirement 1.2 and its Appendix 1.	Para 1.2 Para 1.3.1 These paragraphs have been amended accordingly. Rec 01 is addressed.
Rec 02	Standardise the terminology by using 'secondary surveillance radar transponder' or 'SSR transponder' and not referring to Mode A/C or Mode S.	Para 1.3.2 This paragraph has been amended accordingly. Rec 02 is addressed.
Rec 03	Determine if the addition of possible rule flexibility associated to SERA Part B requirement 5.3.1 could be beneficial for helicopter off-shore operation which are conducted on route and altitude where 'conventional' meteorological observation (e.g. radiosonde) is possible.	Para 5.2 If we consider that agreement between the MET service and the helicopter operator is a kind of flexibility, e.g. through negotiation, Rec 03 could be considered addressed.

3.6 Design robustness

It has been determined that **SERA Spec 4** (Rule exemption) and **SERA Spec 5** (Rule flexibility) have been addressed satisfactorily. For SERA Spec 4, no rule exemption to SERA Part B provisions is authorised. This aspect shall be considered during the operation phase.

For SERA Spec 5, it has been reviewed that any flexibility associated to a SERA Part B provision (e.g. *procedures using terminology like 'Unless otherwise authorised', 'Except when necessary ...'*) does not undermine 'high' and 'uniform' levels of safety. It has been verified that all introduced flexibilities are necessary to maintain an efficient level of performance for air operations.

3.7 Design integrity

For each SERA Part B provisions the following elements have been determined:

- generated hazards (failure);
- generated hazard cause (e.g. element of the logical design);
- consequence of the occurrence of the generated hazards.

As ATS requirements — which are of a 'rule of the air' nature — are high level safety-related procedures, failure to adhere to these SERA requirements will significantly reduce the safety of the operation and the consequence of the occurrence of the generated hazard could be: Mid Air Collision, Taxiway Collision, Wake Vortex encounter, penetration of prohibited/restricted area, aircraft veer off or overrun off the runway surface.

The common generated hazard is associated to the 'failure to respect the procedure' and causes are controller, Flight Information Service Officer (FISO), ground vehicle driver or pilot. The only failure associated to a non-human element when considering SERA Part B is associated to ATIS transmission.

Adherence to SERA Part B provisions is therefore a key element which is associated to human factor aspects.

Because it is not within the scope of SERA Part B to address the training and the qualification aspect associated to the different actors, these aspects have been captured through several safety assumptions (**Safety Assumptions 1 to 4**) associated to the different actors in order to reinforce the importance of adhering properly to the relevant ATS requirements relative to the 'rule of the air'.

Table 3: Assumptions issued during the Design integrity activity

Ref.	Title	How it is processed in the draft Implementing Rule
Safety Assumption1	Pilots are properly trained and are fully knowledgeable about the relevant SERA Part B provisions, both existing and as amended.	Responsibility for validation is at EASA level/Member State level. Assumptions addressed by Regulation (EC) No 216/2008 (amended by Regulation (EC) No 1108/2009) and by Regulation (EC) No 859/2008.
Safety Assumption2	Controllers are properly trained and are fully knowledgeable about the relevant SERA Part B provisions, both existing and as amended.	Responsibility for validation is at EASA level/Member State level. Assumptions addressed by Regulation (EC) No 216/2008 (amended by Regulation (EC) No 1108/2009) and Directive 2006/23/EC.
Safety Assumption3	Flight Information Service Officers (FISO) are properly trained and are	Responsibility for validation is generally covered at EASA

	fully knowledgeable about the relevant SERA Part B provisions, both existing and as amended.	level/Member State level. Assumptions addressed by Regulation (EC) No 216/2008 (amended by Regulation (EC) No 1108/2009) and Directive 2006/23/EC.
Safety Assumption4	Ground vehicle drivers/persons operating on the aerodrome manoeuvring area are properly trained and are fully knowledgeable about the relevant SERA Part B provisions, both existing and as amended.	Responsibility for validation is generally covered at EASA level/Member State level. Assumptions addressed by Regulation (EC) No 216/2008 (amended by Regulation (EC) No 1108/2009) and Directive 2006/23/EC.

3.8 Safety requirements achievability

It is first recalled that most of SERA Part B requirements are considered as safety requirements (SERA Spec6) because the rule objective is to mitigate pre-existing hazard/risk inherent to aviation.

For ICAO Annex 11/Annex 3 provisions not modified by SERA Part B, the in service (operational) experience is used to show Safety Requirement (SR) achievability. This process is acceptable because no safety-related occurrences (incident/accident) related to the current application of ATS requirements (which are of a 'rule of the air' nature) by the different Member States have been identified so far.

However, as most of the SERA Part B provisions are human procedures and rely on the integrity of human tasks and procedures, it is very difficult (not to say impossible) to show in a conclusive way that such procedures will be satisfied during actual operation. Since the evidence for safety requirements associated to people (human) is indirect, conclusions regarding Safety Requirements satisfaction shall be supported with evidence that the Safety Requirements are, at least, capable of being satisfied by a human (e.g pilot, controller, FISO and vehicle driver).

This point is covered by Safety Assumptions 1 to 4 (described in the paragraph above) addressing training and qualification aspects of the different 'actors'.

For the different actors, training and qualification regulation shall be in place. Such a regulation is either national or European. Examples may be considered like:

- Pilots (Safety assumption 1): The aircraft operator should comply with its national (for general aviation) or EU rules (for air transport, e.g. EU-OPS) and be approved by the competent authority.
- Controller (Safety Assumption 2): The controller providing air traffic control service, flight information service and alerting service should comply with Directive 2006/23/EC (Community air traffic controller licence).
- FISO (Safety Assumption 3): The personnel providing Flight Information Service and alerting service should comply with the training/qualification requirements prescribed by the competent authority.
- Ground vehicle drivers/persons (Safety Assumption 4): The personnel authorised by the airport operator to operate on the aerodrome surface should comply with the training/qualification requirements prescribed by the competent authority.

3.9 Safety requirement consistency with SERA Part B IR objective

It has been determined that IR safety requirements issued during the design phase are consistent with the IR Mandate objective.

It has been shown through the design correctness/completeness activities that SERA Part B safety requirements are consistent with the IR mandate objective because they address only Air Traffic Service requirements which are of a 'rule of the air' nature to be applied in the EU Member States' airspace.

4 Summary result for the implementation phase

Different safety assurance activities relative to the implementation phase were carried out to support the following argument: 'SERA Part B provision will be implemented completely and correctly'.

Due to the specific nature of SERA Part B, the refinement stage between the design phase and the implementation phase doesn't exist. It means that SERA Part B provisions directly apply in EU Member States without any possible adaptation/modification.

One issue was identified regarding the implementation of the provision associated with the 'coordination between the aircraft operator and air traffic services'. Indeed this provision requires Air Traffic Service Units to consider aircraft operators requirements (e.g. EU-OPS) when providing their services. Because such a requirement is not very detailed, it is likely that interpretation during implementation might be possible. It is recommended that guidance material should be produced to explain what kind of consideration should be addressed by ATS providers when delivering their services.

Rec 04	Develop guidance material associated to the SERA Part B 'coordination between the aircraft operator and air traffic services' requirement.
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In addition, and in accordance with SERA Spec 5, some rule flexibilities have been introduced or kept, because it was considered necessary to maintain an efficient level of performance for air operations.

In conclusion SERA Part B provisions shall be implemented directly in all EU Member States without any modification beyond the flexibility allowed within the provisions. It is also recommended to develop guidance material associated to the provision relative to the 'coordination between the aircraft operator and air traffic services' in order to describe more precisely what considerations should be addressed by ATS providers when delivering their services.

5 Summary result for the transition phase

Partial safety assurance activities relative to the transition phase were carried out to support the following argument: 'Transition from current state to SERA Part B provision will ensure a safe air traffic flow'.

Even if current local ATS requirements relative to 'rule of the air' and SERA Part B are based on ICAO Annex 11 and ICAO Annex 3, differences will most likely exist between some current local requirements and SERA Part B requirements. The transition from local situation to SERA Part B, even if the objective is safety and efficiency, shall be managed carefully to prevent any negative safety impact on the delivered service.

Transition between local ATS requirements and SERA Part B shall be managed at national level to prevent any negative safety impact. A national process has to be put in place to manage this transition which shall be commensurate with the degree of difference between the local ATS requirement and SERA Part B requirement.

Therefore each EU Member State shall first determine if their current ATS requirements relative to the 'rule of the air' differ from the SERA Part B to be implemented. If differences exist, a local safety assessment shall be conducted to identify possible hazards associated to the 'switchover' from the current situation to SERA Part B. When necessary, measures shall be put in place to control/mitigate the associated risks during a transition period to be determined locally. This point is addressed because SERA article 8 'Safety Requirements' is also applicable to SERA Part B.

6 Summary result for the operation phase

Partial safety assurance activities relative to the operation phase were carried out to support the following argument: 'Operational use of SERA Part B provision will ensure a safe air traffic flow'.

Rule exemption policy associated to any SERA Part B requirement has not been envisaged and is therefore not permitted unless a safety problem is identified during the local safety assessment preventing the application of the rule for the time being in the considered environment. To strengthen that aspect it should be clearly stated in the Implementing Rule that: 'No rule exemption for any SERA Part B provision is permitted unless a safety problem is identified.' However, in the case of urgent unforeseen circumstance or a safety problem is identified and needs an urgent reaction by the Member States, the derogation to the rule shall follow the transparent process required under Article 14 of the EASA Basic Regulation. It must be noted that SERA Article 3 'Compliance' is also applicable to SERA Part B..

The responsibility for controlling changes to SERA Part B, in particular for considering future ICAO Annex 11/Annex 3 amendments, shall be established. A pan-European process has to be put in place to maintain SERA Part B consistent with future ICAO changes. To strengthen that aspect the Implementing Rule should define the maintenance process which will consider any future ICAO amendments.

This point is addressed because SERA article 5 'Monitoring of Amendments' and 6 'Amendments to the Annex' are also applicable to SERA Part B.

7 Conclusion associated to the different development phases

The safety impact assessment process was carried out during the different safety lifecycle phases of the European transposition of air traffic services which are of a 'rule of the air' nature into SERA Part B (e.g. specification, design and partially implementation, transition and operation).

7.1 During the specification phase, the safety acceptance criterion has been defined to show that: 'a complete and correct set of air traffic services requirements which are of a "rule of the air" nature to ensure a safe flow of air traffic have been determined'.

This safety acceptance criterion was the main driver for all safety assurance activities carried out during this safety impact assessment. The safety assurance activities carried out during this phase resulted in a set of high level SERA safety specifications (six SERA Spec) to be respected for the design phase in order to develop properly SERA Part B provisions.

7.2 During the design phase, it has been shown that SERA Part B safety requirements are complete and correct when considering the air traffic services requirements which are of a 'rule of the air' nature when all issues will be addressed and recommendations considered.

In addition, four Safety Assumptions (Safety Assumptions 1 to 4) associated to the human factor aspect (e.g. adherence to promulgated procedures) and more precisely the training and qualification aspect have been captured and shall be addressed outside the scope of SERA Part B.

- 7.3 During the safety assessment of the implementation phase, it has been shown that the implementation phase shall consist of a direct implementation of SERA Part B requirements without any possible adaptation/modification by a Member State.
- 7.4 During the safety assessment of the transition phase, it has been determined that the Implementing Rule shall specify that when a difference exists between local ATS requirements relative to the 'rule of the air' and SERA Part B, a local safety assessment shall be conducted. To address that aspect, application of SERA Part A article 8 'safety requirement' is considered acceptable.
- 7.5 During the safety assessment of the operation phase, it has been determined that no rule exemption is permitted and that a "maintenance" process shall be put in place to consider future ICAO Annex 11/Annex 3 amendment into SERA Part B provisions. To address these aspects, application of SERA Part A article 3 'Compliance', 5 and 6 on Amendments and article 8 'Safety requirements' respectively are considered acceptable.
- 7.6 Supported by a structured safety assurance process addressing the different safety lifecycle phases, it has been shown that SERA Part B air traffic services requirements, which are of a 'rule of the air' nature, ensure a safe air traffic flow within the EU when:
- all identified safety issues are addressed;
 - all identified safety recommendations are considered;
 - all identified safety assumptions relative to staff training and qualification are validated;
 - SERA Part B provision is implemented without any modification;
 - a local safety assessment is carried out by Member States to assess the transition from their local situation to SERA Part B;
 - no rule exemption is permitted and a SERA Part B maintenance process is put in place.

8 General conclusion — Safety

This safety assessment is addressing the European transposition of air traffic services requirements which are of a 'rule of the air' nature into the single European sky legislative framework. Such transposition (SERA Part B) shall be developed considering principally ICAO Annex 11 and also some elements of ICAO Annex 3.

The safety impact assessment process was carried out during the different safety lifecycle phases of the European transposition of air traffic services, which are of a 'rule of the air' nature, into SERA Part B: specification, design and partially implementation, transition and operation.

During the specification phase, the identified safety acceptance criterion was to show that: 'a complete and correct set of air traffic services requirements, which are of a "rule of the air" nature, have been determined to ensure a safe flow of air traffic within the EU'. For that purpose six high level SERA safety specifications were determined to be satisfied during the design phase in order to develop properly SERA Part B provisions.

In the design phase, it has been shown that SERA Part B was complete, correct, had sufficient robustness properties, had sufficient integrity properties, was potentially achievable and was consistent with the IR objective. It is worth noting that most of the SERA Part B requirements are considered as safety requirements because their prime objectives are to mitigate pre-existing hazard/risk inherent to aviation (e.g. Mid Air Collision, Taxiway collision, etc.).

The implementation phase has determined that a direct implementation of SERA Part B (designed) provisions without any possible adaptation/modification by a Member State was necessary.

The transition phase has indicated that a local safety assessment shall be conducted to handle safely the transition from the current Member State situation to the application of SERA Part B provisions.

Finally, the operation phase has determined that no rule exemption was permitted and that a 'maintenance' process shall be put in place to consider future relevant ICAO Annex 11 amendment, Annex 3 amendment or any amendment coming from change within the EU operational environment.

To conclude, the application of this structured safety impact assessment process has shown that SERA Part B air traffic services requirements, which are of a 'rule of the air' nature, ensure a safe air traffic flow within the EU. Indeed all Safety Issues, Recommendations and Assumptions identified during the safety assessment process have been properly addressed by the draft SERA IR v0.2 except issues and Recommendations listed in table 4 below. These Issues and Recommendations shall be considered by the ALGAR drafting group for the very final IR drafting.

Table 4: SERA Part B Issues and Recommendations still open

Ref.	Title
Issue 3	SERA Part B should define accurately the applicability of the meteorological observations reporting when considering the different type of flight (VFR, IFR) and the different airspace classification.
Issue 4	Persons and vehicles operating on the manoeuvring area of an aerodrome shall be regulated by an appropriate regulation to reach an acceptable level of safety (see also Safety Assumption 4).
Issue 6	Determine if ICAO Annex 11 recommendation section 4.2.3 relative to the 'Scope of FIS' should be transposed into SERA Part B.
Issue 9	To inform flight crews of the necessity to, respectively, read back and listen to the read back of the 'newly assigned frequency' and the 'taxi instruction'.
Issue 12	To amend the SERA Part B requirement 3.3.1 wording because 'use of ATIS in directed request/reply transmissions' is ambiguous.
Rec 04	Develop guidance material associated to the SERA Part B 'coordination between the aircraft operator and air traffic services' requirement.

It should be highlighted, that these issues and recommendations will be addressed during the subsequent phases of the SERA project or through a different EASA rulemaking task (e.g. ADR.001).

IV Draft SERA Implementing Rule presented at the 39th meeting of the Single European Sky Committee

Due to the big size of the document, Appendix IV is published on the EASA website (<http://easa.europa.eu/rulemaking/notices-of-proposed-amendment-NPA.php>).

V Table presenting draft SERA Part B versus ICAO SARPs

Due to the big size of the document, Appendix V is published on the EASA website (<http://easa.europa.eu/rulemaking/notices-of-proposed-amendment-NPA.php>).

VI ICAO Annex 11 checklist

Due to the big size of the document, Appendix VI is published on the EASA website (<http://easa.europa.eu/rulemaking/notices-of-proposed-amendment-NPA.php>).