European Aviation Safety Agency — Rulemaking Directorate

Notice of Proposed Amendment 2014-05

Amendment to Commission Implementing Regulation (EU) No 923/2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation (SERA Part C)

RMT.0609 (ATM.001(A)) AND RMT.0610 (ATM.001(B)) — 18.2.2014

EXECUTIVE SUMMARY

This Notice of Proposed Amendment (NPA) addresses safety, and regulatory harmonisation issues related to rules of the air and operational procedures for the use of the European airspace.

The main objectives are to maintain a high level of safety, complete the initial objective of Commission Implementing Regulation (EU) No 923/2012 (hereinafter referred to as the 'SERA IR Regulation') which is the harmonisation of the rules of the air and operational procedures for the use of European airspace. In addition, another objective of this proposal is maintaining the SERA IR Regulation aligned with developments of ICAO Annexes, as much as it is feasibly possible in order to ensure worldwide seamless operations.

The last, but not least, objective is the alignment between the SERA IR Regulation and the provisions in other fields of aviation, to ensure a total system approach.

This NPA proposes an amendment to Commission Implementing Regulation (EU) No 923/2012.

The proposals aim at:

— the finalisation of the SERA IR Regulation with the relevant complementary material from ICAO Document 4444 (PANS-ATM), ICAO Document 7030 and ICAO Document 8168 (PANS-OPS) in particular, but not limited to, the additional requirements in Section 11 – Interference, Emergency Contingencies and Interception, the addition of a new section 13 on the use of SSR transponder and a new section 14 on Voice communication procedures;

— the extension of the scope of the Regulation to cover also aerodrome operators;

— the introduction of recent amendments to ICAO Annex 2 that affect the requirements in the SERA IR Regulation; and

— the alignment with some provisions in the Regulation for aircraft operations and in the Regulation for aerodrome operations.

Applicability		**Process map**	
Affected regulations and decisions:	Commission Implementing Regulation (EU) No 923/2012	Concept Paper:	No
Affected stakeholders:	Member States; competent authorities/national supervisory authorities; ATM/ANS providers; airspace users (e.g. aircraft operators); aerodrome operators and EASA	Terms of Reference:	29.9.2010
		Rulemaking group:	Yes
		RIA type:	Light
		Technical consultation during NPA drafting:	No
		Duration of NPA consultation:	3 months
		Review group:	TBD
		Focussed consultation:	TBD
Driver/origin:	Legal obligation (Basic Regulation, EASp, and ICAO SARPs)	Publication date of the Opinion:	2014/Q4
Reference:	N/A	Publication date of the Decision:	2015/Q3

Table of contents

1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this Notice of Proposed Amendment (NPA) in line with Regulation (EC) No 216/2008[1] (hereinafter referred to as the 'Basic Regulation') and the Rulemaking Procedure[2].

This rulemaking activity is included in the Agency's Rulemaking Programme 2013-2016 under RMT.0149 (ATM.001(b)) 'Extension of the EASA system to safety regulation of Air Traffic Management (ATM) and Air Navigation Services (ANS) — Development of Acceptable Means of Compliance, Guidance Material and Certification Specifications.

The scope and timescale of the task were defined in the related Terms of Reference[3].

The text of this NPA has been developed by the Agency with the support of EUROCONTROL and the group of experts which supported the Agency with the development of SERA 'Part B' and using similar arrangements as those explained in point iii of Chapter IV of the Explanatory Note to NPA 2011-02[4]. It is hereby submitted for consultation of all interested parties[5].

The process map on the title page contains the major milestones of this rulemaking activity to date and provides an outlook of the timescale of the next steps.

1.2. The structure of this NPA and related documents

Chapter 1 of this NPA contains the procedural information related to this task. Chapter 2 (Explanatory Note) explains the core technical content. Chapter 3 contains the proposed text for the new requirements. Chapter 4 contains the Regulatory Impact Assessment showing which options were considered and what impacts were identified, thereby providing the detailed justification for this NPA.

In addition, Chapter 6 contains 2 appendices to the Explanatory Note and the RIA in this NPA:

— Appendix I with the table integrating the content of SERA Part C in Commission Implementing Regulation (EC) No 923/2012 and the origin of the proposals related to SERA Part C; and

— Appendix II with the safety assessment material developed by EUROCONTROL.

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[1] Regulation (EC) No 216/2008 of the European Parliament and 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), as last amended by Commission Regulation (EU) No 6/2013 of 8 January 2013 (OJ L 4, 9.1.2013, p. 34).

[2] The Agency is bound to follow a structured rulemaking 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'. See 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 Decision No 01-2012 of 13 March 2012.

[3] http://easa.europa.eu/rulemaking/terms-of-reference-and-group-composition.php#ATM

[4] http://easa.europa.eu/rulemaking/docs/npa/2011/NPA%202011-02.pdf

[5] In accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

1.3. How to comment on this NPA

Please submit your comments using the automated **Comment-Response Tool (CRT)** available at **http://hub.easa.europa.eu/crt/**[6].

The deadline for submission of comments is **19 May 2014**.

1.4. The next steps in the procedure

Following the closing of the NPA public consultation period, the Agency will review all comments and, depending of the nature and the number of comments, may establish a Review Group and/or perform a focussed consultation with the relevant stakeholders.

The outcome of the NPA public consultation, as well as the outcome of the Review Group work and/or focussed consultation, if needed, will be reflected in the respective Comment-Response Document (CRD).

The Agency is going to publish the related Opinion together with the CRD.

The draft Opinion contained in this NPA proposes changes to Commission Implementing Regulation (EU) No 923/2012[7] and it is addressed to the European Commission, which uses it as a technical basis to prepare a legislative proposal.

This NPA does not contain any draft Decision, and it will be included in a future NPA which will be published in 2014.

[6] In case of technical problems, please contact the CRT webmaster (crt@easa.europa.eu).

[7] Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1)

2. Explanatory Note

2.1. Overview of the issues to be addressed

Article 2.2(d) of the Basic Regulation mandates the Agency 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 the implementation measures. The same Article mandates to aim not only at *high* but also at *uniform* safety.

In addition, Article 8b of the Basic Regulation and its essential requirements contained in paragraph 1(a) of Annex Vb 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.

Moreover, Article 4 of the SES airspace Regulation requires the Commission to adopt implementing rules related to the rules of the air and to uniform application of airspace classification.

The standardised European rules of the air have been developed in two phases:

(a) Phase I: Transposition of the ICAO Annex 2 performed by EUROCONTROL, with the support of the Agency, ICAO and EC, on the basis of a mandate given by the European Commission in 2009. The outcome was the EUROCONTROL Final Report submitted to the European Commission on 30 June 2010.

(b) Phase II: Transposition of the relevant provisions from Annex 11 and Annex 3 performed by EUROCONTROL and the Agency, with the support of ICAO and EC, and of a group of experts from the ATM.001 rulemaking group, in accordance with the terms of the amended SERA mandate. The outcome was the Agency's Opinion No 05/2011 which was submitted to the European Commission on 14 November 2011.

The above-mentioned technical proposals were combined by the European Commission in one integrated structure and after some amendments, the Single European Sky Committee gave a positive vote at its 45th meeting that took place on 15–16 March 2012. The adopted Regulation, i.e. Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Commission Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 has already been published in the Official Journal[8] of the European Union.

The applicability date of the new regulation was the 4th of December 2012, but almost all of the Member States have opted out based on the possibility given to do so in Article 11 of the said Regulation. The final applicability date in the European Union is 4 December 2014.

In order to facilitate Member States and other stakeholders (such as air navigation service providers and airspace users) with the implementation of the said Regulation, the Agency

[8] OJ L 281, 13.10.2012, p. 1

has adopted the ED Decision 2013/013/R[9] which contains an initial set of Acceptable Means of Compliance and Guidance Material to the SERA IR Regulation.

The publication of this NPA represents phase III of the development of standardised European rules of the air which aims at completing the already adopted Implementing Regulation with the complementary elements.

The main issues to be addressed with this proposal are the following:

— the finalisation of the SERA IR Regulation with the relevant complementary material from ICAO Annex 10, Volume II, Document 4444 (PANS-ATM), ICAO Document 7030 and ICAO Document 8168 (PANS-OPS) in particular, but not limited to, the additional requirements in Section 11 – Interference, Emergency Contingencies and Interception, the addition of a new section 13 on the use of SSR transponder and a new section 14 on Voice communication procedures;

— the extension of the scope of the Regulation to cover also aerodrome operators;

— the introduction of recent amendments to ICAO Annex 2 that affects the requirements in the SERA IR Regulation; and

— the alignment with some provisions in the Regulation for aircraft operations and in the Regulation for aerodrome operations.

The detailed explanation and overview of the proposed amendments is explained in section 2.4. For more detailed analysis of the issues addressed by this proposal, please refer to the RIA section 4.1. 'Issues to be addressed'.

The new proposed section 14 on voice communication procedures, is intending to harmonise the phraseology and communication procedures used in ATS voice communications.

Regarding the language to be used, SERA.14015 'Language to be used' requires the air-ground radiotelephony communications to be conducted in the English language or in the language normally used by the station on the ground. However, a number of serious incidents, involving some commercial air transport operators, are related to poor situational awareness from the use of more than one language at major international aerodromes in Europe. Or the use of more than one language at major international aerodromes in Europe has been one of the contributor factors. This issue has been discussed in the past at the EUROCONTROL Safety Regulation Commission (SRC) and a proposal is being made to EUROCONTROL Provisional Council for endorsement to recommend Member States to consider the extension of the use of the English language by qualified pilots on some critical frequencies at aerodromes with international traffic of more than 50 000 commercial Instrument Flight Rules (IFR) movements a year. The use of a single frequency for all the safety critical operations on a runway or a set of runways at these aerodromes is also recommended.

Based on this, the Agency would like to know the opinion of the stakeholders regarding the content of SERA.14015 and the possibility to extend this requirement to require the use of the English language at aerodromes with international traffic of more than 50 000 commercial IFR movements a year.

[9] http://easa.europa.eu/agency-measures/agency-decisions.php

2.2. Objectives

The overall objectives of the EASA system are defined in Article 2 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 2 of this NPA.

The specific objective of this proposal is to complete the initial objective of the SERA IR Regulation, which is the harmonisation of the rules of the air and operational procedure for the use of European airspace.

In addition, another objective of this proposal is maintaining the SERA IR Regulation aligned with developments of ICAO Annexes, as much as it is feasibly possible in order to ensure worldwide seamless operations.

The last, but not least, objective is the alignment between the SERA IR Regulation and the provisions in other fields of aviation, to ensure a total system approach.

2.3. Summary of the Regulatory Impact Assessment (RIA)

2.3.1. Issues

The main issues to address with this NPA are the following:

— Safety by complementing the existing SERA IR Regulation with those complementary elements such as the procedures for the use of the SSR transponder and the procedures for radiotelephony. While those procedures exist in the ICAO documentation, its use across the European Union varies so that it increases the risk of misunderstanding between the different airspace users. Indeed, this has been one of the contributing factors of some incidents (e.g. the use of non-standard phraseology is one very typical factor).

— Regulatory harmonisation. As explained above, these procedures are already contained in the ICAO documentation (SARPs and ICAO documentation), but their transposition and implementation by the European Union Member States vary not supporting either the implementation of Functional Airspace Block (FAB) or the Single European Sky.

2.3.2. Who is affected?

The proposed amendment affects airspace users (private pilots, aircraft operators) air navigation services providers, air traffic controllers and aerodrome operators. The proposal affects also the competent authorities responsible for the airspace matters within the Member States as well as the competent authorities responsible for the oversight of the aircraft operations and air navigation services providers. The proposal affects also Member States.

2.3.3. Options

The following are the possible options for addressing the issues identified above:

Option 0: 'do nothing'. With this Option, the SERA IR Regulation would remain unchanged. The SERA IR Regulation would neither be complemented, nor amended as proposed in this NPA. Member States would need to implement their own national procedures for the identified items.

Option 1: 'making references to ICAO material'. This option would amend the SERA IR Regulation by making references to the ICAO material. The introduction of the references

to ICAO material would still require an amendment to the SERA IR Regulation not only to include the references to the ICAO material, but also to amend those elements of the rule that require amendment because of the detected inconsistency with the air operations requirements, to align with the recent amendment to ICAO Annex 2 or to extend the scope of the rule to make it applicable to the aerodrome operators. In addition, such an approach was considered not to be user-friendly for the affected stakeholders.

Option 2: 'amend and complement the SERA IR Regulation'. With this option the SERA IR Regulation is amended with additional material extracted from ICAO documentation (ICAO Annex 10 Volume II, PANS-ATM, PANS-OPS and ICAO Doc 7030). In addition, with this Option, as with the previous one, the rule would need to be amended in order to ensure the consistency with the air operations requirements, to align with the recent amendment to ICAO Annex 2 and to extend the scope of the rule to be applied to the aerodrome operators.

While all these three options are feasible, it is important to highlight that Option 1 would not represent a difference with regard to today's situation, even though the rule would be amended. Indeed, today's Commission Implementing Regulation (EU) No 1035/2011[10] (hereinafter referred to as the 'common requirements Regulation') makes reference to ICAO material. However, experience has shown that the way the Member States interpret these references and the way it is being implemented vary across the EU leading to a situation in which the issues identified above remain unresolved. This is the reason why this option has not been retained for the rest of the analysis.

2.3.4. Summary of the main impacts

As explained in 4.6.1, the preferred option is Option 2.

Based on the impacts analysis conducted in 4.5, most of the impacts are positive for this Option. The only negative impact is the economic impact which is expected due to the initial implementation cost for Member States and the national air navigation services providers in order to make the necessary changes (in the airspace, procedures, AIP, etc.). It could also represent additional cost for the training of the relevant personnel within the competent authorities, aircraft and aerodrome operators and air navigation services providers.

This negative economic impact is only expected at the beginning of implementing the amendment to the SERA IR Regulation. Ways to reduce the effect of this impact could be the following:

— through the provision of necessary supportive material, AMC and GM to be published by Agency in a future NPA;

— facilitation of training and also safety promotion campaigns; and

— through the provisions of the necessary transitional measures and the necessary time for the entry into force of the amended Regulation.

2.3.5. Open issues

SERA Part C is the last step of the phased approach in the SERA IR Regulation development process focussing on 'Procedures' whereas Part A addresses 'Generalities' and

[10] Commission Implementing Regulation (EU) No 1035/2011 of 17/10/2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No 691/2010. (OJ L/271, 18/10/2011, p.23.)

Part B 'Services'. Therefore, with SERA Part C a full set of harmonised European rules of the air is proposed.

It is necessary to assess the safety impact of such transposition considering the scope of SERA Part C in order to show that the rule is intrinsically safe and complements properly SERA Part A and B to ensure safe air operation and air traffic flow.

A safety impact assessment has been conducted to address the European transposition of procedures for Air Navigation Services relative to Air Traffic Management which are of a 'rules-of-the-air' nature into the single European sky legislative framework. This safety impact assessment is summarised in paragraph 6.2 of this NPA (Appendix II).

This safety impact assessment process has been carried out during the different phases of the development of the rule. The application of this structured safety impact assessment process has shown that SERA Part C 'Procedures for Air Navigation Services relative to Air Traffic Management, which are of a 'rules-of-the-air' nature', ensures a safer air traffic flow within the EU when all issues and assumptions identified during the safety assessment process will be addressed.

Most of these issues have been addressed during the development of the rule as shown in paragraph 6.2, Table 4. However, several issues are still open and need to be considered during the NPA consultation phase as indicated in the following Table 1 below.

The Agency would like to invite the stakeholders to provide their view with regard to the open issues listed below, if possible, justified by safety assessment or consolidated evidence.

Table 1: SERA Part C Open Issues

Reference of the proposed Amendments (section 3 of this NPA)	**Open Issues**	**Status**
SERA 13010 (b) 'Pressure altitude derived information'	Issue Flexibility 02 Confirm that the flexibility ('Unless otherwise prescribed by the…') associated to SERA 13010(b) (Verification of the pressure altitude at controller level) does not impair the 'high' and 'uniform' level of safety.	**OPEN** waiting NPA consultation results for a conclusion on the opportunity to maintain this flexibility
SERA 14085 (a) & (b) 'Voice communication failure'	Issue Correctness 07 Provision for using SSR/ADS-B in case of Radio communication failure and procedures in case of voice communication failure are associated with the more general concern about the Radio Communication Failure (RCF) which should be reviewed and amended by ICAO.	**OPEN** waiting conclusion of the ICAO Communication Failure Coordination Group. Provisions may be revisited after the NPA consultation.
SERA 14005 'categories of message'	Issue Correctness 08 Determine from a safety point of view if the voice communication message category naming and radiotelephony order is correct considering the existing Member State's notified differences.	**OPEN** waiting NPA consultation results to determine if the message category name and radiotelephony order is acceptable by Member States.
SERA 14045 'Transmitting technique'	Issue Correctness 11 Meaning of words and phrases used in radiotelephony provision should be reviewed based on a lot of Member State's notified differences which lead to words/phrase not used and/or new words/phrase used in certain States. This provision should be modified, if necessary, for standardisation purposes.	**OPEN** waiting NPA consultation results to confirm that meaning of words and phrases are acceptable by Member States.
SERA 14055 (b)	Issue Correctness 13	**OPEN** waiting NPA consultation

Reference of the proposed Amendments (section 3 of this NPA)	**Open Issues**	**Status**
'Radiotelephony procedures'	Assess if omitting the ground station call sign for the establishment of radio telecommunications may improve safety standards at busy ATC units.	results to confirm that the proposed SERA 14055(b), which does not authorise the omission of the ground station call sign for the establishment of radio telecommunications at busy ATC units, is acceptable.
SERA 14095 (b) and (c) 'Distress and urgency radiotelephony communication procedures'	Issue Correctness 16 Determine if the number of persons on board shall be added to the list of elements to be transmitted during radiotelephony procedures for distress communications.	**OPEN** waiting NPA consultation results to determine if the number of person on board should be added to distress and/or urgency communications.

2.4. Overview of the proposed amendments

The changes to the SERA IR Regulation laying down the common rules of the air and operational provisions regarding services and procedures in air navigation which are being proposed with this NPA are coming mainly from the following sources:

(a) Relevant material coming from ICAO Document 7030, ICAO Document 4444 (PANS-ATM), ICAO Document 8168 (PANS-OPS) Volume I and ICAO Annex 10 Volume II;

(b) The need to apply the rule to aerodrome operators and personnel working on the operation and maintenance of the aerodrome infrastructure and in particular in the manoeuvring area;

(c) The need to clarify paragraph SERA.3210 paragraph (d)(3) which may be considered necessary by the stakeholders and the relevant question is asked in paragraph 2.4.3 without changing the existing text in the SERA IR Regulation;

(d) The need to align the type of lights to be switched on for balloons with the air operations requirements;

(e) The need to align the SERA IR Regulation with amendment 44 to ICAO Annex 2; and

(f) The need to align the SERA IR Regulation with other EU Regulations.

2.4.1. Proposed amendments coming from the relevant material from ICAO Annex 10 and ICAO Documents

As already explained in NPA 2011-02[11] on SERA Part B, the SERA IR Regulation has been developed based mainly on the whole of ICAO Annex 2 and some parts from Annex 11 and Annex 3 that are considered to be of a 'rules-of-the-air' nature based on an set of agreed drafting principles.

With this NPA, the intention is to complement the set of requirements considered to be of a 'rules-of-the-air' nature with material coming from ICAO Document 7030, ICAO Document 4444 (PANS-ATM), ICAO Document 8168 Volume I and ICAO Annex 10 Volume II. In most of the cases, the ICAO provisions has been transposed without change in the technical meaning. In some cases, the provision has been adapted to become an implementing rule (e.g. 'should' being replaced by 'shall'), and, in other cases, some terms have been

[11] http://easa.europa.eu/rulemaking/r-archives.php#npa

adapted to the European Regulatory framework (e.g. ATS authority has been replaced by competent authority, ATS unit or Air Navigation Service Provider (ANSP)). Generally, changes made to the ICAO text have been carefully dealt with so that the original meaning of the ICAO text has not been changed.

In accordance with its Rulemaking Programme, the Agency will propose Part ATS, which will contain the technical requirements for the provision of ATS derived from PANS-ATM and ICAO Annex 11, which will further develop the third Annex of the common requirements Regulation for the provision of ATM/ANS as indicated in the NPA 2013-08[12].

Following stakeholder's inputs provided during the informal consultation, only those provisions, which after a very careful evaluation, have been considered necessary to complement and complete the existing SERA IR Regulation have been taken for transposition.

The following are the proposed amendments. All the proposed amendments and the exact references from where they are coming from are:

(a) Definitions:

— two definitions have been added to reflect the text transposed in Part C which contains terms which were not in the SERA IR Regulation before. It is the definition of 'Minimum fuel' and of 'ATS surveillance service'. Both definitions are extracted from PANS-ATM;

— some stakeholders requested more clarity about the interpretation of the term 'mountainous area' and the definition of PANS-OPS is proposed for transposition. In addition and to provide better clarity, the term 'mountainous terrain' used in SERA.5005 is replaced by 'mountainous area' which is considered not to change the substance.

The Agency is seeking the opinion of stakeholders and Member States whether the definition of 'mountainous area' should be at the level of IR or it should be done in AMC/GM.

— 'safety-sensitive personnel' is amended to include explicitly '*aerodrome operations, rescue and firefighting and maintenance personnel, personnel allowed unescorted access on the movement area*'

The Agency is seeking the opinion of stakeholders and Member States whether modifying the ICAO definition by including explicitly personnel such as rescue and firefighting in the definition of 'safety-sensitive personnel' will improve the clarity of the relevant provision i.e. SERA.2020.

(b) SERA.5005(e) relevant to Visual Flight Rules (VFR) and Reduced vertical separation minima (RVSM) airspace has been modified to include more specific provisions coming from ICAO Doc 7030 1.2.1.2. The intent with this new proposed provision is that the general ICAO provision from Annex 2 is made more specific to reflect properly the RVSM implementation in the European Union. The proposed amendment indicating the conditions for authorising VFR flights to operate above FL 285 (in

[12] http://easa.europa.eu/rulemaking/notices-of-proposed-amendment-NPA.php

restricted airspace) is in fact an addition to the existing provisions coming from Commission Regulation (EC) No 730/2006[13], in particular Article 4 thereof.

The Agency is seeking the opinion of stakeholders and Member States whether the relevant provisions of Commission Regulation (EC) No 730/2006 should be transposed in SERA in order to improve the readability of the regulatory provisions with respect to access of VFR flights to levels above FL 195.

(c) SERA.5015(c)(3) has been added based on the provision in PANS-ATM 4.8.1 as it was considered that the relevant elements, including specific phraseology, should complement the procedure for making acceptable the change from IFR flight to VFR flight.

(d) A new provision, SERA.7002 'Collision hazard information when ATS based on surveillance are provided' transposing PANS-ATM 8.8.2 is proposed. The intent is to clarify the provision of collision hazards information in a surveillance environment and subject to certain conditions. Based on the comments received to the proposals under SERA Part B, it has been considered clarifying this procedure.

(e) SERA.8012 'Application of wake turbulence separation' has been proposed as a new provision. As per the result of the SERA Part B consultation and adoption, the separation minima shall be selected by the ATS provider, based on the result of a safety assessment which shall be subject to the approval from the competent authority. The exact values for separation minima to be applied in each case are not provided in the present text. However, the circumstances where wake turbulence separation must be applied are considered relevant for rules of the air.

(f) SERA.8015 'Air traffic control clearances', paragraphs (a), (d), (e)(new) and (f)(new) have been modified and added to complement the explanation about the purpose of the clearances, the content of the clearance related to the route of the flight, changes in clearances regarding route or level, the content of the clearance regarding altimeter setting and the conditional clearances. These provisions are taken from PANS-ATM: mainly from chapters 4.5, 4.10 and 12.2.7.

(g) SERA.8020 was amended by removing reference to ICAO regional air navigation agreements in paragraph (b) (3). This paragraph is also modified by replacing the nominal delay of 3 minutes by a delay of 2 minutes, as implemented by Amendment 43 to ICAO Annex 2 applicable as of 15 November 2012.

(h) A new paragraph, SERA.8025(a)(2), has been added to clarify under which conditions the pilots need to resume voice or CPDLC position reporting when they have exempted from the requirement to report over compulsory reporting points. The proposed provision comes from PANS-ATM 8.6.4.4. Reference to the updated Appendix 5 is made to clarify the format of the position repots.

(i) Two new paragraphs have been added to SERA.10001 'Application' to require the reporting of 'Operations normal' message when so prescribed by the competent authority. These two paragraphs come from PANS-ATM 9.2.1.2 and 9.2.1.3. Considering the origin of these provisions from ATM procedures and their normal associated level of flexibility, it was felt necessary to maintain sufficient flexibility in

[13] Commission Regulation (EC) No 730/2006 of 11 May 2006 on airspace classification and access of flights operated under visual flight rules above flight level 195 (OJ L 128, 16.05.2006, p. 3)

10001 b), in order to reflect the European airspace situation. In particular, the original provision in PANS-ATM was associated to a paragraph subject to 'requirement by the appropriate ATS authority'. Therefore, 'When so prescribed by the competent authority' has been added at the beginning of 10001 b).

While a) addresses the requirements to ATS units for the provision of alerting service, 10001 b) is intended to ensure a harmonised implementation of requirements to flight crews to facilitate the provision of alerting service. With the flexibility maintained, b) complements these requirements providing the harmonised means for competent authorities to facilitate, when and where deemed necessary, the provision of alerting services to flights.

(j) Section 11, SERA.11001 and SERA.11005 have been reorganised in a more logical manner. The title of SERA.11010 has been renamed to 'strayed or unidentified aircraft' instead of 'in-flight contingencies', because it has been found more suitable to the content of this article. In this section, three new provisions have been added:

— SERA.11012 'Minimum fuel and fuel emergency' to clarify the action by pilots and controllers in the case 'minimum fuel' is declared by the pilot and also in the case of emergency fuel. The provisions come from PANS-ATM 15.5.4.1 and Annex 10 Vol II, 5.3.2.1.1. It is important to highlight that the issue related to minimum fuel and emergency fuel has been the subject of some serious incidents investigations reports and a number of recommendations have been made to the Agency as well as to other competent authorities, regulators and even ICAO. ICAO through State Letter 10/2012, announced the adopted amendment 36 to Annex 6 Part I effective as of 15 November 2012. This amendment introduced among others new standards for in-flight fuel management and a new fuel-related phraseology. While this amendment will be reflected in the air operations requirements through RMT.0573 & RMT.0574 on fuel planning and management, the Agency has been proactive on the subject and has published SIB 2013-12 'In-flight fuel management — phraseology for fuel related messages to ATC'[14]. This NPA proposes already the relevant requirements from PANS-ATM and Annex 10 regarding the phraseology as already foreseen by the Agency in that SIB.

— SERA.11013 'Degraded aircraft performance' provides for a general requirement for the pilot to act in case of failure of the navigation, communications, altimetry, flight control or other systems that would affect the performance of the aircraft required to fly in that airspace and more in particular the degradation or failure of the RNAV system and the loss of the vertical navigation performance required for RVSM. The provisions come from PANS-ATM 5.2.2, 12.2.4 and 12.2.5 and also from paragraphs 9.4, 9.5.1.1, 9.5.2, 9.5.3 and 9.5.4 of Doc 7030. In order to better reflect the European practices in SERA.11013 (b), besides RNAV, RNP is added.

— SERA.11014 'ACAS resolution advisory (RA)' which contains the provisions for the pilots and controllers to react in the event of an ACAS RA. It was felt necessary to have such provisions in the rules of the air as ACAS RA constitutes a highly safety-sensitive case, especially regarding the interface between pilots and controllers, and the current situation with requirement on pilots appearing

[14] http://ad.easa.europa.eu/ad/2013-12

only in PANS-OPS and requirements on controllers only in PANS-ATM was considered sub-optimal. The present proposal is faithfully aligned with the PANS-OPS and PANS-ATM approach, as recommended by informal consultations and outcomes of other ongoing works including EUROCONTROL working groups, but with the benefit of presenting the whole set of relevant provisions together. The provisions come from, paragraph 3.2, Chapter 3, Section III of PANS-OPS and paragraphs 15.7.3.2 and 15.7.3.3 of PANS-ATM.

(k) In SERA.12005 'Special aircraft observations', a new paragraph (c) has been added coming from paragraphs 4.12.4.1, 4.12.4.2 and 4.12.5 of PANS-ATM and makes references to Appendix 5 amended in order to be aligned with Appendix 1 of PANS-ATM. These provisions complement the existing ones by adding a reference to the reporting forms included in that Appendix. The heading of Appendix 5 is reworded for editorial reasons to better reflect its content.

(l) A new section has been added, section 13 containing provisions governing the use of the Secondary Surveillance Radar (SSR) transponder. The majority of the provisions have been taken from PAN-OPS Vol I, Part III, Section 3, Chapter 1 and PANS-ATM paragraphs in 8.5.

These provisions have been added into the SERA IR Regulation because they are considered to be of a 'rules-of-the-air' nature and also because they have been found to be necessary, in particular from the pilot's point of view, to be introduced into the SERA IR Regulation as it contains important provisions to be known by pilots and controllers to ensure safe operation within the European airspace.

The provisions have been grouped in the following articles:

— SERA.13001 'Operations of SSR transponder'

— SERA.13005 'SSR transponder Mode A code setting'

— SERA.13010 'Pressure altitude derived information'. In paragraph (b), a possibility has been given to the competent authority to allow for alternative means to verify the pressure altitude derived information by each suitably equipped ATC unit. From a technological point of view, the verification should be performed at 'least once by each suitably equipped ATC unit'. In the past, each ATC unit used to have its own surveillance system. The latest technological developments like the integration of multiple surveillance sources into one tracker and the sharing of surveillance data, allow a change in the original requirement to the extent that it is sufficient to perform such verification per ATS system rather than per ATC unit.

From a procedural standpoint, the inclusion of the level information at each communication channel change-over combined with the simultaneous verification of the mode C displayed for that aircraft provided the means for an efficient implementation of this requirement.

Considering that the verification of mode C information can be made per ATS system, the competent authorities should be permitted to reconsider in specified circumstances the requirement for the inclusion of the level information at each communication channel change-over, subject to a safety

assessment carried out by the ATS provider and approved by the competent authority.

This could be considered as less demanding than ICAO PANS-ATM as the SERA provision 'Unless otherwise prescribed' looks more flexible than the ICAO text. On the other hand, the status of ICAO procedures like PANS-ATM is different from the status of standards, and differences could already be applied by Member States and published in their AIP if considered significant, even without notification to ICAO. The present proposed provision being binding when adopted, is not less demanding than the ICAO provision.

Through this NPA and the present section, the Agency is seeking the opinion of stakeholders and Member States on the validity of the approach proposed for SERA.13010.

— SERA.13015 'SSR transponder Mode S aircraft identification setting'

— SERA.13020 'SSR transponder failure when the carriage of a functioning transponder is mandatory'

(m) A new section 14 on 'Voice communication procedures' has been added based mainly on ICAO Annex 10 Vol II chapter 5 and some provisions in PAN-ATM and Annex 11. This section added in SERA is grouping together the various voice communication procedures and phraseology which are extracted from various paragraphs of the ICAO documentation. Standardisation of the voice communication procedures has been identified from the very beginning of the work on the SERA IR Regulation as one of the most important milestones of the Regulation. Lack of standardisation in voice communication procedures and phraseology has been identified to be one of the contributor factors to some serious incidents and even accidents and, therefore, harmonisation within the European airspace is expected to provide safety benefits. In addition, and as already explained in chapter 2.1, the use of the English language in the radiotelephony communications has been recommended by some serious incidents investigation reports and, therefore, a question has been made in this regard. This section contains the following articles:

— SERA.14001 'General'.

— SERA.14005 'Categories of messages' proposes an order of priority in transmission of messages. In the implementation of the provisions in this paragraph, several national notified differences existed in Europe.

The Agency is seeking the opinion of the stakeholders on whether they consider, from the safety point of view, that the ICAO voice communication message category naming and radiotelephony order is appropriate and should be kept identical in SERA or if it should rather be modified and in which way.

— SERA.14010 'Flight safety messages'.

— SERA.14015 'Language to be used'. In this paragraph, it is important to note that the term 'designated aerodromes' which appears in the sequence 'designated aerodromes and routes' used in (b), does not have the meaning of 'designated' like it is the case for example in the SES context for 'designated ANSP'. The meaning here is that it concerns aerodromes and routes which are designated in a list established by the Member States as being *for international*

use and published accordingly in the national AIPs. This explanation will be used to develop Guidance Material associated with SERA.14015.

— SERA.14020 'Word spelling in radiotelephony'.

— SERA.14025 'Principles governing the identification of ATS routes other than standard departure and arrival routes'.

— SERA.14030 'Use of designators for standard instrument departure and arrival routes'.

— SERA.14035 'Transmission of numbers in radiotelephony'. This section introduces a proposal which creates a difference from ICAO as described in 2.4.8. During the rule development, the significant number of national differences notified on this subject and the associated justification were reviewed and the conclusion, significantly building on works of EUROCONTROL working groups, was to propose material which reflects the European practice while differing from ICAO.

— SERA.14040 'Pronunciation of numbers'

— SERA.14045 'Transmitting techniques'. In this paragraph, a number of national differences was published and it is considered that standardisation of the European understanding and utilisation of the ICAO terms would improve safety. It is proposed to use the ICAO table for SERA as shown in the draft IR, but Member States and stakeholders' views will be useful to get a clearer picture of how this specific subject is perceived. Here as well, it is essential to have in mind that sufficient consistency should be maintained with other regions of the world and that any deviation should be justified by a robust safety case.

— SERA.14050 'Radiotelephony call signs for aircraft'. With this paragraph, existing notified national differences were reviewed and assessed, notably one about call sign Type b), which proposed to use all the characters of the registration markings behind the company name, instead of only 4. This option was not considered bringing benefits compared to call sign Type a) using the characters of the registration markings.

— SERA.14055 'Radiotelephony procedures'. Here the draft SERA Part C is proposed identical to the ICAO text.

However, a national difference was notified which allows, for the establishment of radiotelephony communications and for busy ATC under certain circumstances, that the answering ground station omits its own call sign. Views of stakeholders are also sought on this specific point.

— SERA.14060 'Transfer of VHF communications'.

— SERA.14065 'Radiotelephony procedures for air-ground voice communications channel change-over'.

— SERA.14070 'Test procedures'.

— SERA.14075 'Exchange of communications'.

— SERA.14080 'Communications watch/Hours of service'.

— SERA.14085 'Voice communications failure'. Some of the provisions are still under review by the ICAO Communication Failure Coordination Group which has been created by ICAO to review all the communication failure procedures. Depending on the outcome of the work of this group, these provisions may be revisited after the NPA consultation.

— SERA.14090 'Specific communications procedures'

— SERA.14095 'Distress and urgency radiotelephony communication procedures'

On SERA.14095 b) and c), an existing notified difference by one European State has been considered interesting for SERA and the opinion of stakeholders is expected on the option to add 'the number of passengers on board' to the list of elements associated to a distress or urgency call.

2.4.2. Proposed amendments to apply the rule to aerodrome operators and personnel working on the operation and maintenance of the aerodrome infrastructure and in particular on the manoeuvring area

Rules of the air, as their name indicates are the rules to be applied by users of the airspace, but also by the personnel on the ground so as to ensure the correct understanding between the personnel on the ground and the personnel on the air.

While the SERA IR Regulation addresses ground personnel engaged in aircraft operations, it does not address specifically either the aerodrome operators or the personnel working on the operation and maintenance of the aerodrome infrastructure or on the manoeuvring area. That is the reason why paragraph 3 of Article 1 'Subject matter and scope' has been amended as well as the definition of 'safety-sensitive personnel'.

Since article SERA.2001, in the Annex to the regulation is a replica of Article 1 in the cover regulation, the last paragraph of SERA.2001 has also been amended to reflect the amendment of the scope of the regulation.

Moreover, based on the recent developments in aerodromes rules and also based on a need to clarify the different colours being used at taxiways and runways when they are closed, it is proposed to harmonise the existing provision with the clearer wording in ICAO Annex 14. This is the reason why a modification has been proposed to paragraph 3.2.4. 'Closed runways or taxiways' of Appendix 1 to the Regulation. Additionally, paragraph 1.1.2 of Appendix 1 has been modified by replacing the reference to ICAO Annex 10 Volume II with a reference to Section 14 of SERA.

These amendments to the Regulation do not represent differences to ICAO Annex 2, but they complement the existing requirements by expanding its application to aerodrome operators or by clarifying the meaning of the existing sentences (marking colours for taxiways/runways).

2.4.3. Need to clarify paragraph SERA.3210(d)(3) so as to implement measures for preventing runway incursion

With the publication of NPA 2012-06 on Sterile Flight Deck Procedures[15] and the aerodrome operations requirements, the Agency studied the relevant provisions existing across the different regulations being prepared and found inconsistencies in the procedures for taxiing of aircraft on the manoeuvring area. The issue has been dealt with at ICAO level and ICAO published ICAO Runway incursion prevention Manual (9870). The analysis of

[15] http://easa.europa.eu/rulemaking/r-archives.php#npa

SERA.3210(d)(3) concluded that the procedure may not be absolutely clear when an aircraft taxiing on the manoeuvring area shall stop and hold at lighted stop bars which cannot be switched off for example or may proceed after an ATC clearance.

The adopted SERA.3210(d)(2) and (3) provisions presented in the draft IR of the present NPA are transposed from ICAO Annex 2 (3.2.2.7.2 and 3.2.2.7.3) without any change to the original meaning. This was considered to be the appropriate transposition for SERA on the basis that the rule should cover the general case and not the details of specific contingency measures for which a specific safety assessment is necessary. Another opinion has emerged which proposes to insert additional text to cover the cases where the stop bar lights cannot be switched off, with the intention to permit crossing the illuminated stop bars with only a clearance by radio from the aerodrome control tower. The Agency is seeking the views of stakeholders on the relevance of such insertion.

2.4.4. Proposed amendments to align the type of lights to be used on balloons with the air operations requirements

When the SERA IR Regulation was initially developed, the lights requirements being developed by the Agency for balloons as part of the development of the air operations requirements included anti-collision lights as well as position lights. These initial proposals were based on existing Canadian and USA requirements for balloons.

However, based on recent developments, it has been found that on balloons, position lights are not needed but only anti-collision lights. This reasoning is based on the fact that the balloon's speed in fact is always approximately equal to the wind speed at the ambient air layer. With respect to its speed it is, therefore, reasonable to assume that the balloon is an almost static obstacle in the airspace in comparison to the forward speed of an aeroplane or a helicopter. The detection of a balloon by other VFR aircraft and identification as an obstacle is, therefore, much more important than estimating its trajectory. The performance objective of the requirement for lighting is, therefore, collision avoidance. Moreover, balloons tend to rotate around their z-axis so that no component points permanently into the direction of flight.

Additionally, existing technical solutions for the installation of anti-collision lights on balloons have proven to meet the objective. These developments have recently been reflected in the technical requirements in the respective certification specifications. While the amendment is not yet included in CS-31HB or CS-31GB, there are special conditions[16] being published by the Agency that will be the basis for the amendments to the certification specifications.

That is the reason for the proposed amendment to SERA.3215 Lights to be displayed by aircraft.

This amendment does not represent any difference with regard to the ICAO requirements since ICAO Annex 2 does not specify the lights to be displayed by balloons.

[16] http://easa.europa.eu/certification/docs/special-condition/SC%20D-01%2031HB_GB%20External%20and%20Internal%20Lights%20for%20Free%20Balloon%20Night%20Flight%20Issue%202.pdf

2.4.5. Proposed amendments to align the SERA IR Regulation with amendment 44 to ICAO Annex 2

Amendment 44 to ICAO Annex 2 was adopted by the ICAO Council at the fourth meeting of its 198th Session on 25 February 2013. The effected applicability date is 13 November 2014. Therefore, and in order to provide an indication on how the amendment could be implemented in the European regulation, the proposed amendment has been included in this NPA.

Amendment 44 arises from proposals developed by the Secretariat and supported by the Approach Classification Task Force (ACTF) in coordination with the Aerodromes Panel (AP), the Instrument Flight Procedure Panel (IFPP), the Navigation Systems Panel (NSP) and the Operations Panel (OPSP), regarding new approach classification and the introduction of approach procedures with vertical guidance (APV) operations. The amendment concerning new approach classification provisions modifies the existing approach classification in a manner that simplifies and more accurately describes the various types of approach and landing operations, addressing the concerns expressed by Member States and industry since the introduction of the existing classification. The amendment is also related to the harmonisation effort to implement performance-based navigation (PBN) approach operations and vertical guidance, and has the added benefit of optimising runway requirements in relation to the approach operations.

The amendment introduced a new 'instrument approach operation' definition (definition (90)) which is then used in the amended definition of 'instrument approach procedure (IAP)' (which now becomes definition (91)). The proposed amendment itself does not have an impact on the rule using the definition as the operation will be the same. The only change is the definition of such an operation.

It is important to highlight that the rulemaking work to amend the air operations requirements, aerodrome requirements and airworthiness requirements, which are more affected by such a change is being planned to start only in 2014. However, the intention is to reflect the ICAO Amendments, therefore, it has been considered necessary to already now include the amendment to the SERA IR Regulation as part of this NPA.

2.4.6. Proposed amendments for helicopter operations

When the SERA IR Regulation was initially developed, it was felt necessary to maintain a certain level of flexibility for the decisions of the competent authorities in a number of specific cases which may be found throughout the document, including where ICAO was not specific. However, some of these occurrences have been superseded by evolutions which appeared at a later stage in the process of adoption of the SERA IR Regulation. This is e.g. the case regarding minimum visibility for helicopter flying VFR at night, which was possible down to 3 km, based on the airspace classification toolbox recommendations.

Also, regarding the case with the item giving the possibility for competent authorities to allow helicopter operations with visibilities less than 800 m for special cases ('such as medical flights, search and rescue operations and firefighting'), this specific flexibility was intended for exceptional cases which are completely and better covered by Article 4 of the SERA IR Regulation which was not into the initial SERA proposal and was developed following discussions in the SSC.

Therefore, it is proposed to remove the last sentence of the text included in table S5-1 (Visibility and distance from cloud minima), points (c)(3)(iv) and (c)(4) of SERA.5005 (VFR at night), and to adapt the text of SERA.5010 (Special VFR) accordingly.

2.4.7. Proposed amendment of Appendix 4

Following the work done in preparation for the SERA implementation, some comments indicated that in the current layout of the adopted SERA IR Regulation, the description of some items presented in Appendix 4 might be understood as being slightly different from what is stated at SERA.6001.

In particular, for class D airspace, where SERA.6001 states that '...all flights are provided with air traffic control service...' whilst in Appendix 4, in the column 'Service provided' it is indicated that the provision of air traffic control service only relates to IFR flights. The same situation is also applicable to VFR flights in Class C. In this context, it should be noted that, in the column 'Subject to an ATC clearance', the provisions of SERA.6001 are reflected correctly.

The interpretation should be that all flights are provided with air traffic control service, for the reason that they are subject to an air traffic control clearance, even if they are not subject to separation.

In order to avoid any misinterpretation, it is proposed to amend Appendix 4 with regard to description of the provided services for VFR flights in classes 'C' and 'D'.

It should be also noted that with this slight amendment, it will be underlined that the understanding of air traffic control service should not be connected with the provision of separation.

The Agency is seeking the opinion of the stakeholders on whether they consider that the proposed amendment of Annex 4 brings more clarity of the rule.

2.4.8. Proposed content amending the Supplement (differences between SERA and ICAO, as agreed at European level)

SERA.14035 'Transmission of numbers in radiotelephony'. This section introduces a proposal which creates a difference compared to ICAO. The use of the words 'hundred' and 'thousand' is accepted by ICAO as being safe for certain items. The difference created concerns the extension of the pronunciation of numbers containing whole hundreds and whole thousands to be used also for flight levels, transponder codes and barometric pressure. During the rule development, the significant number of national differences notified on this subject and the associated justification were reviewed and the conclusion, significantly building on works of EUROCONTROL working groups, was to propose material which is reflecting the European practice while differing from ICAO.

Following comments received by several stakeholders, it is proposed to delete the difference A2-06 and to subsequently modify difference A2-04. The relevant ICAO provision in Annex 2 paragraph 4.3 gives the possibility to the 'appropriate ATS authority' to prescribe certain conditions and SERA.5005(c) prescribes such conditions which is considered not to constitute a difference.

The numbering of the differences is unchanged since some Member States indicated that they use it to make reference in national documents and this will create unnecessary burden.

SERA.14065 and SERA.14090 — The term 'super' has been introduced in these two paragraphs to reflect the classification which may be applied to some aircraft in the 'heavy' category for wake turbulence. Such classification is subject to the decision of the competent authority, notably considering that it has been described in an ICAO State

Letter of 8 July 2008[17], but not been integrated into the ICAO Annexes. This situation has been reflected by the wording used.

The Agency is seeking the opinion of the stakeholders on whether they consider that the proposed amendment with regard to the use of term 'super' shall be implemented even before the relevant change in ICAO Annexes.

[17] Reference TEC/OPS/SEP – 08-0294.SLG with Subject: 'Wake turbulence aspects of Airbus A380-800 aircraft'

3. Proposed amendments

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

(a) deleted text is marked with ~~strike through~~;

(b) new or amended text is highlighted in grey;

(c) an ellipsis (…) indicates that the remaining text is unchanged in front of or following the reflected amendment.

3.1. Draft Regulation (Draft EASA Opinion)

Article 1

Subject matter and scope

(…)

3. This Regulation shall also apply to the Competent Authorities of the Member States, Air Navigation Service Providers, aerodrome operators and the relevant ground personnel engaged in aircraft operations.

Article 2

Definitions

For the purpose of this Regulation, the following definitions shall apply:

(…)

34a 'ATS surveillance service' means a service provided directly by means of an ATS surveillance system.

(…)

89a. 'instrument approach operation' means an approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

(a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

(b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

90. 'instrument approach procedure (IAP)' means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

(a) *Non-precision approach* (NPA) procedure means an instrument approach procedure ~~which utilises lateral guidance but does not utilise vertical guidance~~ designed for 2D instrument approach operations Type A.

(b) *Approach procedure with vertical guidance* (APV) means ~~an instrument procedure which utilises lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations~~ a performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

(c) *Precision approach* (PA) procedure means an instrument approach procedure ~~using precision lateral and vertical guidance with minima as determined by the category of operation~~ based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B;

94a 'minimum fuel' is a term used to describe a situation in which an aircraft's fuel supply has reached a state where the flight is committed to land at a specific aerodrome and no additional delay can be accepted.

95a 'mountainous area' is an area of changing terrain profile where the changes of terrain elevation exceed 900 m (3 000 ft) within a distance of 18.5 km (10.0 NM).

116. 'safety-sensitive personnel' mean persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to the following;

— aircraft crew members;

— aircraft maintenance personnel;

— aerodrome operations personnel;

— rescue and firefighting personnel;

— aerodrome maintenance personnel;

— other personnel allowed unescorted access on the movement area; and

— air traffic controllers.

~~- crew members, aircraft maintenance personnel and air traffic controllers;~~

ANNEX

RULES OF THE AIR

(…)

SECTION 2

Applicability and compliance

SERA.2001 Applicability

Without prejudice to SERA.1001 above, this Regulation shall apply in accordance with Article 1 in particular to airspace users and aircraft:

(a) operating into, within or out of the Union;

(b) bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.

This Regulation shall also apply to the Competent Authorities of the Member States, Air Navigation Service Providers, aerodrome operators and the relevant ground personnel engaged in aircraft operations.

(…)

SECTION 3

General rules and collision avoidance

(…)

CHAPTER 2

Avoidance of collisions

(…)

SERA.3210 Right-of-way

(…)

(d) Surface movement of aircraft, persons and vehicles.

(…)

(2) At a controlled aerodrome an aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless an explicit clearance to enter or cross the runway has been issued by the aerodrome control tower.

(3) An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further in accordance with (2) when the lights are switched off.

(…)

SERA.3215 Lights to be displayed by aircraft

(a) Except as provided by (e), at night all aircraft in flight shall display:

(1) anti-collision lights intended to attract attention to the aircraft; and

(2) except for balloons, navigation lights intended to indicate the relative path of the aircraft to an observer. ~~and~~ Other lights shall not be displayed if they are likely to be mistaken for these lights~~; or~~

~~(3) in the case of balloons, position lights~~.

(…)

SECTION 5

Visual meteorological conditions, visual flight rules, special VFR and instrument flight rules

(…)

SERA.5001 VMC visibility and distance from clouds

*Table S5-1**

Altitude band	Airspace class	Flight visibility	Distance from cloud
At and above 3 050 m (10 000 ft) AMSL	A** B C D E F G	8 km	1 500 m horizontally 300 m (1 000 ft) vertically
Below 3 050 m (10 000 ft) AMSL and above 900 m (3 000 ft) AMSL, or above 300 m (1 000 ft) above terrain, whichever is the higher	A**B C D E F G	5 km	1 500 m horizontally 300 m (1 000 ft) vertically

At and below 900 m (3 000 ft) AMSL, or 300 m (1 000 ft) above terrain, whichever is the higher	A**B C D E	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
	F G	5 km***	Clear of cloud and with the surface in sight

* When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 shall be used in lieu of 10 000 ft.

** The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.

*** When so prescribed by the competent authority:
a) flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:

1) at speeds of 140 kts IAS or less to give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or

2) in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels.

b) HELICOPTERS may be permitted to operate *in less than 1 500 m* but not less than 800 m flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision. ~~Flight visibilities lower than 800 m may be permitted for special cases, such as medical flights, search and rescue operations and fire-fighting.~~

(…)

SERA.5005 Visual Flight Rules

(…)

(c) When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:

(1) if leaving the vicinity of an aerodrome, a flight plan shall be submitted in accordance with SERA.4001(b)(6);

(2) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;

(3) the VMC visibility and distance from cloud minima as specified in Table S5-1 shall apply except that:

(i) the ceiling shall not be less than 450 m (1 500 ft);

(ii) ~~except as specified in (c)(4),~~ the reduced flight visibility provisions specified in Table S5-1(a) and (b) shall not apply;

(iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3 000 ft) above MSL or 300 m (1 000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface; and

~~(iv) for helicopters in airspace classes F and G at and below 900 m (3 000 ft) above MSL or 300 m (1 000 ft) above terrain, whichever is the higher, flight visibility shall not be less than 3 km, provided that the pilot maintains continuous sight of the surface and if manoeuvred at a speed that will give adequate opportunity to observe other traffic or obstacles in time to avoid collision; and~~

(iv~~v~~) for mountainous ~~terrain~~ area, higher VMC visibility and distance from cloud minima may be prescribed by the competent authority;

~~(4) ceiling, visibility and distance from cloud minima lower than those specified in (3) may be permitted for helicopters in special cases, such as medical flights, search and rescue operations and fire-fighting.~~

(4~~5~~) except when necessary for take-off or landing, or except when specifically authorised by the competent authority, a VFR flight at night shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

(…)

(e) Unless operated in restricted airspace, a~~A~~uthorisation for VFR flights to operate above FL 285 shall not be granted ~~where a vertical separation minimum of 300 m (1 000 ft) is applied above FL 290~~.

SERA.5010 Special VFR in control zones

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:

(…)

SERA.5015 Instrument Flight Rules (IFR) - Rules Applicable to All IFR Flights

(…)

(c) Change from IFR Flight to VFR Flight

(1) An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan.

(2) When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted visual meteorological conditions.

(3) Change from IFR flight to VFR flight shall only be acceptable when a message initiated by the pilot-in-command containing the specific expression 'CANCELLING MY IFR FLIGHT', together with the changes, if any, to be made to the current flight plan, is received by an air traffic services unit. No invitation to change from IFR flight to VFR flight shall be made either directly or by inference.

(…)

SECTION 7

Air traffic services

(…)

SERA.7002 Collision hazard information when ATS based on surveillance are provided

(a) When an identified controlled flight is observed to be on a conflicting path with an unknown aircraft deemed to constitute a collision hazard, the pilot of the controlled flight shall, whenever practicable:

(1) be informed of the unknown aircraft, and if the pilot so requests or if the situation so warrants in the opinion of the controller, avoiding action shall be suggested; and

(2) be notified when the conflict no longer exists.

(…)

SECTION 8

Air traffic control service

(…)

SERA.8012 Application of wake turbulence separation

(a) Wake turbulence separation shall be applied to aircraft in the approach and departure phases of flight in the following circumstances:

(1) an aircraft is operating directly behind another aircraft at the same altitude or less than 300 m (1 000 ft) below; or

(2) both aircraft are using the same runway, or parallel runways separated by less than 760 m (2 500 ft); or

(3) an aircraft is crossing behind another aircraft, at the same altitude or less than 300 m (1 000 ft) below.

SERA.8015 Air traffic control clearances

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

(1) Clearances shall be issued solely for expediting and separating air traffic and are based on known traffic conditions which affect safety in aircraft operation. Such traffic conditions include not only aircraft in the air and on the manoeuvring area over which control is being exercised, but also any vehicular traffic or other obstructions not permanently installed on the manoeuvring area in use.

(2) ATC units shall issue such ATC clearances as are necessary to prevent collisions and to expedite and maintain an orderly flow of air traffic.

(3) ATC clearances shall be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with them.

(b) Operation subject to clearance

(1) An air traffic control clearance shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.

(2) The pilot-in-command of an aircraft shall inform ATC if an air traffic control clearance is not satisfactory. In such cases, ATC will issue an amended clearance, if practicable.

(3) Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.

(4) Potential reclearance in flight. If, prior to departure, it is anticipated that, depending on fuel endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.

(5) An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome control tower and shall comply with any instructions given by that unit.

(c) Clearances for transonic flight

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

(d) Contents of clearances

An air traffic control clearance shall indicate:

(1) aircraft identification as shown in the flight plan;

(2) clearance limit;

(3) route of flight;

(i) The route of flight shall be detailed in each clearance when deemed necessary.

(ii) The phrase 'cleared via flight planned route' shall not be used when granting a re-clearance.

(4) level(s) of flight for the entire route or part thereof and changes of levels if required;

(5) any necessary instructions or information on other matters such as approach or departure manoeuvres, communications and the time of expiry of the clearance.

(e) Changes in clearance regarding route or level

(1) When issuing a clearance covering a requested change in route or level, the exact nature of the change shall be included in the clearance.

(2) When traffic conditions will not permit clearance of a requested change, the word 'UNABLE' shall be used. When warranted by circumstances, an alternative route or level shall be offered.

(f) Clearance related to altimetry

(1) For flights in the vicinity of aerodromes and within terminal control areas, the vertical position of aircraft shall, except as provided for in (5) below, be expressed in terms of altitudes at or below the transition altitude and in terms of flight levels at or above the transition level. While passing through the transition layer, vertical position shall be expressed in terms of flight levels when climbing and in terms of altitudes when descending.

(2) The flight crew shall be provided with the transition level in due time prior to reaching it during descent.

(3) A QNH altimeter setting shall be included in the descent clearance when first cleared to an altitude below the transition level, in approach clearances or clearances to enter the traffic circuit, and in taxi clearances for departing aircraft, except when it is known that the aircraft has already received the information in a directed transmission.

(4) A QFE altimeter setting shall be provided to aircraft on request or on a regular basis in accordance with local arrangements.

(5) When an aircraft, which has been given clearance to land, is completing its approach using atmospheric pressure at aerodrome elevation (QFE), the vertical position of the aircraft shall be expressed in terms of height above aerodrome elevation during that portion of its flight for which QFE may be used, except that it shall be expressed in terms of height above runway threshold elevation:

(i) for instrument runways, if the threshold is 2 m (7 ft) or more below the aerodrome elevation; and

(ii) for precision approach runways.

(g) Conditional clearances

Conditional phrases, such as 'behind landing aircraft' or 'after departing aircraft', shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot. The aircraft or vehicle causing the condition in the clearance issued shall be the first aircraft/vehicle to pass in front of the other aircraft concerned. In all cases, a conditional clearance shall be given in the following order and consist of:

(1) identification;

(2) the condition;

(3) the clearance; and

(4) brief reiteration of the condition.

(~~e~~ h) Read-back of clearances and safety-related information

(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:

(i) ATC route clearances;

(ii) clearances and instructions to enter, land on, take off from, hold short of, cross, taxi and backtrack on any runway; and

(iii) runway-in-use, altimeter settings, SSR codes, newly assigned communication channels, level instructions, heading and speed instructions; and

(iv) transition levels, whether issued by the controller or contained in ATIS broadcasts.

(2) 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.

(3) 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.

(4) Voice read-back of CPDLC messages shall not be required, unless otherwise specified by the ANSP.

(~~f~~ i) Coordination of clearances

(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 described in provisions (2) to (6).

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

(i) when it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or

(ii) when there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

(3) When coordination as in (2) 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.

(4) 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.

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

(ii) A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.

(iii) 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.

(5) 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.

(6) 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 the 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.

SERA.8020 Adherence to flight plan

(…)

(b) Inadvertent changes. In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:

(1) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.

(2) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.

(3) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of ~~3~~ 2 minutes from that notified to air traffic services, or such other period of time as is prescribed by the competent authority ~~or on the basis of ICAO regional air navigation agreements~~, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.

(…)

SERA.8025 Position Reports

(a) Unless exempted by the competent authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the competent authority or specified by the appropriate air traffic services unit.

(1) Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested.

(2) When a controlled flight has been exempted from the requirement to report over compulsory reporting points, pilots shall resume voice or CPDLC position reporting:

(i) when so instructed;

(ii) when advised that the ATS surveillance service has been terminated; or

(iii) when advised that ATS surveillance identification is lost

unless automated position reporting is in effect.

(3) The format of position reports shall be in accordance with Appendix 5.

(…)

SECTION 10

Alerting service

(…)

SERA.10001 Application

(a) Alerting service shall be provided by the air traffic services units:

(1) for all aircraft provided with air traffic control service;

(2) in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and

(3) to any aircraft known or believed to be the subject of unlawful interference.

(b) When so prescribed by the competent authority, aircraft equipped with suitable two-way radio-communications shall report during the period 20 to 40 minutes following the time of last contact, whatever the purpose of such contact, merely to indicate that the flight is progressing according to plan. Such a report has to comprise identification of the aircraft and the words 'Operations normal'.

(c) The 'Operations normal' message shall be transmitted air-ground to an appropriate air traffic services unit.

(…)

SECTION 11

Interference, Emergency Contingencies and Interception

SERA.11001 ~~Unlawful interference~~ General

~~(a) An aircraft which is being subjected to unlawful interference shall endeavour to set the transponder to Code 7500 and notify the appropriate ATS unit of, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimize conflict with other aircraft.~~

~~(b) If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the competent authority unless considerations aboard the aircraft dictate otherwise.~~

(a) 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.

(b) Subsequent ATC actions will be based on the intentions of the pilot, the overall air traffic situation and the real-time dynamics of the contingency.

SERA.11005 ~~Service to aircraft in the event of an emergency~~ Unlawful interference

~~(a) 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.~~

(a) An aircraft which is being subjected to unlawful interference shall endeavour to set the transponder to Code 7500 and notify the appropriate ATS unit of any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimise conflict with other aircraft.

(b) If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the competent authority unless considerations aboard the aircraft dictate otherwise.

(~~b~~c) 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.

(c~~d~~) 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.

SERA.11010 ~~In-flight contingencies~~ Strayed or unidentified aircraft

(a) As soon as an air traffic services unit becomes aware of a strayed aircraft it shall take all necessary steps as outlined in (1) and (3) to assist the aircraft and to safeguard its flight.

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

(i) attempt to establish two-way communication with the aircraft, unless such communication already exists;

(ii) use all available means to determine its position;

(iii) 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;

(iv) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft;

(v) request from the units referred to in (iii) and (iv) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

(2) The requirements in (1)(iv) and (1)(v) shall apply also to air traffic services units informed in accordance with (1)(iii).

(3) When the aircraft's position is established, the air traffic services unit shall:

(i) 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

(ii) 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.

(b) 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:

(1) attempt to establish two-way communication with the aircraft;

(2) 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;

(3) 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;

(4) attempt to obtain information from other aircraft in the area.

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

(c) 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.

SERA.11012 Minimum Fuel and Fuel Emergency

(a) When a pilot reports a state of minimum fuel, the controller shall inform the pilot as soon as practicable of any anticipated delays or that no delays are expected.

(b) When the level of fuel renders declaring a situation of distress necessary, the pilot, in accordance with SERA.14095, shall indicate this by using the radiotelephony distress signal (MAYDAY), preferably spoken 3 times, followed by the nature of the distress condition (FUEL).

SERA.11013 Degraded aircraft performance

(a) Whenever, as a result of failure or degradation of navigation, communications, altimetry, flight control or other systems, aircraft performance is degraded below the level required for the airspace in which it is operating, the flight crew shall advise the ATC unit concerned without delay. Where the failure or degradation affects the separation minimum currently being employed, the controller shall take action to establish another appropriate type of separation or separation minimum.

(b) Degradation or failure of the RNAV system

When an aircraft cannot meet the specifications, as required by the RNAV/RNP airspace, route or procedure, as a result of a failure or degradation of the RNAV system, a revised clearance shall be requested by the pilot.

(c) Loss of vertical navigation performance required for RVSM

(1) The pilot shall inform ATC as soon as possible of any circumstances where the vertical navigation performance requirements for RVSM airspace cannot be maintained. In such cases, the pilot shall obtain a revised ATC clearance prior to initiating any deviation from the cleared route and/or flight level, whenever possible. When a revised ATC clearance cannot be obtained prior to such a deviation, the pilot shall obtain a revised clearance as soon as possible thereafter.

(2) During operations in or vertical transit through reduced vertical separation minimum (RVSM) airspace with aircraft not approved for RVSM operations, pilots shall report non-approved status as follows:

(i) at initial call on any channel within RVSM airspace;

(ii) in all requests for level changes; and

(iii) in all readbacks of level clearances.

(3) Air traffic controllers shall explicitly acknowledge receipt of messages from aircraft reporting RVSM non-approved status.

(4) Degradation of aircraft equipment — pilot reported

(i) When informed by the pilot of an RVSM-approved aircraft operating in RVSM airspace that the aircraft's equipment no longer meets the RVSM requirements, ATC shall consider the aircraft as non-RVSM-approved.

(ii) ATC shall take action immediately to provide a minimum vertical separation of 600 m (2 000 ft) or an appropriate horizontal separation from all other aircraft concerned that are operating in RVSM airspace. An aircraft rendered non-RVSM-approved shall normally be cleared out of RVSM airspace by ATC when it is possible to do so.

(iii) Pilots shall inform ATC, as soon as practicable, of any restoration of the proper functioning of equipment required to meet the RVSM requirements.

(iv) The first ACC to become aware of a change in an aircraft's RVSM status shall coordinate with adjacent ACCs, as appropriate.

(5) Severe turbulence — not forecast

(i) When an aircraft operating in RVSM airspace encounters severe turbulence due to weather or wake vortex that the pilot believes will impact the aircraft's capability to maintain its cleared flight level, the pilot shall inform ATC. ATC shall establish either an appropriate horizontal separation or an increased minimum vertical separation.

(ii) ATC shall, to the extent possible, accommodate pilot requests for flight level and/or route changes and shall pass on traffic information as required.

(iii) ATC shall solicit reports from other aircraft to determine whether RVSM shall be suspended entirely or within a specific flight level band and/or area.

(iv) The ACC suspending RVSM shall coordinate such suspension(s) and any required adjustments to sector capacities with adjacent ACCs, as appropriate, to ensure an orderly progression to the transfer of traffic.

(6) Severe turbulence — forecast

(i) When a meteorological forecast is predicting severe turbulence within RVSM airspace, ATC shall determine whether RVSM shall be suspended and, if so, for how long and for which specific flight level(s) and/or area.

(ii) In cases where RVSM will be suspended, the ACC suspending RVSM shall coordinate with adjacent ACCs with regard to the flight levels appropriate for the transfer of traffic, unless a contingency flight level allocation scheme has been determined by letter of agreement. The ACC suspending RVSM shall also coordinate applicable sector capacities with adjacent ACCs as appropriate.

SERA.11014 ACAS resolution advisory (RA)

(a) In the event of an RA, pilots shall:

(1) respond immediately by following the RA as indicated, unless doing so would jeopardise the safety of the aeroplane;

(2) follow the RA even if there is a conflict between the RA and an air traffic control (ATC) instruction to manoeuvre;

(3) not manoeuvre in the opposite sense to an RA;

(4) as soon as possible, as permitted by flight crew workload, notify the appropriate ATC unit of any RA which requires a deviation from the current ATC instruction or clearance;

(5) promptly comply with any modified RAs;

(6) limit the alterations of the flight path to the minimum extent necessary to comply with the RAs;

(7) promptly return to the terms of the ATC instruction or clearance when the conflict is resolved; and

(8) notify ATC when returning to the current clearance.

(b) When a pilot reports an ACAS resolution advisory (RA), the controller shall not attempt to modify the aircraft flight path until the pilot reports 'CLEAR OF CONFLICT'.

(c) Once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the RA. The controller shall resume responsibility for providing separation for all the affected aircraft when:

(1) the controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance, or

(2) the controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

(…)

SECTION 12

Services related to meteorology — Aircraft observations and reports by voice communications

(…)

SERA.12005 Special aircraft observations

(a) Special observations shall be made and reported by all aircraft whenever the following conditions are encountered or observed:

(1) moderate or severe turbulence; or

(2) moderate or severe icing; or

(3) severe mountain wave; or

(4) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or

(5) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or

(6) heavy dust storm or heavy sandstorm; or

(7) volcanic ash cloud; or

(8) pre-eruption volcanic activity or a volcanic eruption.

(b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.

(c) Flight crews shall compile the reports using forms based on the model AIREP SPECIAL form at Appendix 5. The detailed instructions for reporting, as given at Appendix 5, shall be complied with.

(1) The detailed instructions, including the formats of messages and the phraseologies given at Appendix 5, shall be used by flight crews when transmitting air-reports and by air traffic services units when retransmitting such reports.

(2) Special air-reports containing observations of volcanic activity shall be recorded on the special air-report of volcanic activity form. Forms based on the model form for special air-reports of volcanic activity at Appendix 5 shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.

(…)

SERA.12020 Exchange of air-reports

(a) ATS units shall transmit, as soon as practicable, special and non-routine air-reports to:

(1) other aircraft concerned;

(2) the associated meteorological watch office (MWO) in accordance with Appendix 5; and

(3) other ATS units concerned.

(…)

SECTION 13

Use of SSR transponders

SERA.13001 Operation of SSR transponder

(a) When an aircraft carries a serviceable transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes.

(b) Pilots shall not operate the IDENT feature unless requested by ATC.

SERA.13005 SSR transponder Mode A code setting

(a) To indicate that it is in a specific contingency situation, the pilot of an aircraft equipped with SSR shall:

(1) select Code A7700 to indicate a state of emergency unless ATC has previously directed the pilot to operate the transponder on a specified code. In the latter case, a pilot may nevertheless select Code A7700 whenever there is a specific reason to believe that this would be the best course of action;

(2) select Code A7600 to indicate a state of radio-communication failure;

(3) attempt to select Code A7500 to indicate a state of unlawful interference. If circumstances so warrant, Code A7700 shall be used instead.

(b) Except in cases described in SERA.13005 (a) above, the pilot shall:

(1) operate the transponder and select Mode A codes as directed by the ATS unit with which contact is being made; or

(2) operate the transponder Mode A Code 7000 when not receiving ATS service in order to improve detection of suitably equipped aircraft in areas specified by the competent authority; or

(3) in absence of ATS directions, operate the transponder Mode A codes as prescribed by the competent authority.

(c) When it is observed that the Mode A code shown on the situation display is different to what has been assigned to the aircraft:

(1) the pilot shall be requested to confirm the code selected and, if the situation warrants, to reselect the correct code;

(2) if the discrepancy between assigned and displayed Mode A codes still persists, the pilot may be requested to stop the operation of the aircraft's transponder. The next control position and any other affected unit using SSR in the provision of ATS shall be informed accordingly.

SERA.13010 Pressure altitude derived information

(a) When the aircraft carries serviceable Mode C equipment, the pilot shall continuously operate this mode unless otherwise dictated by ATC.

(b) Unless otherwise prescribed by the competent authority, verification of the pressure altitude derived level information displayed to the controller shall be effected at least once by each suitably equipped ATC unit on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter.

SERA.13015 SSR transponder Mode S aircraft identification setting

(a) Aircraft equipped with Mode S having an aircraft identification feature shall transmit the aircraft identification as specified in Item 7 of the ICAO flight plan or, when no flight plan has been filed, the aircraft registration.

(b) Whenever it is observed on the situation display that the aircraft identification transmitted by a Mode S-equipped aircraft is different from that expected from the aircraft, the pilot shall be requested to confirm and, if necessary, re-enter the correct aircraft identification.

(c) If, following confirmation by the pilot that the correct aircraft identification has been set on the Mode S identification feature, the discrepancy continues to exist, the following actions shall be taken by the controller:

(1) inform the pilot of the persistent discrepancy;

(2) where possible, correct the label showing the aircraft identification on the situation display; and

(3) notify the next control position and any other unit concerned using Mode S for identification purposes that the aircraft identification transmitted by the aircraft is erroneous.

SERA.13020 SSR transponder failure when the carriage of a functioning transponder is mandatory

(a) In case of a transponder failure after departure, ATC units shall attempt to provide for continuation of the flight to the destination aerodrome in accordance with the flight plan. Pilots may, however, expect to comply with specific restrictions.

(b) In the case of a transponder which has failed and cannot be restored before departure, pilots shall:

(1) inform ATS as soon as possible, preferably before submission of a flight plan;

(2) insert in item 10 of the ICAO flight plan form under SSR the character N for complete unserviceability of the transponder or, in case of partial transponder failure, insert the character corresponding to the remaining transponder capability;

(3) comply with any published procedures for requesting an exemption from the requirements to carry a functioning SSR transponder.

SECTION 14

Voice communication procedures

SERA.14001 General

Standardised phraseology shall be used in all situations for which it has been specified. Only when standardised phraseology cannot serve an intended transmission, plain language shall be used.

SERA.14005 Categories of messages

(a) The categories of messages handled by the aeronautical mobile service and the order of priority in the establishment of communications and the transmission of messages shall be in accordance with table S14-1.

Table S14-1

Message category and Radiotelephony order of priority signal		*Radiotelephony signal*
(a)	Distress calls, distress messages and distress traffic	**MAYDAY**
(b)	Urgency messages, including messages preceded by the medical transports signal	**PAN PAN** *or* **PAN PAN MEDICAL**
(c)	Communications relating to direction finding	—
(d)	Flight safety messages	—
(e)	Meteorological messages	—
(f)	Flight regularity messages	—

(b) *Distress messages* and *distress traffic* shall be handled in accordance with the provisions of SERA 14095.

(c) *Urgency messages* and *urgency traffic*, including messages preceded by the medical transports signal, shall be handled in accordance with the provisions of SERA.14095.

SERA.14010 Flight safety messages

Flight safety messages shall comprise the following:

(a) movement and control messages;

(b) messages originated by an aircraft operator or by an aircraft, of immediate concern to an aircraft in flight;

(c) meteorological advice of immediate concern to an aircraft in flight or about to depart (individually communicated or for broadcast);

(d) other messages concerning aircraft in flight or about to depart.

SERA.14015 Language to be used

(a) The air-ground radiotelephony communications shall be conducted in the English language or in the language normally used by the station on the ground.

(b) The English language shall be available, on request from any aircraft, at all stations on the ground serving designated aerodromes and routes used by international air services.

(c) The languages available at a given station on the ground shall form part of the Aeronautical Information Publications and other published aeronautical information concerning such facilities.

SERA.14020 Word spelling in radiotelephony

When proper names, service abbreviations and words of which the spelling is doubtful are spelled out in radiotelephony, the alphabet in table S14-2 shall be used.

Table S14-2

The Radiotelephony Spelling Alphabet

Letter	*Word*	*Approximate pronunciation* *Latin alphabet representation*
A	**Alfa**	AL FAH
B	**Bravo**	BRAH VOH
C	**Charlie**	CHAR LEE *or* SHAR LEE
D	**Delta**	DELL TAH
E	**Echo**	ECK OH
F	**Foxtrot**	FOKS TROT
G	**Golf**	GOLF
H	**Hotel**	HO TELL
I	**India**	IN DEE AH
J	**Juliett**	JEW LEE ETT
K	**Kilo**	KEY LOH
L	**Lima**	LEE MAH
M	**Mike**	MIKE
N	**November**	NO VEM BER
O	**Oscar**	OSS CAH
P	**Papa**	PAH PAH
Q	**Quebec**	KEH BECK
R	**Romeo**	ROW ME OH
S	**Sierra**	SEE AIR RAH
T	**Tango**	TANG GO
U	**Uniform**	YOU NEE FORM *or* OO NEE FORM
V	**Victor**	VIK TAH
W	**Whiskey**	WISS KEY
X	**X-ray**	ECKS RAY
Y	**Yankee**	YANG KEY
Z	**Zulu**	ZOO LOO

In the approximate representation using the Latin alphabet, syllables to be emphasised are underlined.

SERA.14025 Principles governing the identification of ATS routes other than standard departure and arrival routes

(a) Use of ATS route designators in communications

(1) In voice communications, the basic letter of a designator shall be spoken in accordance with the spelling alphabet as defined in table S14-2.

(2) Where the prefixes K, U or S are used, they shall, in voice communications, be spoken as follows:

K — KOPTER

U — UPPER

S — SUPERSONIC

(b) The word 'kopter' shall be pronounced as in the word 'helicopter' and the words 'upper' and 'supersonic' as in the English language.

SERA.14030 Use of designators for standard instrument departure and arrival routes

The plain language designator of standard instrument departure or arrival routes shall be used in voice communications.

SERA.14035 Transmission of numbers in radiotelephony

(a) Transmission of numbers

(1) All numbers used in the transmission of aircraft call sign, headings, runway, wind direction and speed shall be transmitted by pronouncing each digit separately.

(i) Flight levels shall be transmitted by pronouncing each digit separately except for the case of flight levels in whole hundreds.

(ii) The altimeter setting shall be transmitted by pronouncing each digit separately except for the case of a setting of 1 000 hPa which shall be transmitted as ONE THOUSAND.

(iii) All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the information shall be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND.

(2) All numbers used in transmission of other information than those described in (a)(1) shall be transmitted by pronouncing each digit separately, except that all numbers containing whole hundreds and whole thousands, shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND followed by the number of hundreds followed by the word HUNDRED.

(3) In cases where there is a need to clarify the number transmitted as whole thousands and/or whole hundreds, the number shall be transmitted by pronouncing each digit separately.

(4) When providing information regarding relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the digits together such as TEN O'CLOCK or ELEVEN O'CLOCK.

(5) Numbers containing a decimal point shall be transmitted as prescribed in (a)(1) with the decimal point in appropriate sequence being indicated by the word DECIMAL.

(6) All six digits of the numerical designator shall be used to identify the transmitting channel in VHF radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits shall be used.

SERA.14040 Pronunciation of numbers

When the language used for communication is English, numbers shall be transmitted using the pronunciation shown in table S14-3:

Table S14-3

Numeral or numeral element	*Pronunciation*
0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-er
5	FIFE
6	SIX
7	SEV-en
8	AIT
9	NIN-er
Decimal	DAY-SEE-MAL
Hundred	HUN-dred
Thousand	TOU-SAND

SERA.14045 Transmitting technique

(a) Transmissions shall be conducted concisely in a normal conversational tone.

(b) The following words and phrases shall be used in radiotelephony communications as appropriate and shall have the meaning ascribed in table S14-4:

Table S14-4

Phrase	*Meaning*
ACKNOWLEDGE	'Let me know that you have received and understood this message.'
AFFIRM	'Yes.'
APPROVED	'Permission for proposed action granted.'
BREAK	'I hereby indicate the separation between portions of the message.'
BREAK BREAK	'I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment.'
CANCEL	'Annul the previously transmitted clearance.'
CHECK	'Examine a system or procedure.'
CLEARED	'Authorised to proceed under the conditions specified.'
CONFIRM	'I request verification of: (*clearance, instruction, action, information*).'
CONTACT	'Establish communications with...'
CORRECT	'True' or 'Accurate'.
CORRECTION	'An error has been made in this transmission (*or* message indicated). The correct version is...'
DISREGARD	'Ignore.'
HOW DO YOU READ	'What is the readability of my transmission?' *(*see SERA.14070(c))
I SAY AGAIN	'I repeat for clarity or emphasis.'
MAINTAIN	'Continue in accordance with the condition(s) specified' or in its literal sense.
MONITOR	'Listen out on (frequency).'
NEGATIVE	'No' *or* 'Permission not granted' *or* 'That is not correct' *or* 'Not capable'.

OVER	'My transmission is ended, and I expect a response from you.'
OUT	'This exchange of transmissions is ended and no response is expected.'
READ BACK	'Repeat all, or the specified part, of this message back to me exactly as received.'
RECLEARED	'A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.'
REPORT	'Pass me the following information...'
REQUEST	'I should like to know...' *or* 'I wish to obtain...'
ROGER	'I have received all of your last transmission.'
SAY AGAIN	'Repeat all, or the following part, of your last transmission.'
SPEAK SLOWER	'Reduce your rate of speech.'
STANDBY	'Wait and I will call you.'
UNABLE	'I cannot comply with your request, instruction, or clearance.'
WILCO	*(Abbreviation for 'will comply'.)* 'I understand your message and will comply with it.'
WORDS TWICE	a) *As a request:* 'Communication is difficult. Please send every word, or group of words, twice.' b) *As information:* 'Since communication is difficult, every word, or group of words, in this message will be sent twice.'

SERA.14050 Radiotelephony call signs for aircraft

(a) Full call signs

An aircraft radiotelephony call sign shall be one of the following types:

(1) Type a) — the characters corresponding to the registration marking of the aircraft; or

(2) Type b) — the telephony designator of the aircraft operator, followed by the last four characters of the registration marking of the aircraft;

(3) Type c) — the telephony designator of the aircraft operator, followed by the flight identification.

(b) Abbreviated call signs

The aircraft radiotelephony call signs shown in (a), with the exception of Type c), may be abbreviated in the circumstances prescribed in SERA.14065(d)(1). Abbreviated call signs shall be in the following form:

(1) Type a) — the first character of the registration and at least the last two characters of the call sign;

(2) Type b) — the telephony designator of the aircraft operator, followed by at least the last two characters of the call sign;

(3) Type c) — no abbreviated form.

SERA.14055 Radiotelephony procedures

(a) An aircraft shall not change the type of its radiotelephony call sign during flight, except temporarily on the instruction of an air traffic control unit in the interests of safety. Except for reasons of safety, no transmission shall be directed to an aircraft during take-off, during the last part of the final approach or during the landing roll.

(b) Establishment of radiotelephony communications

(1) Full radiotelephony call signs shall always be used when establishing communication. The calling procedure of an aircraft establishing communication shall be in accordance with SERA.14050(a).

(2) The reply to the above calls shall use the call sign of the station calling, followed by the call sign of the station answering, which shall be considered an invitation to proceed with transmission by the station calling.

(3) Communications shall commence with a call and a reply when it is desired to establish contact, except that, when it is certain that the station called will receive the call, the calling station may transmit the message, without waiting for a reply from the station called.

SERA.14060 Transfer of VHF communications

(a) An aircraft shall be advised by the appropriate ATS unit to transfer from one radio frequency to another in accordance with agreed procedures. In the absence of such advice, the aircraft shall notify the ATS unit before such a transfer takes place.

(b) When establishing initial contact on, or when leaving, a VHF frequency, an aircraft shall transmit such information as may be prescribed by the ANSP responsible for the provisions of services.

SERA.14065 Radiotelephony procedures for air-ground voice communication channel changeover

(a) Unless otherwise prescribed by the ANSP responsible for the provisions of services, the initial call to an ATC unit after a change of air-ground voice communication channel shall contain the following elements:

(1) designation of the ATS unit being called;

(2) call sign and, for aircraft in the heavy wake turbulence category, the word 'Heavy', or the word 'Super' if that aircraft has been so identified by the competent authority;

(3) level, including passing and cleared levels if not maintaining the cleared level;

(4) speed, if assigned by ATC; and

(5) additional elements, as required by the ANSP responsible for the provisions of services.

(b) Pilots shall provide level information to the nearest full 30 m or 100 ft as indicated on the pilot's altimeter.

(c) Initial call to aerodrome control tower

For aircraft being provided with aerodrome control service, the initial call shall contain:

(1) designation of the ATS unit being called;

(2) call sign and, for aircraft in the heavy wake turbulence category, the word 'Heavy', or the word 'Super' if that aircraft has been so identified by the competent authority;

(3) position; and

(4) additional elements, as required by the appropriate ANSP.

(d) Subsequent radiotelephony communications

(1) Abbreviated radiotelephony call signs, as prescribed in SERA.14050 (b), shall be used only after satisfactory communication has been established and provided that no

confusion is likely to arise. An aircraft shall use its abbreviated call sign only after it has been addressed in this manner by the aeronautical station.

(2) After contact has been established, continuous two-way communication shall be permitted without further identification or call until termination of the contact.

(3) In order to avoid any possible confusion, when issuing ATC clearances and reading back such clearances, controllers and pilots shall always add the call sign of the aircraft to which the clearance applies.

SERA.14070 Test procedures

(a) The form of test transmissions shall be as follows:

(1) the identification of the station being called;

(2) the aircraft identification;

(3) the words 'RADIO CHECK';

(4) the frequency being used.

(b) The reply to a test transmission shall be as follows:

(1) the identification of the aircraft;

(2) the identification of the aeronautical station replying;

(3) information regarding the readability of the aircraft transmission.

(c) When the tests are made, the following readability scale shall be used:

Readability Scale

(1) 1 Unreadable

(2) 2 Readable now and then

(3) 3 Readable, but with difficulty

(4) 4 Readable

(5) 5 Perfectly readable

SERA.14075 Exchange of communications

(a) Communications shall be concise and unambiguous, using standard phraseology whenever available.

(1) When transmitted by an aircraft, the acknowledgement of receipt of a message shall comprise the call sign of that aircraft.

(2) When acknowledgement of receipt is transmitted by an ATS unit to an aircraft, it shall comprise the call sign of the aircraft, followed, if considered necessary, by the call sign of the ATS unit.

(b) End of conversation

A radiotelephone conversation shall be terminated by the receiving ATS unit or aircraft using its own call sign.

(c) Corrections and repetitions

(1) When an error has been made in transmission, the word 'CORRECTION' shall be spoken, the last correct group or phrase repeated, and then the correct version transmitted.

(2) If a correction can best be made by repeating the entire message, the phrase 'CORRECTION, I SAY AGAIN' shall be used before the message is transmitted a second time.

(3) If the receiving station is in doubt as to the correctness of the message received, a repetition either in full or in part shall be requested.

(4) If repetition of an entire message is required, the words 'SAY AGAIN' shall be spoken. If repetition of a portion of a message is required, the phrase: 'SAY AGAIN ALL BEFORE... (first word satisfactorily received)' shall be used; or 'SAY AGAIN...(word before missing portion) TO...(word after missing portion)'; or 'SAY AGAIN ALL AFTER...(last word satisfactorily received)'.

(d) If, in checking the correctness of a readback, incorrect items are noticed, the words 'NEGATIVE I SAY AGAIN' shall be transmitted at the conclusion of the readback followed by the correct version of the items concerned.

SERA.14080 Communications watch/Hours of service

(a) During flight, aircraft shall maintain watch as required by the competent authority and shall not cease watch, except for reasons of safety, without informing the ATS unit concerned.

(1) Aircraft on long over-water flights, or on flights over designated areas over which the carriage of an emergency locator transmitter (ELT) is required, shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

(2) Aircraft shall continuously guard the VHF emergency frequency 121.5 MHz in areas or over routes where the possibility of interception of aircraft or other hazardous situations exist, and a requirement has been established by the competent authority.

(b) Aeronautical stations shall maintain a continuous listening watch on VHF emergency channel 121.5 MHz during the hours of service of the units at which it is installed.

(c) When it is necessary for an aircraft station or ATS unit to suspend operation for any reason, it shall, if possible, so inform other stations concerned, giving the time at which it is expected that operation will be resumed. When operation is resumed, other stations concerned shall be so informed. When it is necessary to suspend operation beyond the time specified in the original notice, a revised time of resumption of operation shall, if possible, be transmitted at or near the time first specified.

SERA.14085 Voice communications failure

(a) Air-ground

(1) When an aircraft fails to establish contact with the appropriate ATS unit on the designated channel, it shall attempt to establish contact on the previous channel used and, if not successful, on another channel appropriate to the route. If these attempts fail, the aircraft shall attempt to establish communication with the appropriate ATS unit, other ATS unit or other aircraft using all available means and advise the ATS unit

that contact on the assigned channel could not be established. In addition, an aircraft operating within a network shall monitor the appropriate VHF channel for calls from nearby aircraft.

(2) If the attempts specified under (a)(1) fail, the aircraft shall transmit its message twice on the designated channel(s), preceded by the phrase 'TRANSMITTING BLIND' and, if necessary, include the addressee(s) for which the message is intended.

(3) Receiver failure

(i) When an aircraft is unable to establish communication due to receiver failure, it shall transmit reports at the scheduled times, or positions on the channel in use, preceded by the phrase 'TRANSMITTING BLIND DUE TO RECEIVER FAILURE'. The aircraft shall transmit the intended message, followed by a complete repetition. During this procedure, the aircraft shall also advise the time of its next intended transmission.

(ii) An aircraft which is provided with air traffic control or advisory service shall, in addition to complying with (a)(3)(i), transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight of the aircraft.

(iii) When an aircraft is unable to establish communication due to airborne equipment failure it shall, when so equipped, select the appropriate SSR code to indicate radio failure.

(b) Ground-to-air

(1) When an ATS unit has been unable to establish contact with an aircraft after calls on the frequencies on which the aircraft is believed to be listening, it shall:

(i) request other ATS units to render assistance by calling the aircraft and relaying traffic, if necessary;

(ii) request aircraft on the route to attempt to establish communication with the aircraft and relay traffic, if necessary.

(2) The provisions of (b)(1) shall also be applied:

(i) on request of the air traffic services unit concerned;

(ii) when an expected communication from an aircraft has not been received within a time period such that the occurrence of a communication failure is suspected.

SERA.14090 Specific communications procedures

(a) Movement of vehicles

Phraseologies for the movement of vehicles, other than tow-tractors, on the manoeuvring area shall be the same as those used for the movement of aircraft, with the exception of taxi instructions, in which case the word 'PROCEED' shall be substituted for the word 'TAXI' when communicating with vehicles.

(b) Air traffic advisory service

Air traffic advisory service does not deliver 'clearances' but only 'advisory information' and it shall use the word 'advise' or 'suggest' when a course of action is proposed to an aircraft.

(c) Indication of heavy wake turbulence category

(1) For aircraft in the heavy wake turbulence category the word 'Heavy' shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.

(2) For specific aircraft in the heavy wake turbulence category, as identified by the competent authority, the word 'Super' shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.

(d) Procedures related to weather deviation

When the pilot initiates communications with ATC, a rapid response may be obtained by stating 'WEATHER DEVIATION REQUIRED' to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot shall initiate the communications using the urgency call 'PAN PAN' (preferably spoken three times).

SERA.14095 Distress and urgency radiotelephony communication procedures

(a) General

(1) Distress and urgency traffic shall comprise all radiotelephony messages relative to the distress and urgency conditions respectively. Distress and urgency conditions are defined as:

(i) *Distress*: a condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.

(ii) *Urgency*: a condition concerning the safety of an aircraft or other vehicle, or of some person on board or within sight, but which does not require immediate assistance.

(2) The radiotelephony distress signal MAYDAY and the radiotelephony urgency signal PAN PAN shall be used at the commencement of the first distress and urgency communication respectively. At the commencement of any subsequent communication in distress and urgency traffic, it shall be permissible to use the radiotelephony distress and urgency signals.

(3) The originator of messages addressed to an aircraft in distress or urgency condition shall restrict to the minimum the number and volume and content of such messages as required by the condition.

(4) If no acknowledgement of the distress or urgency message is made by the ATS unit addressed by the aircraft, other ~~ATS units~~ stations shall render assistance, as prescribed in (b)(2) and (c)(2) respectively.

(5) Distress and urgency traffic shall normally be maintained on the frequency on which such traffic was initiated until it is considered that better assistance can be provided by transferring that traffic to another frequency.

(6) In cases of distress and urgency communications, in general, the transmissions by radiotelephony shall be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.

(b) Radiotelephony distress communications

(1) Action by the aircraft in distress

In addition to being preceded by the radiotelephony distress signal MAYDAY in accordance with (a)(2), preferably spoken three times, the distress message to be sent by an aircraft in distress shall:

(i) be on the air-ground frequency in use at the time;

(ii) consist of as many as possible of the following elements spoken distinctly and, if possible, in the following order:

(A) name of the ATS unit addressed (time and circumstances permitting);

(B) the identification of the aircraft;

(C) the nature of the distress condition;

(D) intention of the pilot-in-command;

(E) present position, level and heading.

(2) Action by the ATS unit addressed or first station acknowledging the distress message

The ATS unit addressed by aircraft in distress, or first station acknowledging the distress message, shall:

(i) immediately acknowledge the distress message;

(ii) take control of the communications or specifically and clearly transfer that responsibility, advising the aircraft if a transfer is made;

(iii) take immediate action to ensure that all necessary information is made available, as soon as possible, to:

(A) the ATS unit concerned;

(B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements; and

(iv) warn other ATS units, as appropriate, in order to prevent the transfer of traffic to the frequency of the distress communication.

(3) Imposition of silence

(i) The aircraft in distress, or the ATS unit in control of distress traffic, shall be permitted to impose silence, either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It shall address these instructions 'to all stations', or to one station only, according to circumstances. In either case, it shall use:

(A) STOP TRANSMITTING;

(B) the radiotelephony distress signal MAYDAY.

(ii) The use of the signals specified in (b)(3)(i) shall be reserved for the aircraft in distress and for the ATS unit controlling the distress traffic.

(4) Action by all other ATS units/aircraft

(i) The distress communications have absolute priority over all other communications, and an ATS units/aircraft aware of them shall not transmit on the frequency concerned, unless:

(A) the distress is cancelled or the distress traffic is terminated;

(B) all distress traffic has been transferred to other frequencies;

(C) the ATS unit controlling communications gives permission;

(D) it has itself to render assistance.

(ii) Any ATS unit/aircraft which has knowledge of distress traffic, and which cannot itself assist the aircraft in distress, shall nevertheless continue listening to such traffic until it is evident that assistance is being provided.

(5) Termination of distress communications and of silence

(i) When an aircraft is no longer in distress, it shall transmit a message cancelling the distress condition.

(ii) When the ATS unit which has controlled the distress communication traffic becomes aware that the distress condition is ended, it shall take immediate action to ensure that this information is made available, as soon as possible, to:

(A) the ATS unit concerned; and

(B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements.

(iii) The distress communication and silence conditions shall be terminated by transmitting a message, including the words 'DISTRESS TRAFFIC ENDED', on the frequency or frequencies being used for the distress traffic. This message shall be originated only by the ATS unit controlling the communications when, after the reception of the message prescribed in (b)(5)(i), it is authorised to do so by the competent authority.

(c) Radiotelephony urgency communications

(1) Action by the aircraft reporting an urgency condition except as indicated in (c)(4)

In addition to being preceded by the radiotelephony urgency signal PAN PAN in accordance with (a)(2), preferably spoken three times and each word of the group pronounced as the French word 'panne', the urgency message to be sent by an aircraft reporting an urgency condition shall:

(i) be on the air-ground frequency in use at the time;

(ii) consist of as many as required of the following elements spoken distinctly and, if possible, in the following order:

(A) the name of the ATS unit addressed;

(B) the identification of the aircraft;

(C) the nature of the urgency condition;

(D) the intention of the pilot-in-command;

(E) present position, level and heading;

(F) any other useful information.

(2) Action by the ATS unit addressed or first station acknowledging the urgency message

The ATS unit addressed by an aircraft reporting an urgency condition, or the first station acknowledging the urgency message, shall:

(i) acknowledge the urgency message;

(ii) take immediate action to ensure that all necessary information is made available, as soon as possible, to:

(A) the ATS unit concerned;

(B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements;

(iii) if necessary, exercise control of communications.

(3) Action by all other ATS units/aircraft

The urgency communications have priority over all other communications, except distress, and all ATS units/aircraft shall take care not to interfere with the transmission of urgency traffic.

(4) Action by an aircraft used for medical transports

(i) The use of the signal described in (c)(4)(ii) shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.

(ii) For the purpose of announcing and identifying aircraft used for medical transports, a transmission of the radiotelephony urgency signal PAN PAN, preferably spoken three times, and each word of the group pronounced as the French word 'panne', shall be followed by the radiotelephony signal for medical transports MAY-DEE-CAL, pronounced as in the French 'médical'. The use of the signals described above indicates that the message which follows concerns a protected medical transport.

The message shall convey the following data:

(A) the call sign or other recognised means of identification of the medical transports;

(B) position of the medical transports;

(C) number and type of medical transports;

(D) intended route;

(E) estimated time en route and of departure and arrival, as appropriate; and

(F) any other information such as flight altitude, radio frequencies guarded, languages used, and secondary surveillance radar modes and codes.

(5) Action by the ATS units addressed or by other stations receiving a medical transports message

The provisions of (c)(2) and (c)(3) shall apply as appropriate to ATS units receiving a medical transports message.

Appendix 1

Signals

(…)

1.1.2. The telecommunication transmission procedures for the distress and urgency signals shall be in accordance with Section 14 ~~Volume II of Annex 10 to the Chicago Convention~~.

(…)

3.2.4. *Closed runways or taxiways*

3.2.4.1. Crosses of a single contrasting colour, ~~yellow or white~~ white on runways and yellow on taxiways (Figure A1-6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

Figure A1-6

(…)

Appendix 4

ATS airspace classes — services provided and flight requirements

(SERA.6001 and SERA.5025(b) refers)

Class	*Type of flight*	*Separation provided*	*Service provided*	*Speed limitation (*)*	*Radio communication capability requirement*	*Continuous two-way air-ground voice communication required*	*Subject to an ATC clearance*
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) Air traffic control service, VFR/VFR traffic information (and traffic avoidance advice on request)	250 kts IAS below 3 050 m (10 000 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 3 050 m (10 000 ft) AMSL	Yes	Yes	Yes

Class	*Type of flight*	*Separation provided*	*Service provided*	*Speed limitation (*)*	*Radio communication capability requirement*	*Continuous two-way air-ground voice communication required*	*Subject to an ATC clearance*
	VFR	Nil	Air traffic control service, IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes	Yes	Yes
E	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes	Yes	Yes
	VFR	Nil	Traffic information as far as practical	250 kts IAS below 3 050m (10 000 ft) AMSL	No (**)	No (**)	No
F	IFR	IFR from IFR as far as practical	Air traffic advisory service; flight information service if requested	250 kts IAS below 3 050m (10 000ft) AMSL	Yes (***)	No (***)	No
	VFR	Nil	Flight information service if requested	250kts IAS below 3 050m (10 000ft) AMSL	No (**)	No (**)	No
G	IFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes (**)	No (**)	No

Class	*Type of flight*	*Separation provided*	*Service provided*	*Speed limitation (*)*	*Radio communication capability requirement*	*Continuous two-way air-ground voice communication required*	*Subject to an ATC clearance*
	VFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	No (**)	No (**)	No
(*) When the level 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.							
(***) 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.							

Appendix 5

~~REQUIREMENTS REGARDING SERVICES IN AIR NAVIGATION~~

TECHNICAL SPECIFICATIONS RELATED TO AIRCRAFT OBSERVATIONS AND REPORTS BY VOICE COMMUNICATIONS

A. Reporting instructions

MODEL AIREP SPECIAL

ITEM	PARAMETER	TRANSMIT IN TELEPHONY as appropriate
—	Message-type designator: • special air-report	[AIREP] SPECIAL

Section 1	1	Aircraft identification	*(aircraft identification)*
	2	Position	POSITION *(latitude and longitude)* OVER *(significant point)* ABEAM *(significant point)* *(significant point) (bearing) (distance)*
	3	Time	*(time)*
	4	Level	FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET CLIMBING TO FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET DESCENDING TO FLIGHT LEVEL *(number)* or *(number)* METRES *or* FEET
	5	Next position and estimated time over	*(position) (time)*
	6	Ensuing significant point	*(position)* NEXT
Section 2	7	Estimated time of arrival	*(aerodrome) (time)*
	8	Endurance	ENDURANCE *(hours and minutes)*
Section 3	9	Phenomenon encountered or observed, prompting a special air-report: • Moderate turbulence • Severe turbulence • Moderate icing • Severe icing • Severe mountainwave • Thunderstorms without hail • Thunderstorms with hail • Heavy dust/sandstorm • Volcanic ash cloud • Pre-eruption volcanic activity or volcanic eruption	TURBULENCE MODERATE TURBULENCE SEVERE ICING MODERATE ICING SEVERE MOUNTAINWAVE SEVERE THUNDERSTORMS THUNDERSTORMS WITH HAIL DUSTSTORM *or* SANDSTORM HEAVY VOLCANIC ASH CLOUD PRE-ERUPTION VOLCANIC ACTIVITY *or* VOLCANIC ERUPTION

1. CONTENTS OF AIR-REPORTS

1.1 POSITION REPORTS AND SPECIAL AIR-REPORTS

1.1.1 Section 1 is obligatory for position reports and special air-reports, although Items 5 and 6 thereof may be omitted. Section 2 shall be added, in whole or in part, only when so requested by the operator or its designated representative, or when deemed necessary by the pilot-in-command; Section 3 shall be included in special air-reports.

~~1.1.1 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)~~

1.1.2 Condition prompting the issuance of a special air-report, to be selected from the list presented in SERA.12005 (a).

1.1.3 In the case of special air-reports containing information on volcanic activity, a post-flight report shall be made on the volcanic activity reporting form (Model VAR). All elements which are observed shall be recorded and indicated respectively in the appropriate places on the form Model VAR.

1.1.4 Special air-reports shall be made as soon as practicable after a phenomenon calling for a special air-report has been observed.

1.1.5 If a phenomenon warranting the making of a special air-report is observed at or near the time or place where a routine air-report is to be made, a special air-report shall be made instead.

2. Detailed reporting instructions

2.1 Items of an air-report shall be reported in the order in which they are listed in the model AIREP SPECIAL form.

— MESSAGE TYPE DESIGNATOR. Report 'SPECIAL' for a special air-report.

Section 1

Item 1 — AIRCRAFT IDENTIFICATION. Report the aircraft radiotelephony call sign as prescribed in Annex 10, Volume II, Chapter 5.

Item 2 — POSITION. Report position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed by 'North' or 'South') and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics, followed by 'East' or 'West'), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by magnetic bearing (3 numerics) and distance in nautical miles from the point. Precede significant point by 'ABEAM', if applicable.

Item 3 — TIME. Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) is prescribed on the basis of regional air navigation agreements. The time reported must be the actual time of the aircraft at the position and not the time of origination or transmission of the report. Time shall always be reported in hours and minutes UTC when making a special air-report.

Item 4 — FLIGHT LEVEL OR ALTITUDE. Report flight level by 3 numerics, when on standard pressure altimeter setting. Report altitude in metres followed by 'METRES' or in feet followed by 'FEET', when on QNH. Report 'CLIMBING' (followed by the level) when climbing, or 'DESCENDING' (followed by the level) when descending, to a new level after passing the significant point.

Item 5 — NEXT POSITION AND ESTIMATED TIME OVER. Report the next reporting point and the estimated time over such reporting point, or report the estimated position that will be reached one hour later, according to the position reporting procedures in force. Use the data conventions specified in Item 2 for position. Report the estimated time over this position. Report time in hours and minutes UTC (4 numerics) unless reporting time in minutes past the hour (2 numerics) as prescribed on the basis of regional air navigation agreements.

Item 6 — ENSUING SIGNIFICANT POINT. Report the ensuing significant point following the 'next position and estimated time over'.

Section 2

Item 7 — ESTIMATED TIME OF ARRIVAL. Report the name of the aerodrome of the first intended landing, followed by the estimated time of arrival at this aerodrome in hours and minutes UTC (4 numerics).

Item 8 — ENDURANCE. Report 'ENDURANCE' followed by fuel endurance in hours and minutes (4 numerics).

Section 3

Item 9 — PHENOMENON PROMPTING A SPECIAL AIR-REPORT. Report one of the following phenomena encountered or observed:

- moderate turbulence as 'TURBULENCE MODERATE' severe turbulence as 'TURBULENCE SEVERE'

The following specifications apply:

Moderate — Conditions in which moderate changes in aircraft attitude and/or altitude may occur but the aircraft remains in positive control at all times. Usually, small variations in airspeed. Changes in accelerometer readings of 0.5 g to 1.0 g at the aircraft's centre of gravity. Difficulty in walking. Occupants feel strain against seat belts. Loose objects move about.

Severe — Conditions in which abrupt changes in aircraft attitude and/or altitude occur; aircraft may be out of control for short periods. Usually, large variations in airspeed. Changes in accelerometer readings greater than 1.0 g at the aircraft's centre of gravity. Occupants are forced violently against seat belts. Loose objects are tossed about.

- moderate icing as 'ICING MODERATE' severe icing as 'ICING SEVERE'

The following specifications apply:

Moderate — Conditions in which change of heading and/or altitude may be considered desirable.

Severe — Conditions in which immediate change of heading and/or altitude is considered essential.

- Severe mountain wave as 'MOUNTAINWAVE SEVERE'

The following specification applies:

Severe — Conditions in which the accompanying downdraft is 3.0 m/s (600 ft/min) or more and/or severe turbulence is encountered.

- thunderstorm without hail as 'THUNDERSTORM' thunderstorm with hail as 'THUNDERSTORM WITH HAIL'

The following specification applies:

Only report those thunderstorms which are:

- obscured in haze; or
- embedded in cloud; or
- widespread; or
- forming a squall-line.

- heavy dust storm or sandstorm as 'DUSTSTORM *or* SANDSTORM HEAVY'

- volcanic ash cloud as 'VOLCANIC ASH CLOUD'
- pre-eruption volcanic activity or a volcanic eruption as 'PRE-ERUPTION VOLCANIC ACTIVITY *or* VOLCANIC ERUPTION'

The following specification applies:

Pre-eruption volcanic activity in this context means unusual and/or increasing volcanic activity which could presage a volcanic eruption.

2.2 Information recorded on the volcanic activity reporting form (Model VAR) is not for transmission by RTF but, on arrival at an aerodrome, is to be delivered without delay by the operator or a flight crew member to the aerodrome meteorological office. If such an office is not easily accessible, the completed form shall be delivered in accordance with local arrangements made between the meteorological and ATS authorities and the operator.

3. Forwarding of meteorological information received by voice communications

3.1 When receiving special air-reports, air traffic services units shall forward these air-reports without delay to the associated meteorological watch office (MWO). In order to ensure assimilation of air-reports in ground-based automated systems, the elements of such reports shall be transmitted using the data conventions specified below and in the order prescribed.

— ADDRESSEE. Record station called and, when necessary, relay required.

— MESSAGE TYPE DESIGNATOR. Record 'ARS' for a special air-report.

— AIRCRAFT IDENTIFICATION. Record the aircraft identification using the data convention specified for Item 7 of the flight plan, without a space between the operator's designator and the aircraft registration or flight identification, if used.

Section 1

Item 0 — POSITION. Record position in latitude (degrees as 2 numerics or degrees and minutes as 4 numerics, followed without a space by N or S) and longitude (degrees as 3 numerics or degrees and minutes as 5 numerics, followed without a space by E or W), or as a significant point identified by a coded designator (2 to 5 characters), or as a significant point followed by magnetic bearing (3 numerics) and distance in nautical miles (3 numerics) from the point. Precede significant point by 'ABM' (abeam), if applicable.

Item 1 — TIME. Record time in hours and minutes UTC (4 numerics).

Item 2 — FLIGHT LEVEL OR ALTITUDE. Record F followed by 3 numerics (e.g. F310), when a flight level is reported. Record altitude in metres followed by M or in feet followed by FT, when an altitude is reported. Record 'ASC' (level) when climbing, or 'DES' (level) when descending.

Section 3

Item 9 — PHENOMENON PROMPTING A SPECIAL AIR-REPORT. Record the phenomenon reported as follows:

- moderate turbulence as 'TURB MOD'
- severe turbulence as 'TURB SEV'
- moderate icing as 'ICE MOD'
- severe icing as 'ICE SEV'
- severe mountainwave as 'MTW SEV'
- thunderstorm without hail as 'TS'
- thunderstorm with hail as 'TSGR'
- heavy duststorm or sandstorm as 'HVY SS'
- volcanic ash cloud as 'VA CLD'
- pre-eruption volcanic activity or a volcanic eruption as 'VA'
- hail as 'GR'
- cumulonimbus clouds as 'CB'.

— TIME TRANSMITTED. Record only when Section 3 is transmitted.

~~42~~. SPECIFIC PROVISIONS RELATED TO REPORTING WIND SHEAR AND VOLCANIC ASH

~~42~~.1 Reporting of wind shear

~~42~~.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.

~~42~~.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.

~~42~~.2 Post-flight reporting of volcanic activity

42.2.1 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.

42.2.2 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.

B. Special air-report of volcanic activity form (Model VAR)

MODEL VAR: to be used for post-flight reporting

VOLCANIC ACTIVITY REPORT

Air-reports are critically important in assessing the hazards which volcanic ash cloud presents to aircraft operations.

OPERATOR:			A/C IDENTIFICATION: (as indicated on flight plan)		
PILOT-IN-COMMAND:					
DEP FROM:	DATE:	TIME; UTC:	ARR AT:	DATE:	TIME; UTC:
ADDRESSEE			AIREP SPECIAL		
Items 1–8 are to be reported immediately to the ATS unit that you are in contact with.					
1) AIRCRAFT IDENTIFICATION			2) POSITION		
3) TIME			4) FLIGHT LEVEL OR ALTITUDE		
5) VOLCANIC ACTIVITY OBSERVED AT (position or bearing, estimated level of ash cloud and distance from aircraft)					
6) AIR TEMPERATURE			7) SPOT WIND		
8) SUPPLEMENTARY INFORMATION SO_2 detected Yes ☐ No ☐ Ash encountered Yes ☐ No ☐			Other _____ (Brief description of activity especially vertical and lateral extent of ash cloud and, where possible, horizontal movement, rate of growth, etc.)		
After landing complete items 9–16 then fax form to: (Fax number to be provided by the meteorological authority based on local arrangements between the meteorological authority and the operator concerned.)					
9) DENSITY OF ASH CLOUD	☐ (a) Wispy	☐ (b) Moderate dense	☐ (c) Very dense		
10) COLOUR OF ASH CLOUD	☐ (a) White	☐ (b) Light grey	☐ (c) Dark grey		
☐	(d) Black	☐ (e) Other _____			
11) ERUPTION	☐ (a) Continuous	☐ (b) Intermittent	☐ (c) Not visible		
12) POSITION OF ACTIVITY	☐ (a) Summit	☐ (b) Side	☐ (c) Single		
	☐ (d) Multiple	☐ (e) Not observed			
13) OTHER OBSERVED	☐ (a) Lightning	☐ (b) Glow	☐ (c) Large rocks		
FEATURES OF ERUPTION	☐ (d) Ash fallout	☐ (e) Mushroom cloud	☐ (f) All		
14) EFFECT ON AIRCRAFT	☐ (a) Communication	☐ (b) Navigation systems	☐ (c) Engines		
	☐ (d) Pitot static	☐ (e) Windscreen	☐ (f) Windows		
15) OTHER EFFECTS	☐ (a) Turbulence	☐ (b) St. Elmo's Fire	☐ (c) Other fumes		
16) OTHER INFORMATION (Any information considered useful.)					

(…)

Supplement to the ANNEX

List of commonly agreed differences to be notified to ICAO in accordance with Article 5 of this Regulation:

Difference A2-04	
ICAO Annex 2 Chapter 3 3.3.1.2.	**ICAO Annex 2, 3.3.1.2 is replaced with Implementing Regulation (EU) No 923/2012 SERA.4001(b). The differences between this ICAO Standard and this Union regulation are as follows:** **— With regards to VFR flights planned to operate across international borders, the Union regulation (SERA.4001(b)(5)) differs from the ICAO Standard in Annex 2, 3.3.1.2(e) with the addition of the underlined text, as follows:** ***'any flight across international borders, unless otherwise prescribed by the States concerned.'*** **— With regard to VFR and IFR flights planned to operate at night, an additional requirement is inserted to Union regulation SERA.4001(b)(6)as follows:** **'(6)** ***any flight planned to operate at night, if leaving the vicinity of an aerodrome'*** ~~**This difference is also addressed in Difference A2-06 below for VFR.**~~

(…)

~~**Difference A2-06**~~	
~~ICAO Annex 2 Chapter 4 4.3.~~	~~New provision. ICAO Annex 2, 4.3, is replaced with Implementing Regulation (EU) No 923/2012 SERA.5005(c). The difference is that Implementing Regulation (EU) No 923/2012 adds requirements under which VFR flights at night may be permitted, as follows:~~ ~~*'(c) When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:*~~ ~~*(1) if leaving the vicinity of an aerodrome, a flight plan shall be submitted;*~~ ~~*(2) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;*~~ ~~*(3) the VMC visibility and distance from cloud minima as specified in Table S5-1 shall apply except that:*~~ ~~*(i) the ceiling shall not be less than 450 m (1 500 ft);*~~ ~~*(ii) except as specified in (c)(4), the reduced flight visibility provisions specified in Table S5-1(a) and (b) shall not apply;*~~

	~~*(iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3 000 ft) above MSL or 300 m (1 000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface;*~~ ~~*(iv) for helicopters in airspace classes F and G, flight visibility shall not be less than 3 km, provided that the pilot maintains continuous sight of the surface and if manoeuvred at a speed that will give adequate opportunity to observe other traffic or obstacles in time to avoid collision; and*~~ ~~*(v) for mountainous terrain, higher VMC visibility and distance from cloud minima may be prescribed.*~~ ~~*(4) ceiling, visibility and distance from cloud minima lower than those specified 4.3(c) above may be permitted for helicopters in special cases, such as medical flights, search and rescue operations and fire-fighting.*~~ ~~*(5) except when necessary for take-off or landing, or except when specifically authorised by the competent authority, a VFR flight at night shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:*~~ ~~*(i) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;*~~ ~~*(ii) elsewhere than as specified in (i), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.'*~~

(…)

Difference A10-01	
ICAO Annex 10 **Volume II** **Chapter 5** **5.2.1.4.1**	**ICAO Annex 10, Volume II, Chapter 5, 5.2.1.4.1 is transposed in SERA.14035 with some differences. The differences between this ICAO Standard and this Union regulation are as follows:** **SERA.14035 Transmission of numbers in radiotelephony** (a) Transmission of numbers (1) All numbers used in the transmission of aircraft call sign, headings, runway, wind direction and speed shall be transmitted by pronouncing each digit separately. (i) Flight levels shall be transmitted by pronouncing each digit separately except for the case of flight levels in whole hundreds. (ii) The altimeter setting shall be transmitted by pronouncing each digit separately except for the case of a setting of 1 000 hPa which shall be transmitted as ONE THOUSAND. (iii) All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the

	information shall be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND. (2) All numbers used in transmission of other information than those described in (a)(1) shall be transmitted by pronouncing each digit separately, except that all numbers containing whole hundreds and whole thousands, shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND, followed by the number of hundreds, followed by the word HUNDRED. (3) In cases where there is a need to clarify the number transmitted as whole thousands and/or whole hundreds, the number shall be transmitted by pronouncing each digit separately. (4) When providing information regarding relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the digits together such as TEN O'CLOCK or ELEVEN O'CLOCK. (5) Numbers containing a decimal point shall be transmitted as prescribed in (a)(1) with the decimal point in appropriate sequence being indicated by the word DECIMAL. (6) All six digits of the numerical designator shall be used to identify the transmitting channel in VHF radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits shall be used.

4. Regulatory Impact Assessment (RIA)

4.1. Issues to be addressed

The main issues to address with this NPA are the following:

— Safety by complementing the existing SERA IR Regulation with those missing elements such as the procedures for the use of the SSR transponder and the procedures for radiotelephony. While those procedures exist in the ICAO documentation, its use across the European Union varies so that it increases the risk of misunderstanding between the different airspace users. Indeed, this has been one of the contributing factors of some incidents (e.g. the use of non-standard phraseology is one very typical factor). Some examples of safety-related occurrences (accidents and serious incidents) for which use of radio phraseology was a contributing factor are available in EASA ADREP database[18];

— The outcome of the consultation process and the input provided by the stakeholders may affect some provisions proposed in this NPA (e.g. to make mandatory the use of English language at the airports above certain threshold in terms of movements, open issues in 2.3.5) which may or may not have an impact which could not be evaluated at this stage.

— Regulatory harmonisation. As explained above, these procedures are already contained in the ICAO documentation (SARPs and ICAO documentation), but their transposition and implementation by the European Union Member States vary so that it does not support either the implementation of Functional Airspace Block (FAB) or the Single European Sky.

4.1.1. Safety risk assessment

A detailed safety impact assessment has been carried out and proposed by EUROCONTROL to the Agency, the extract of which is included in Appendix II to this NPA.

In addition and as already mentioned, it can be generally argued that the lack of harmonised procedures (use of SSR transponder and radio telephony procedures) increases the risk of misunderstanding and it has been the contributing factor of some serious incidents in the European Airspace.

4.1.2. Who is affected?

The proposed amendment affects airspace users (private pilots, aircraft operators) air navigation services providers, air traffic controllers and aerodrome operators. The proposal affects also the competent authorities responsible for airspace matters within the Member States as well as the competent authorities responsible for the oversight of aircraft operations and air navigation services providers. The proposal also affects Member States.

4.1.3. How could the issue/problem evolve?

If the SERA IR Regulation would not be amended and complemented with the material of this NPA, Member States would implement it and would make use of their own national procedures, most likely based on those contained in ICAO material, in order to

[18] Files 00007560, 04000780, 04003430, N2005-00071, 07000360, 07003020, IN-043/2011-1862, 05002130, 05002130, 08201780, 200905196

complement the procedures existing in the present SERA IR Regulation. This would probably lead to maintaining numerous differences between the Member States and, therefore, the issues identified above would not be resolved and could even deteriorate over the years with the increase of traffic and the implementation of projects such as the SESAR project.

4.2. Objectives

The overall objectives of the EASA system are defined in Article 2 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 2 of this NPA.

The specific objective of this proposal is to complete the initial objective of the SERA IR Regulation which is the harmonisation of the rules of the air and operational procedures for the use of European airspace. Moreover, this specific objective also aims at solving the safety issues identified in 4.1.

In addition, another objective of this proposal is maintaining the SERA IR Regulation aligned with developments of ICAO Annexes, as much as it is possible in order to ensure worldwide seamless operations.

The last, but not the least, objective is the alignment between the SERA IR Regulation and the provisions in other fields of aviation, to ensure a total system approach.

4.3. Policy options

The following are the possible options for addressing the issues identified above:

Option 0: 'do nothing'. With this option, the SERA IR Regulation would remain unchanged. The SERA IR Regulation would neither be complemented, nor amended as proposed in this NPA. Member States would need to implement their own national procedures for the identified items.

Option 1: 'making references to ICAO material'. This option would amend the SERA IR Regulation by making references to the ICAO material. The introduction of the references to ICAO material would still require an amendment to the SERA IR Regulation not only to include the references to the ICAO material, but also to amend those elements of the rule that require amendment because of the detected inconsistency with the air operations requirements, to align with the recent amendment to ICAO Annex 2 or to extend the scope of the rule to make it applicable to the aerodrome operators.

Option 2: 'amend and complement the SERA IR Regulation'. With this option the SERA IR Regulation is amended with the complementary material extracted from ICAO documentation (ICAO Annex 10 Volume II, PANS-ATM, PANS-OPS and ICAO Doc 7030). In addition, with this option, as with the previous one, the rule would need to be amended in order to ensure consistency with the air operations requirements, to align it with the recent amendment to ICAO Annex 2 and to extend the scope of the rule to be applied to aerodrome operators.

While all these three options are feasible, it is important to highlight that Option 1 would not represent a difference with regard to today's situation, even though the rule would be amended. Indeed, today's common requirements Regulation makes reference to ICAO material. However, experience has shown that the way the Member States interpret these references and the way it is being implemented vary across the EU leading to a situation in which the issues identified above remain unresolved. This is the reason why this option has not been retained for the rest of the analysis.

Table 1: Selected policy options

Option No	***Short title***	**Description**
0	Do nothing	Baseline option (no change in rules; risks remain as outlined in the issue analysis).
2	Amend and complement the SERA IR Regulation	With this option, the SERA IR Regulation is amended with the material transposed from ICAO documentation (ICAO Annex 10 Volume II, PANS-ATM, PANS-OPS and ICAO Doc 7030). In addition, with this option, as with the previous one, the rule would need to be amended in order to ensure its consistency with the air operations requirements, to aling with the recent amendment to ICAO Annex 2 and to extend the scope of the rule to be applied to aerodrome operators.

4.4. Methodology and data (only for a full RIA)

4.4.1. Applied methodology

As indicated in Section 4.1, once the issues have been analysed, the objectives can be defined and options can be proposed to achieve these objectives and solve the issues. The analysis of the impacts of these options can be performed with different methodologies depending on the availability and types of data. In addition, one of the main principles of impact assessment is to provide an in-depth analysis in proportion to the scale of the issue.

Considering the limited availability of data, it was decided to use the multi-criteria analysis (MCA) to assess the options proposed to solve the issues. The following section explains the principles of the MCA and how it was applied in a way proportionate to the issues.

4.4.2. Criteria for the impact analysis

The options are assessed against a wide range of criteria derived from the objectives of Regulation (EC) No 216/2008[19] (hereinafter referred to as the 'Basic Regulation') as described in the following table:

[19] 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), as amended by Regulation (EC) No 1108/2009 (OJ L 309, 24.11.2009, p. 51).

Table 2 — Assessment criteria for the options

Overall objectives	Specific objectives and assessment criteria
	Description
Safety	Maintain or improve the level of safety.
Economic	Ensure cost-effectiveness. Ensure 'level playing field'.
Environmental	Avoid negative effects on the environment.
Social	Avoid negative effects on employment in Air Traffic Control. Promote high-quality jobs in the private sector for Air Traffic Control. Facilitate mobility.
Proportionality	Ensure proportionate rules for Small and Medium-sized Enterprises (SMEs), General Aviation, Business Aviation.
Regulatory harmonisation	Ensure full consistency with EU laws and regulations. Ensure compliance with ICAO Standards (if appropriate). Achieve the maximum appropriate degree of harmonisation within Europe.

4.4.3. Applied methodology: multi-criteria analysis (MCA)

Multi-criteria analysis (MCA) covers a wide range of techniques that aim at combining a range of positive and negative impacts into a single framework to allow easier comparison of scenarios. Essentially, it applies cost-benefit thinking to cases where there is a need to present impacts that are a mixture of qualitative, quantitative, and monetary data, and where there are varying degrees of certainty. The MCA key steps generally include:

— establishing the criteria to be used to compare the options (these criteria must be measurable, at least in qualitative terms);

— scoring how well each option meets the criteria; the scoring needs to be relative to the baseline scenario;

— ranking the options by combining their respective scores; and

— performing sensitivity analysis on the scoring to test the robustness of the ranking.

The criteria used to compare the options were derived from the Basic Regulation and the guidelines for Regulatory Impact Assessment developed by the European Commission. The principal objective of the Agency is to 'establish and maintain a high uniform level of safety' (Article 2(1) of the Basic Regulation). As additional objectives, the Basic Regulation identifies environmental, economic, proportionality, and harmonisation aspects which are reflected below.

For this NPA, taking into account the lack of data available and options available, the scoring of the impacts uses a simple scale with '+' and '–' to indicate the positive and negative impacts.

4.5. Analysis of impacts

4.5.1. Safety impact

As already explained in 4.1, one of the issues identified to be addressed by this NPA is safety. With the expected increase of traffic and with the expected increase in the complexity of the means necessary to cope with the increase of traffic (e.g. implementation of SESAR projects), there is an emerging need to ensure harmonisation of the operational procedures for the use of the European Airspace. This is necessary to ensure safe seamless operations within the FABs and also across FABs.

It is, however, not possible to quantify the safety impact as there is not sufficient data available to do so.

Option 0: 'do nothing'. With this option, the SERA IR Regulation will not be further amended. Therefore, the Member States would need to develop their own national procedures to complement those existing in the SERA IR Regulation. This could have a negative safety impact if those national procedures would not be consistent and, therefore, the issue identified above would not be solved.

Option 2*:* 'amend and complement the SERA IR Regulation'. This option intends to resolve the issue identified above by complementing the SERA IR Regulation with the required harmonised procedures.

Type of impacts	*Option 0*	*Option 2*
Safety impact	-/0	+

A safety impact assessment relative to Option 2 has been conducted and is summarised in section 6.2 of this NPA (Appendix II).

4.5.2. Social impact

One of the objectives of the SERA IR Regulation is to facilitate the free movement of pilots and airspace users across the European airspace.

Option 0 does not contribute to this objective as the remaining procedures will be developed at the national level and are, therefore, likely to be different between them.

Option 2 should support this objective by requiring the harmonisation of the procedures and rules applicable within the European airspace and, therefore, facilitating the free movement of pilots and airspace users.

Type of impacts	*Option 0*	*Option 2*
Social impact	-	+

4.5.3. Economic impact

The implementation of the SERA IR Regulation and the amendments thereof represent an initial cost for the Member States and the national air navigation services providers in order to make the necessary changes (in the airspace, procedures, AIP, etc.). It could also represent additional cost for the training of relevant personnel within the competent authorities, aircraft and aerodrome operators and air navigation services providers. The increase of cost with regard to today's situation will depend upon the differences between the national rules of the air applicable in each Member States and the content of the SERA IR Regulation. It is, therefore, difficult to predict this initial implementation cost in a quantitative manner. This initial implementation cost is, however, only foreseen at the beginning while over time the economic impact of having harmonised requirements should be positive as the amount of national rulemaking and need for coordination and harmonisation between the Member States should reduce.

Option 0: The economic impact of this option is, therefore, zero as nothing will change with regard to today's situation.

Option 2: The economic impact of this option is negative at the beginning of the implementation of proposed amendment, but expected to be positive in the long term. However, for the purpose of the NPA, only the initial implementation cost is considered and, therefore, the economic impact is negative.

Type of impacts	*Option 0*	*Option 2*
Economic impact	0	-

4.5.4. Proportionality

The nature of the rules of the air is such that it applies in similar way to all airspace users (e.g. general aviation, commercial aviation). The SERA IR Regulation already has provisions in place (airspace classification, use of Transponder Mandatory Zone (TMZ) and or Radio Mandatory Zone (RMZ), etc.) which should be used by the different MS to ensure

the proportionality of access to certain volumes of airspace taking into account the specific needs of the airspace users.

In this regard, there is no additional disproportionality introduced by this proposal no matter which option was chosen.

4.5.5. Impact on 'Better Regulation' and harmonisation

One of the issues intended to be resolved with this NPA is the need for harmonisation of the rules of the air and operational procedures for the use of the European airspace. This is necessary not only for safety but also to facilitate the implementation of FABs, the free movements of pilots within the European airspace and the implementation of the Single European Sky.

Option 0: This option is expected to have a negative harmonisation impact as the Member States will need to develop their own national procedures for those items not covered in the SERA IR Regulation. While it is expected that Member States would develop these national procedures based on the ICAO documentation, it is also expected that there are some differences between the different national procedures. This would lead to a non-harmonised environment.

Option 2: This option is expected to provide the basis for regulatory harmonisation and coordination between the European Member States as it establishes the harmonised rules of the air and the operational procedures for the use of the European airspace. It is, therefore, expected to have a positive impact on 'Better Regulation' and harmonisation.

Type of impacts	*Option 0*	*Option 2*
Impact on 'Better Regulation' and harmonisation	-	+

4.6. Comparison and conclusion

4.6.1. Comparison of options

Based on the analysis of the impacts, the issues identified above that are expected to be resolved and the objectives of the proposals in this NPA, the preferred option is Option 2.

This option does not only aim at resolving the issues identified and at achieving the objectives, but it is also the best option to implement the Essential Requirements in Chapter 1.a of Annex Vb to the Basic Regulation. Additionally, it also aims at harmonising the operational procedures applicable to airspace users. Last but not least, the overall result is clearly positive compared to Option 0. This is, therefore, the option proposed in the draft Opinion included in this NPA.

Type of impacts	***Option 0***	***Option 2***
Safety impact	-/0	+
Social impact	-	+
Economic impact	0	-
Impact on 'Better Regulation' and harmonisation	-	+
Overall impact	-	+

5. References

5.1. Affected regulations

Commission Regulation (EU) No 923/2012 of 26/09/2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p.1).

5.2. Affected CS, AMC and GM

ED Decision 2013/013/R on Acceptable Means of Compliance and Guidance Material to the rules of the air[20]

5.3. Reference documents

— ICAO Document 4444, PANS-ATM;

— ICAO Document 7030, Regional Supplementary Procedures;

— ICAO Document 8168, PANS-OPS Volume I, Flight Procedures;

— ICAO Annex 10, Volume II, Communication Procedures including those with PANS status.

[20] http://easa.europa.eu/agency-measures/docs/agency-decisions/2013/2013-013-R/ED%20Decision%202013-013-R.pdf

6. Appendices

6.1. Appendix I — Table presenting the Annex to the SERA IR Regulation with the existing adopted provisions and the content of 'SERA Part C' and reference to the sources of the proposed provisions

Rules of the Air - ANNEX PART A+B, Draft Part C	References and Remarks
Section 1 — Flight over the High Seas	
SERA.1001 General (a) For flight over the high seas, the rules specified in Annex 2 to the Chicago Convention shall apply without exception. For the purposes of continuity and seamless operation of air traffic services in particular within Functional Airspace Blocks, the provisions of Annex 11 to the Chicago Convention may be applied in airspace over high seas in a manner that is consistent with how those provisions are applied over the territory of the member States. This shall be without prejudice to the operations of State Aircraft under Article 3 of the Chicago Convention. This shall also be without prejudice to the responsibilities of Member States to ensure that aircraft operations within the Flight Information Regions within which they are responsible for the provision of air traffic services in accordance with ICAO regional air navigation agreements are undertaken in a safe, expeditious and efficient manner. (b) For those parts of the high seas where a Member State has accepted, pursuant to an ICAO regional air navigation agreement, the responsibility of providing air traffic services, the Member State shall designate the ATS provider for providing those services.	
Section 2 — Applicability and Compliance	
SERA.2001 Applicability Without prejudice to SERA.1001 above, this Regulation shall apply in accordance with Article 1 in particular to airspace users and aircraft:	

(a) operating into, within or out of the Union; (b) bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown. This Regulation shall also apply to the Competent Authorities of the Member States, Air Navigation Service Providers, aerodrome operators and the relevant ground personnel engaged in aircraft operations.	
SERA.2005 Compliance with the Rules of the Air The operation of an aircraft either in flight, on the movement area of an aerodrome or at an operating site shall be in compliance with the general rules, the applicable local provisions and, in addition, when in flight, either with: (a) the visual flight rules; or (b) the instrument flight rules	
SERA.2010 Responsibilities (a) Responsibility of the Pilot-in-command The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with this Regulation, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety. (b) Pre-flight Action Before beginning a flight, the pilot-in-command of an aircraft shall become familiar with all available information appropriate to the intended operation. Pre-flight action for flights away from the vicinity of an aerodrome, and for all IFR flights, shall include a careful study of available current weather reports and forecasts, taking into consideration fuel requirements and an alternative course of action if the flight cannot be completed as planned.	
SERA.2015 Authority of Pilot-in-command of an Aircraft The pilot-in-command of an aircraft shall have final authority as to the disposition of the aircraft while in command.	
SERA.2020 Problematic Use of Psychoactive Substances No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired. No such person shall engage in any kind of problematic use of substances.	

Section 3 - General Rules and collision avoidance	
Chapter 1 - Protection of Persons and Property	
SERA.3101 Negligent or Reckless Operation of Aircraft An aircraft shall not be operated in a negligent or reckless manner so as to endanger life or property of others.	
SERA.3105 Minimum Heights Except when necessary for take-off or landing, or except by permission from the competent authority, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface. The minimum heights for VFR flights shall be those specified in SERA.5005 (f) and minimum levels for IFR flights shall be those specified in SERA.5015 (b).	
SERA.3110 Cruising Levels The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of: (a) flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude; (b) altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.	
SERA.3115 Dropping or Spraying Dropping or spraying from an aircraft in flight shall only be conducted in accordance with: (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.	

SERA.3120 Towing An aircraft or other object shall only be towed by an aircraft in accordance with: (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.	
SERA.3125 Parachute Descents Parachute descents, other than emergency descents, shall only be made in accordance with: (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.	
SERA.3130 Aerobatic Flight Aerobatic flights shall only be carried out in accordance with: (a) Union legislation or, where applicable, national legislation for aircraft operations regulated by Member States; and (b) as indicated by any relevant information, advice and/or clearance from the appropriate air traffic services unit.	
SERA.3135 Formation Flights Aircraft shall not be flown in formation except by pre-arrangement among the pilots-in-command of the aircraft taking part in the flight and, for formation flight in controlled airspace, in accordance with the conditions prescribed by the competent authority. These conditions shall include the following: (a) one of the pilots-in-command shall be designated as the flight leader; (b) the formation operates as a single aircraft with regard to navigation and position reporting; (c) separation between aircraft in the flight shall be the responsibility of the flight leader and the pilots-in-command of the other aircraft in the flight and shall include periods of transition when aircraft are manoeuvring to attain their own separation within the formation and during join-up and breakaway; and (d) For State aircraft a maximum lateral, longitudinal and vertical distance between each aircraft and the flight leader in accordance with the Chicago Convention. For other than State aircraft a distance not exceeding 1 km (0.5nm)	

laterally and longitudinally and 30 m (100ft) vertically from the flight leader shall be maintained by each aircraft.	
SERA.3140 Unmanned Free Balloons An unmanned free balloon shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 2.	
SERA.3145 Prohibited Areas and Restricted Areas Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the Member State over whose territory the areas are established.	
Chapter 2 – Avoidance of Collisions	
SERA.3201 General Nothing in this Regulation shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.	
SERA.3205 Proximity An aircraft shall not be operated in such proximity to other aircraft as to create a collision hazard.	
SERA.3210 Right-of-way (a) The aircraft that has the right-of-way shall maintain its heading and speed. (b) An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft. (c) An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence. (1) *Approaching head-on.* When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right. (2) *Converging.* When two aircraft are converging at approximately the same level, the aircraft that has the other	

on its right shall give way, except as follows: (i) power-driven heavier-than-air aircraft shall give way to airships, sailplanes and balloons; (ii) airships shall give way to sailplanes and balloons; (iii) sailplanes shall give way to balloons; (iv) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects. (3) *Overtaking.* An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear. (i) *Sailplanes overtaking*. A sailplane overtaking another sailplane may alter its course to the right or to the left.	
(4) *Landing.* An aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land. (i) When two or more heavier-than-air aircraft are approaching an aerodrome or an operating site for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land, or to overtake that aircraft. Nevertheless, power-driven heavier-than-air aircraft shall give way to sailplanes. (ii) *Emergency landing.* An aircraft that is aware that another is compelled to land shall give way to that aircraft. (5) *Taking off.* An aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft taking off or about to take off. (d) Surface movement of aircraft, persons and vehicles (1) In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome or equivalent part of an operating site, the following shall apply: (i) when two aircraft are approaching head on, or approximately so, each shall stop or where practicable alter its course to the right so as to keep well clear;	

(ii) when two aircraft are on a converging course, the one which has the other on its right shall give way; (iii) an aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft. (2) At a controlled aerodrome an aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless an explicit clearance to enter or cross the runway has been issued by the aerodrome control tower. (3) An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further in accordance with (2) when the lights are switched off. (4) Movement of persons and vehicles at aerodromes	
(i) 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. (ii) 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 (iii) the minimum separation between vehicles and taxiing aircraft shall be as specified by the ANSP and 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. (iii) Emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic. (iv) Subject to the provisions in (iii), 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, taxiing or being towed; (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.	
SERA.3215 Lights to Be Displayed by Aircraft (a) Except as provided by (e), at night all aircraft in flight shall display: (1) anti-collision lights intended to attract attention to the aircraft; and (2) except for balloons, navigation lights intended to indicate the relative path of the aircraft to an observer. Other lights shall not be displayed if they are likely to be mistaken for these lights. (b) Except as provided by (e), at night: (1) all aircraft moving on the movement area of an aerodrome shall display navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights; (2) unless stationary and otherwise adequately illuminated, all aircraft on the movement area of an aerodrome shall display lights intended to indicate the extremities of their structure, as far as practicable; (3) all aircraft taxiing or being towed on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft; and (4) all aircraft on the movement area of an aerodrome whose engines are running shall display lights which indicate that fact. (c) Except as provided by (e), all aircraft in flight and fitted with anti-collision lights to meet the requirement of (a)(1) shall display such lights also during day. (d) Except as provided by (e), all aircraft: (1) taxiing or being towed on the movement area of an aerodrome and fitted with anti-collision lights, to meet the requirement of (b)(3) or (2) on the movement area of an aerodrome and fitted with lights to meet the requirement of (b)(4) shall display such lights also during day. (e) A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of (a), (b), (c) and (d) if they do or are likely to:	

(1) adversely affect the satisfactory performance of duties; or (2) subject an outside observer to harmful dazzle.	
SERA.3220 Simulated Instrument Flights An aircraft shall not be flown under simulated instrument flight conditions unless: (i) fully functioning dual controls are installed in the aircraft; and (ii) an additional qualified pilot (in this rule called a safety pilot) occupies a control seat to act as safety pilot for the person who is flying under simulated instrument conditions. The safety pilot shall have adequate vision forward and to each side of the aircraft, or a competent observer in communication with the safety pilot shall occupy a position in the aircraft from which the observer's field of vision adequately supplements that of the safety pilot.	
SERA.3225 Operation on and in the Vicinity of an Aerodrome An aircraft operated on or in the vicinity of an aerodrome shall: (a) observe other aerodrome traffic for the purpose of avoiding collision; (b) conform with or avoid the pattern of traffic formed by other aircraft in operation; (c) except for balloons, make all turns to the left, when approaching for a landing and after taking off, unless otherwise indicated, or instructed by ATC; (d) except for balloons, land and take off into the wind unless safety, the runway configuration, or air traffic considerations determine that a different direction is preferable.	
SERA.3230 Water Operations (a) When two aircraft or an aircraft and a vessel are approaching one another and there is a risk of collision, the aircraft shall proceed with careful regard to existing circumstances and conditions including the limitations of the respective craft. (1) *Converging.* An aircraft which has another aircraft or a vessel on its right shall give way so as to keep well clear. (2) *Approaching head-on.* An aircraft approaching another aircraft or a vessel head-on, or approximately so, shall alter its heading to the right to keep well clear. (3) *Overtaking.* The aircraft or vessel which is being overtaken has the right of way, and the one overtaking shall	

alter its heading to keep well clear. (4) *Landing and taking off.* Aircraft landing on or taking off from the water shall, in so far as practicable, keep well clear of all vessels and avoid impeding their navigation. (b) *Lights to be displayed by aircraft on the water*. At night or during any other period prescribed by the competent authority, all aircraft on the water shall display lights as required by the Convention on the International Regulations for Preventing Collisions at Sea, 1972, unless it is impractical for them to do so, in which case they shall display lights as closely similar as possible in characteristics and position to those required by the International Regulations.	
Chapter 3 – Signals	
SERA.3301 General (a) Upon observing or receiving any of the signals given in Appendix 1, aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix. (b) The signals of Appendix 1 shall, when used, have the meaning indicated therein. They shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used. (c) A signalman/marshaller shall be responsible for providing standard marshalling signals to aircraft in a clear and precise manner using the signals shown in Appendix 1. (d) Only persons trained, qualified and approved as required by the relevant Union or national legislation shall carry out the functions of a signalman/marshaller. (e) The signalman/marshaller shall wear a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation. (f) Daylight-fluorescent wands, table-tennis bats or gloves shall be used for all signalling by all participating ground staff during daylight hours. Illuminated wands shall be used at night or in low visibility.	
Chapter 4 – Time	

SERA.3401 General (a) Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight. (b) A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary. (c) Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC. (d) Time in air traffic services (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 at least to the nearest minute.	
Section 4 — Flight Plans	
SERA.4001 Submission of a Flight Plan (a) Information relative to an intended flight or portion of a flight, to be provided to air traffic services units, shall be in the form of a flight plan. The term 'flight plan' is used to mean variously, full information on all items comprised in the flight plan description, covering the whole route of a flight, or limited information required, *inter alia*, when the purpose is to obtain a clearance for a minor portion of a flight such as to cross an airway, to take off from, or to land at a controlled aerodrome. (b) A flight plan shall be submitted prior to operating: (1) any flight or portion thereof to be provided with air traffic control service; (2) any IFR flight within advisory airspace; (3) any flight within or into areas, or along routes designated by the competent authority, to facilitate the provision of flight information, alerting and search and rescue services; (4) any flight within or into areas or along routes designated by the competent authority, to facilitate coordination with appropriate military units or with air traffic services units in adjacent States in order to avoid the possible need for interception for the purpose of identification	

(5) any flight across international borders, unless otherwise prescribed by the States concerned; (6) any flight planned to operate at night, if leaving the vicinity of an aerodrome. (c) A flight plan shall be submitted, before departure, to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or air-ground control radio station, unless arrangements have been made for submission of repetitive flight plans. (d) A flight plan for any flight planned to operate across international borders or to be provided with air traffic control service or air traffic advisory service shall be submitted at least sixty minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate air traffic services unit at least ten minutes before the aircraft is estimated to reach: (1) the intended point of entry into a control area or advisory area; or (2) the point of crossing an airway or advisory route.	AMC-GM foreseen
SERA.4005 Contents of a Flight Plan (a) A flight plan shall comprise information regarding such of the following items as are considered relevant by the competent authority: (1) Aircraft identification (2) Flight rules and type of flight (3) Number and type(s) of aircraft and wake turbulence category (4) Equipment (5) Departure aerodrome or operating site (6) Estimated off-block time (7) Cruising speed(s) (8) Cruising level(s) (9) Route to be followed (10) Destination aerodrome or operating site and total estimated elapsed time (11) Alternate aerodrome(s) or operating site(s) (12) Fuel endurance (13) Total number of persons on board	

(14) Emergency and survival equipment (15) Other information. (b) For flight plans submitted during flight, the departure aerodrome or operating site provided shall be the location from which supplementary information concerning the flight may be obtained, if required. Additionally, the information to be provided in lieu of the estimated off-block time shall be the time over the first point of the route to which the flight plan relates.	
SERA.4010 Completion of a Flight Plan (a) A flight plan shall contain information, as applicable, on relevant items up to and including 'Alternate aerodrome(s) or operating site(s)' regarding the whole route or the portion thereof for which the flight plan is submitted. (b) It shall, in addition, contain information, as applicable, on all other items when so prescribed by the competent authority or when otherwise deemed necessary by the person submitting the flight plan.	
SERA.4015 Changes to a Flight Plan (a) Subject to the provisions of SERA.8020 (b) all changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported as soon as practicable to the appropriate air traffic services unit. For other VFR flights, significant changes to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit. (b) Information submitted prior to departure regarding fuel endurance or total number of persons carried on board, if incorrect at time of departure, constitutes a significant change to the flight plan and as such shall be reported.	
SERA.4020 Closing a Flight Plan (a) An arrival report shall be made in person, by radiotelephony, via data link or by other means as prescribed by the competent authority at the earliest possible moment after landing, to the appropriate air traffic services unit at the arrival aerodrome, by any flight for which a flight plan has been submitted covering the entire flight or the remaining portion of a flight to the destination aerodrome. (1) Submission of an arrival report is not required after landing on an aerodrome where air traffic services are provided on condition that radio communication or visual signals indicate that the landing has been observed. (b) When a flight plan has been submitted only in respect of a portion of a flight, other than the remaining portion of a flight to destination, it shall, when required, be closed by an appropriate report to the relevant air traffic services unit. (c) When no air traffic services unit exists at the arrival aerodrome or operating site, the arrival report, when required, shall be made as soon as practicable after landing and by the quickest means available to the nearest air traffic	

services unit.

(d) When communication facilities at the arrival aerodrome or operating site are known to be inadequate and alternate arrangements for the handling of arrival reports on the ground are not available, the following action shall be taken. Immediately prior to landing the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required. Normally, this transmission shall be made to the aeronautical station serving the air traffic services unit in charge of the flight information region in which the aircraft is operated.

(e) Arrival reports made by aircraft shall contain the following elements of information:

(1) aircraft identification;

(2) departure aerodrome or operating site;

(3) destination aerodrome or operating site (only in the case of a diversionary landing);

(4) arrival aerodrome or operating site;

(5) time of arrival.

Section 5 — Visual Meteorological Conditions, Visual Flight Rules, Special VFR and Instrument Flight Rules

SERA.5001 VMC Visibility and Distance from Cloud Minima

VMC visibility and distance from cloud minima are contained in Table S5-1.

Table S5-1*

Altitude band	Airspace class	Flight visibility	Distance from cloud
At and above 3 050 m (10 000 ft) AMSL	A** B C D E F G	8 km	1 500 m horizontally 300 m (1 000 ft) vertically
Below 3 050 m (10 000 ft) AMSL and above 900 m (3 000 ft) AMSL, or above 300 m (1 000 ft) above terrain, whichever is the	A** B C D E F G	5 km	1 500 m horizontally 300 m (1 000 ft) vertically

higher			
At and below 900 m (3 000 ft) AMSL, or 300 m (1 000 ft) above terrain, whichever is the higher	A** B C D E	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
	F G	5 km***	Clear of cloud and with the surface in sight

* When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 shall be used in lieu of 10 000 ft.

** The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.

*** When so prescribed by the competent authority:

a) flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:

1) at speeds of 140 kts IAS or less to give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or

2) in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels.

b) HELICOPTERS may be permitted to operate *in less than 1 500 m* but not less than 800 m flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision. ~~Flight visibilities lower than 800 m may be permitted for special cases, such as medical flights, search and rescue operations and fire fighting.~~

SERA.5005 Visual Flight Rules

(a) Except when operating as a special VFR flight, VFR flights shall be conducted so that the aircraft is flown in conditions of visibility and distance from clouds equal to or greater than those specified in Table S5-1.

(b) Except when a special VFR clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or aerodrome traffic circuit when the reported meteorological conditions at that aerodrome are below the following minima:

(1) the ceiling is less than 450 m (1 500 ft); or

(2) the ground visibility is less than 5 km.

(c) When so prescribed by the competent authority, VFR flights at night may be permitted under the following conditions:

(1) if leaving the vicinity of an aerodrome, a flight plan shall be submitted in accordance with SERA.4001 (b)(6));

(2) flights shall establish and maintain two-way radio communication on the appropriate ATS communication channel, when available;

(3) the VMC visibility and distance from cloud minima as specified in Table S5-1 shall apply except that:

i) the ceiling shall not be less than 450 m (1 500 ft);

ii) ~~except as specified in (c)(4),~~ the reduced flight visibility provisions specified in Table S5-1 a) and b) shall not apply;

iii) in airspace classes B, C, D, E, F and G, at and below 900 m (3000 ft) above MSL or 300 m (1000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface; and

~~iv) for helicopters in airspace classes F and G at and below 900 m (3 000 ft) above MSL or 300 m (1 000 ft) above terrain, whichever is the higher, flight visibility shall not be less than 3 km, provided that the pilot maintains continuous sight of the surface and if manoeuvred at a speed that will give adequate opportunity to observe other traffic or obstacles in time to avoid collision; and~~

iv~~v~~) for mountainous ~~terrain~~ area, higher VMC visibility and distance from cloud minima may be prescribed by the Competent Authority.

~~(4) ceiling, visibility and distance from cloud minima lower than those specified in (3) may be permitted for helicopters in special cases, such as medical flights, search and rescue operations and fire-fighting.~~

(4~~5~~) except when necessary for take-off or landing, or except when specifically authorised by the competent authority, a VFR flight at night shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

i) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;

ii) elsewhere than as specified in i), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

(d) Unless authorised by the competent authority in accordance with Regulation (EC) 730/2006, VFR flights shall not be operated: (1) above FL 195; (2) at transonic and supersonic speeds.	
(e) Unless operated in restricted airspace, authorisation for VFR flights to operate above FL 285 shall not be granted. ~~where a vertical separation minimum of 300 m (1000 ft) is applied above FL 290.~~	Doc 7030-1.2.1.2 merged with Annex 2 – 4.5
(f) Except when necessary for take-off or landing, or except by permission from the competent authority, a VFR flight shall not be flown: (1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft; (2) elsewhere than as specified in (1), at a height less than 150 m (500 ft) above the ground or water, or 150 m (500 ft) above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.	
(g) Except where otherwise indicated in air traffic control clearances or specified by the competent authority, VFR flights in level cruising flight when operated above 900 m (3 000 ft) from the ground or water, or a higher datum as specified by the competent authority, shall be conducted at a cruising level appropriate to the track as specified in the table of cruising levels in Appendix 3.	
(h) VFR flights shall comply with the provisions of Section 8: (1) when operated within Classes B, C and D airspace; (2) when forming part of aerodrome traffic at controlled aerodromes; or (3) when operated as special VFR flights.	
(i) A VFR flight operating within or into areas or along routes designated by the competent authority, in accordance with SERA.4001 (b)(3) or (4), shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and report its position as necessary to, the air traffic services unit providing flight information service.	
(j) An aircraft operated in accordance with the visual flight rules which wishes to change to compliance with the instrument flight rules shall: (1) if a flight plan was submitted, communicate the necessary changes to be effected to its current flight plan; or (2) as required by SERA.4001 (b), submit a flight plan to the appropriate air traffic services unit as soon as practicable and obtain a clearance prior to proceeding IFR when in controlled airspace.	

SERA.5010 Special VFR in control zones 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: (a) by the pilot: (1) clear of cloud and with the surface in sight; (2) the flight visibility is not less than 1 500 m or, for helicopters, not less than 800 m; (3) 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; and (b) by ATC: (1) during day only, unless otherwise permitted by the competent authority; (2) the ground visibility is not less than 1 500 m or, for helicopters, not less than 800 m; (3) the ceiling is not less than 180 m (600 ft).	

SERA.5015 Instrument Flight Rules (IFR) - Rules Applicable to All IFR Flights (a) Aircraft Equipment Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown and in accordance with the applicable air operations legislation. (b) Minimum Levels Except when necessary for take-off or landing, or except when specifically authorised by the competent authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established: (1) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft; (2) elsewhere than as specified in a), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft. (c) Change from IFR Flight to VFR Flight (1) An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan. (2) When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted visual meteorological conditions. (3) Change from IFR flight to VFR flight shall only be acceptable when a message initiated by the pilot-in-command containing the specific expression 'CANCELLING MY IFR FLIGHT', together with the changes, if any, to be made to the current flight plan, is received by an air traffic services unit. No invitation to change from IFR flight to VFR flight shall be made either directly or by inference.	PANS-ATM 4.8.1

SERA.5020 IFR - Rules Applicable to IFR Flights within Controlled Airspace (a) IFR flights shall comply with the provisions of Section 8 when operated in controlled airspace. (b) An IFR flight operating in cruising flight in controlled airspace shall be flown at a cruising level, or, if authorised by ATS unit to employ cruise climb techniques, between two levels or above a level, selected from the table of cruising levels in Appendix 3, except that the correlation of levels to track prescribed therein shall not apply whenever otherwise indicated in air traffic control clearances or specified by the competent authority in Aeronautical Information Publications.	
SERA.5025 IFR - Rules Applicable to IFR Flights Outside Controlled Airspace (a) Cruising Levels An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in the table of cruising levels in Appendix 3, except when otherwise specified by the competent authority for flight at or below 900 m (3 000 ft) above mean sea level. (c) Communications An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the Competent Authority in accordance with SERA.4001 (b)(3) or (4) shall maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service. (d) Position Reports An IFR flight operating outside controlled airspace and required by the competent authority to maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service, shall report position, as specified in SERA.8025 for controlled flights.	
Section 6 – Airspace classification	

SERA.6001 Classification of airspaces Member States shall, as appropriate to their needs, designate airspace in accordance with the following airspace classification and in accordance with Appendix 4: (a) *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. (b) *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. (c) *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 indicated airspeed (IAS) applies below 3 050 m (10 000 ft) AMSL, except where approved by the Competent Authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. All flights shall be subject to ATC clearance. (d) *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, except where approved by the Competent Authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. All flights shall be subject to ATC clearance.	

(e) *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, except where approved by the Competent Authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. All IFR flights shall be subject to ATC clearance. Class E shall not be used for control zones. (f) *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, except where approved by the Competent Authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. ATC clearance is not required. (g) *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, except where approved by the Competent Authority for aircraft types, which for technical or safety reasons, cannot maintain this speed. ATC clearance is not required. (h) Implementation of Class F shall be considered as a temporary measure until such time as it can be replaced by alternative classification.	

SERA.6005 Requirements for communications and SSR transponder (a) Radio Mandatory Zone (RMZ) (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, unless in compliance with alternative provisions prescribed for that particular airspace by the ANSP. (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. (b) Transponder Mandatory Zone (TMZ) (1) All flights operating in airspace designated by the competent authority as a transponder mandatory zone (TMZ) shall carry and operate SSR transponders capable of operating on Modes A and C or on Mode S, unless in compliance with alternative provisions prescribed for that particular airspace by the ANSP. (c) Airspaces designated as radio mandatory zone and/or transponder mandatory zone shall be duly promulgated in the Aeronautical Information Publications.	
Section 7 – Air Traffic Services	

SERA.7001.General - Objectives of the air traffic services 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.	
SERA.7002 Collision hazard information when ATS based on surveillance are provided (a) When an identified controlled flight is observed to be on a conflicting path with an unknown aircraft deemed to constitute a collision hazard, the pilot of the controlled flight shall, whenever practicable: (1) be informed of the unknown aircraft, and if the pilot so requests or if the situation so warrants in the opinion of the controller, avoiding action should be suggested; and (2) be notified when the conflict no longer exists.	PANS-ATM 8.8.2 AMC-GM foreseen
SERA.7005 Coordination between the aircraft operator and air traffic services (a) 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 Union legislation 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. (b) 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.	

Section 8 – Air Traffic Control Service	
SERA.8001 Application 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.	

SERA.8005 Operation of air traffic control service

(a) In order to provide air traffic control service, an air traffic control unit shall:

(1) 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;

(2) determine from the information received, the relative positions of known aircraft to each other;

(3) 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;

(4) coordinate clearances as necessary with other units:

(i) whenever an aircraft might otherwise conflict with traffic operated under the control of such other units;

(ii) before transferring control of an aircraft to such other units.

(b) Clearances issued by air traffic control units shall provide separation:

(1) between all flights in airspace Classes A and B;

(2) between IFR flights in airspace Classes C, D and E;

(3) between IFR flights and VFR flights in airspace Class C;

(4) between IFR flights and special VFR flights;

(5) between special VFR flights unless otherwise prescribed by the competent authority;

except that, when requested by the pilot of 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 subject to maintaining own separation in respect of a specific portion of the flight below 3 050 m (10 000 ft) during climb or descent, during day in visual meteorological conditions.

(c) Except for cases when a reduction in separation minima in the vicinity of aerodromes can be applied, separation by an air traffic control unit shall be obtained by at least one of the following: (1) vertical separation, obtained by assigning different levels selected from the table of cruising levels in Appendix 3 to the Annex to 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. The vertical separation minimum shall be a nominal 300 m (1 000 ft) up to and including FL 410 and a nominal 600 m (2 000 ft) above this level; (2) horizontal separation, obtained by providing: (i) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or (ii) lateral separation, by maintaining aircraft on different routes or in different geographical areas.	
SERA.8010 Separation minima (a) The selection of separation minima for application within a given portion of airspace shall be made by the ANSP responsible for the provision of air traffic services and approved by the competent authority concerned. (b) For traffic that will pass from one into the other of neighbouring airspaces and for routes that are closer to the common boundary of the neighbouring airspaces than the separation minima applicable in the circumstances, the selection of separation minima shall be made in consultation between the ANSPs responsible for the provision of air traffic services in neighbouring airspace. (c) Details of the selected separation minima and of their areas of application shall be notified: (1) to the air traffic services units concerned; and (2) 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.	AMC-GM foreseen

SERA.8012 Application of wake turbulence separation (a) Wake turbulence separation shall be applied to aircraft in the approach and departure phases of flight in the following circumstances: (1) an aircraft is operating directly behind another aircraft at the same altitude or less than 300 m (1 000 ft) below; or (2) both aircraft are using the same runway, or parallel runways separated by less than 760 m (2 500 ft); or (3) an aircraft is crossing behind another aircraft, at the same altitude or less than 300 m (1 000 ft) below.	PANS-ATM 8.7.3.4.1 AMC-GM foreseen

SERA.8015 Air traffic control clearances	
(a) Air traffic control clearances shall be based solely on the requirements for providing air traffic control service.	
(1) Clearances shall be issued solely for expediting and separating air traffic and are based on known traffic conditions which affect safety in aircraft operation. Such traffic conditions include not only aircraft in the air and on the manoeuvring area over which control is being exercised, but also any vehicular traffic or other obstructions not permanently installed on the manoeuvring area in use.	PANS-ATM 4.5.1.1
(2) ATC units shall issue such ATC clearances as are necessary to prevent collisions and to expedite and maintain an orderly flow of air traffic.	PANS-ATM 4.5.1.4
(3) ATC clearances shall be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with them.	PANS-ATM 4.5.1.5
(b) Operation subject to clearance	
(1) An air traffic control clearance shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.	
(2) The pilot-in-command of an aircraft shall inform ATC if an air traffic control clearance is not satisfactory. In such cases, ATC will issue an amended clearance, if practicable.	
(3) Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.	
(4) *Potential reclearance in flight.* If, prior to departure, it is anticipated that, depending on fuel endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.	
(5) An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome control tower and shall comply with any instructions given by that unit.	
(c) Clearances for transonic flight	
(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) The air traffic control clearance relating to the deceleration and descent of an aircraft from supersonic cruise to subsonic flight shall seek to provide for uninterrupted descent at least during the transonic phase.	

(d) Contents of clearances An air traffic control clearance shall indicate: (1) aircraft identification as shown in the flight plan; (2) clearance limit; (3) route of flight; (i) The route of flight shall be detailed in each clearance when deemed necessary. (ii) The phrase 'cleared via flight planned route' shall not be used when granting a re-clearance. (1) level(s) of flight for the entire route or part thereof and changes of levels if required; (2) any necessary instructions or information on other matters such as approach or departure manoeuvres, communications and the time of expiry of the clearance.	PANS-ATM 4.5.7.2.1 PANS-ATM 4.5.7.2.2 GM foreseen
(e) Changes in clearance regarding route or level (1) When issuing a clearance covering a requested change in route or level, the exact nature of the change shall be included in the clearance. (2) When traffic conditions will not permit clearance of a requested change, the word 'UNABLE' shall be used. When warranted by circumstances, an alternative route or level should be offered.	PANS-ATM 4.5.7.4.1 PANS-ATM 4.5.7.4.2
(f) Clearance related to altimetry (1) For flights in the vicinity of aerodromes and within terminal control areas the vertical position of aircraft shall, except as provided for in (5) below, be expressed in terms of altitudes at or below the transition altitude and in terms of flight levels at or above the transition level. While passing through the transition layer, vertical position shall be expressed in terms of flight levels when climbing and in terms of altitudes when descending. (2) The flight crew shall be provided with the transition level in due time prior to reaching it during descent. (3) A QNH altimeter setting shall be included in the descent clearance when first cleared to an altitude below the transition level, in approach clearances or clearances to enter the traffic circuit, and in taxi clearances for departing aircraft, except when it is known that the aircraft has already received the information in a directed transmission. (4) A QFE altimeter setting shall be provided to aircraft on request or on a regular basis in accordance with local arrangements. (5) When an aircraft which has been given clearance to land is completing its approach using atmospheric pressure	PANS-ATM 4.10.1.1 PANS-ATM 4.10.4.3 GM foreseen PANS-ATM 4.10.4.5 PANS-ATM 4.10.4.6 PANS-ATM 4.10.1.2

at aerodrome elevation (QFE), the vertical position of the aircraft shall be expressed in terms of height above aerodrome elevation during that portion of its flight for which QFE may be used, except that it shall be expressed in terms of height above runway threshold elevation: a) for instrument runways, if the threshold is 2 m (7 ft) or more below the aerodrome elevation; and b) for precision approach runways	and 4.10.4.6
(g) Conditional clearances	
Conditional phrases, such as 'behind landing aircraft' or 'after departing aircraft', shall not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot. The aircraft or vehicle causing the condition in the clearance issued shall be the first aircraft/vehicle to pass in front of the other aircraft concerned. In all cases a conditional clearance shall be given in the following order and consist of:	PANS-ATM 12.2.7
(i) identification;	
(ii) the condition;	GM foreseen
(iii) the clearance; and	
(iv) brief reiteration of the condition,	
(h) Read-back of clearances and safety-related information	
(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:	
(i) ATC route clearances;	
(ii) clearances and instructions to enter, land on, take off from, hold short of, cross, taxi and backtrack on any runway; and	
(iii) runway-in-use, altimeter settings, SSR codes, newly assigned communication channels, level instructions, heading and speed instructions; and	
(iv) transition levels, whether issued by the controller or contained in ATIS broadcasts.	
(2) 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.	
(3) 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.	

(4) Voice read-back of CPDLC messages shall not be required, unless otherwise specified by the ANSP.	

(i) Coordination of clearances

(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 described in provisions (2) to (6).

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

(i) when it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or

(ii) when there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

(3) When coordination as in (2) 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.

(4) 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.

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

(ii) A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.

(iii) 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.

(5) 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.

(6) 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 the 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.

SERA.8020 Adherence to Flight Plan (a) Except as provided for in (b) and (d) an aircraft shall adhere to the current flight plan or the applicable portion of a current flight plan submitted for a controlled flight unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or unless an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, after such emergency authority is exercised, the appropriate air traffic services unit shall be notified of the action taken and that this action has been taken under emergency authority. (1) Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, controlled flights shall, in so far as practicable: (i) when on an established ATS route, operate along the defined centre line of that route; or (ii) when on any other route, operate directly between the navigation facilities and/or points defining that route. (2) Unless otherwise authorised by the competent authority, or directed by the appropriate air traffic control unit, an aircraft operating along an ATS route segment defined by reference to very high frequency omnidirectional radio ranges shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the changeover point, where established. (3) Deviation from the requirements in (2) shall be notified to the appropriate air traffic services unit. (b) *Inadvertent changes.* In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken: (1) Deviation from track: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable. (2) Variation in true airspeed: if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed. (3) Change in time estimate: if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 2 ~~3~~ minutes from that notified to air traffic services, or such other period of time as is prescribed by the competent authority, ~~or on the basis of ICAO regional air navigation agreements,~~ a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit. (4) Additionally, when an ADS-C agreement is in place, the air traffic services unit shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS-C event contract.	Amendment 43 to Annex 2 (15/11/2012)

(c) *Intended changes.* Requests for flight plan changes shall include information as indicated hereunder: (1) Change of cruising level: aircraft identification; requested new cruising level and cruising speed at this level, revised time estimates (when applicable) at subsequent flight information region boundaries. (2) Change of route: (i) *Destination unchanged:* aircraft identification; flight rules; description of new route of flight including related flight plan data beginning with the position from which requested change of route is to commence; revised time estimates; any other pertinent information. (ii) *Destination changed:* aircraft identification; flight rules; description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which requested change of route is to commence; revised time estimates; alternate aerodrome(s); any other pertinent information. (d) *Weather deterioration below the VMC.* When it becomes evident that flight in VMC in accordance with its current flight plan will not be practicable, a VFR flight operated as a controlled flight shall: (1) request an amended clearance enabling the aircraft to continue in VMC to destination or to an alternative aerodrome, or to leave the airspace within which an ATC clearance is required; or (2) if no clearance in accordance with a) can be obtained, continue to operate in VMC and notify the appropriate ATC unit of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome; or (3) if operated within a control zone, request authorisation to operate as a special VFR flight; or (4) request clearance to operate in accordance with the instrument flight rules.	

SERA.8025 Position Reports (a) Unless exempted by the competent authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the competent authority or specified by the appropriate air traffic services unit. (1) Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested. (2) When a controlled flight has been exempted from the requirement to report over compulsory reporting points, pilots shall resume voice or CPDLC position reporting: (i) when so instructed; (ii) when advised that the ATS surveillance service has been terminated; or (iii) when advised that ATS surveillance identification is lost unless automated position reporting is in effect. (3) The format of position reports shall be in accordance with Appendix 5.	PANS-ATM 8.6.4.4 GM foreseen
SERA.8030 Termination of Control A controlled flight shall, except when landing at a controlled aerodrome, advise the appropriate ATC unit as soon as it ceases to be subject to air traffic control service.	

SERA.8035 Communications (a) An aircraft operated as a controlled flight shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the relevant ANSP in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome. (1) The requirement for an aircraft to maintain an air-ground voice communication watch shall remain in effect when CPDLC has been established. (b) The Member States shall comply with the appropriate provisions on communication failures as have been adopted under the Chicago Convention. The Commission shall propose common European procedures by 31 December 2015 at latest, for implementation of the said ICAO provisions in Union law.	AMC-GM foreseen
Section 9 — Flight information service	
SERA.9001 Application (a) 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: (1) provided with air traffic control service; or (2) otherwise known to the relevant air traffic services units. (b) 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. (c) 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.	

SERA.9005 Scope of flight information service

(a) Flight information service shall include the provision of pertinent:

(1) SIGMET and AIRMET information;

(2) information concerning pre-eruption volcanic activity, volcanic eruptions and volcanic ash clouds;

(3) information concerning the release into the atmosphere of radioactive materials or toxic chemicals;

(4) information on changes in the availability of radio navigation services;

(5) 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;

(6) information on unmanned free balloons;

and of any other information likely to affect safety.

(b) Flight information service provided to flights shall include, in addition to that outlined in (a), the provision of information concerning:

(1) weather conditions reported or forecast at departure, destination and alternate aerodromes;

(2) collision hazards, to aircraft operating in airspace Classes C, D, E, F and G;

(3) 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.

(c) Flight information service provided to VFR flights shall include, in addition to that outlined in (a), 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.

SERA.9010 Automatic Terminal Information Service (ATIS) (a) Use of the ATIS messages in directed request/reply transmissions (1) When requested by the pilot, the applicable ATIS message(s) shall be transmitted by the appropriate air traffic services unit. (2) Whenever Voice-ATIS and/or D-ATIS is provided: (i) aircraft shall acknowledge receipt of the information upon establishing communication with the ATS unit providing approach control service, the aerodrome control tower or Aerodrome Flight Information Service (AFIS), as appropriate; and (ii) 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) 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 (2). (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.	
(b) ATIS for arriving and departing aircraft ATIS messages containing both arrival and departure information shall contain the following elements of information in the order listed: (1) name of aerodrome; (2) arrival and/or departure indicator; (3) contract type, if communication is via D-ATIS; (4) designator; (5) time of observation, if appropriate; (6) type of approach(es) to be expected; (7) the runway(s) in use; status of arresting system constituting a potential hazard, if any; (8) significant runway surface conditions and, if appropriate, braking action;	

(9) holding delay, if appropriate; (10) transition level, if applicable; (11) other essential operational information; (12) 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; (13) visibility and, when applicable, RVR; ([21]) (14) present weather; ([*]) (15) 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; ([*]) (16) air temperature; (17) dew point temperature; (18) altimeter setting(s); (19) 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; (20) trend forecast, when available; and (21) specific ATIS instructions.	

[21] ([*]) 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.

(c) ATIS for arriving aircraft ATIS messages containing arrival information only shall contain the following elements of information in the order listed: (1) name of aerodrome; (2) arrival indicator; (3) contract type, if communication is via D-ATIS; (4) designator; (5) time of observation, if appropriate; (6) type of approach(es) to be expected; (7) main landing runway(s); status of arresting system constituting a potential hazard, if any; (8) significant runway surface conditions and, if appropriate, braking action; (9) holding delay, if appropriate; (10) transition level, if applicable; (11) other essential operational information; (12) 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; (13) visibility and, when applicable, RVR; (*) (14) present weather; ([22]) (15) 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; (*) (16) air temperature; (17) dew point temperature; (18) altimeter setting(s);	

[22] (*) 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.

(19) any available information on significant meteorological phenomena in the approach area including wind shear, and information on recent weather of operational significance; (20) trend forecast, when available; and (21) specific ATIS instructions.	

(d) ATIS for departing aircraft ATIS messages containing departure information only shall contain the following elements of information in the order listed: (1) name of aerodrome; (2) departure indicator; (3) contract type, if communication is via D-ATIS; (4) designator; (5) time of observation, if appropriate; (6) runway(s) to be used for take-off; status of arresting system constituting a potential hazard, if any; (7) significant surface conditions of runway(s) to be used for take-off and, if appropriate, braking action; (8) departure delay, if appropriate; (9) transition level, if applicable; (10) other essential operational information; (11) 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; (12) visibility and, when applicable, RVR; (*) (13) present weather; ([23]) (14) 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; (*) (15) air temperature; (16) dew point temperature; (17) altimeter setting(s); (18) any available information on significant meteorological phenomena in the climb-out area including wind shear;	

[23] (*) 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

(19) trend forecast, when available; and (20) specific ATIS instructions.	
Section 10 – Alerting service	
SERA.10001 Application (a) Alerting service shall be provided by the air traffic services units: (1) for all aircraft provided with air traffic control service; (2) in so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and (3) to any aircraft known or believed to be the subject of unlawful interference. (b) When so prescribed by the competent authority, aircraft equipped with suitable two-way radio-communications shall report during the period twenty to forty minutes following the time of last contact, whatever the purpose of such contact, merely to indicate that the flight is progressing according to plan, such report to comprise identification of the aircraft and the words 'Operations normal'. (c) The 'Operations normal' message shall be transmitted air-ground to an appropriate air traffic services unit.	PANS-ATM 9.2.1.2 PANS-ATM 9.2.1.3 GM foreseen
SERA.10005 Information to aircraft operating in the vicinity of an aircraft in a state of emergency (a) 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 (b), be informed of the nature of the emergency as soon as practicable. (b) 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.	
Section 11 – Interference, Emergency Contingencies and Interception	

SERA.11001 ~~Unlawful interference~~ General ~~(a) An aircraft which is being subjected to unlawful interference shall endeavour to set the transponder to Code 7500 and notify the appropriate ATS unit of, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimize conflict with other aircraft.~~ ~~(b) If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the competent authority unless considerations aboard the aircraft dictate otherwise.~~ (a) 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.	923/2012 - 11005
(b) Subsequent ATC actions will be based on the intentions of the pilot, the overall air traffic situation and the real-time dynamics of the contingency.	Doc 7030 – 9.5.1.2
SERA.11005 ~~Service to aircraft in the event of an emergency~~ Unlawful interference ~~(a) 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.~~	AMC-GM foreseen
(a) An aircraft which is being subjected to unlawful interference shall endeavour to set the transponder to Code 7500 and notify the appropriate ATS unit of, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimize conflict with other aircraft.	923/2012 - 11001
(b) If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the competent authority unless considerations aboard the aircraft dictate otherwise.	923/2012 - 11001
(c) 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.	923/2012 - 11005
(d) When an occurrence of unlawful interference with an aircraft takes place or is suspected, air traffic services units	923/2012 - 11005

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.	
SERA.11010 ~~In-flight contingencies~~ Strayed or unidentified aircraft (a) As soon as an air traffic services unit becomes aware of a strayed aircraft it shall take all necessary steps as outlined in (1) and (3) to assist the aircraft and to safeguard its flight. (1) If the aircraft's position is not known, the air traffic services unit shall: (i) attempt to establish two-way communication with the aircraft, unless such communication already exists; (ii) use all available means to determine its position; (iii) 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; (iv) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft; (v) request from the units referred to in (iii) and (iv) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position. (2) The requirements in (1)(iv) and (1)(v) shall apply also to air traffic services units informed in accordance with (1)(iii). (3) When the aircraft's position is established, the air traffic services unit shall: (i) 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 (ii) 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.	AMC-GM foreseen 923/2012 - 11010

(b) 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: (1) attempt to establish two-way communication with the aircraft; (2) 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; (3) 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; (4) attempt to obtain information from other aircraft in the area. (5) the air traffic services unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established. (c) 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.	
SERA.11012 Minimum Fuel and Fuel Emergency	AMC-GM foreseen PANS-ATM 15.5.4.1
a) When a pilot reports a state of minimum fuel, the controller shall inform the pilot as soon as practicable of any anticipated delays or that no delays are expected.	
b) When the level of fuel renders declaring a situation of distress necessary, the pilot, in accordance with SERA.14095, shall indicate this by using the radiotelephony distress signal (MAYDAY), preferably spoken 3 times, followed by the nature of the distress condition (FUEL).	Annex 10 Vol 2 5.3.2.1.1
SERA.11013 Degraded aircraft performance	
a) Whenever, as a result of failure or degradation of navigation, communications, altimetry, flight control or other systems, aircraft performance is degraded below the level required for the airspace in which it is operating, the flight crew shall advise the ATC unit concerned without delay. Where the failure or degradation affects the separation minimum currently being employed, the controller shall take action to establish another appropriate type of separation or separation minimum.	AMC-GM foreseen for several items in this section PANS-ATM 5.2.2
b) Degradation or failure of the RNAV system	
When an aircraft cannot meet the specifications, as required by the RNAV/RNP airspace, route or procedure, as a result of	Doc 7030 – 9.4

a failure or degradation of the RNAV system, a revised clearance shall be requested by the pilot.	

c) Loss of vertical navigation performance required for RVSM	
1. The pilot shall inform ATC as soon as possible of any circumstances where the vertical navigation performance requirements for RVSM airspace cannot be maintained. In such cases, the pilot shall obtain a revised ATC clearance prior to initiating any deviation from the cleared route and/or flight level, whenever possible. When a revised ATC clearance cannot be obtained prior to such a deviation, the pilot shall obtain a revised clearance as soon as possible thereafter.	Doc 7030 – 9.5.1.1
2. During operations in or vertical transit through reduced vertical separation minimum (RVSM) airspace with aircraft not approved for RVSM operations, pilots shall report non-approved status as follows: a) at initial call on any channel within RVSM airspace; b) in all requests for level changes; and c) in all readbacks of level clearances.	PANS-ATM 12.2.4 AMC with phraseology 12.3.1.13 c is foreseen
3. Air traffic controllers shall explicitly acknowledge receipt of messages from aircraft reporting RVSM non-approved status.	PANS-ATM 12.2.5
4. Degradation of aircraft equipment – pilot reported	
a. When informed by the pilot of an RVSM-approved aircraft operating in RVSM airspace that the aircraft's equipment no longer meets the RVSM requirements, ATC shall consider the aircraft as non-RVSM-approved.	Doc 7030 – 9.5.2
b. ATC shall take action immediately to provide a minimum vertical separation of 600 m (2 000 ft) or an appropriate horizontal separation from all other aircraft concerned that are operating in RVSM airspace. An aircraft rendered non-RVSM-approved shall normally be cleared out of RVSM airspace by ATC when it is possible to do so.	
c. Pilots shall inform ATC, as soon as practicable, of any restoration of the proper functioning of equipment required to meet the RVSM requirements.	
d. The first ACC to become aware of a change in an aircraft's RVSM status shall coordinate with adjacent ACCs, as appropriate.	
5. Severe turbulence – not forecast	
a. When an aircraft operating in RVSM airspace encounters severe turbulence due to weather or wake vortex that the pilot believes will impact the aircraft's capability to maintain its cleared flight level, the pilot shall inform ATC. ATC shall establish either an appropriate horizontal separation or an increased minimum vertical separation.	Doc 7030 – 9.5.3
b. ATC shall, to the extent possible, accommodate pilot requests for flight level and/or route changes and	

shall pass on traffic information as required. c. ATC shall solicit reports from other aircraft to determine whether RVSM should be suspended entirely or within a specific flight level band and/or area. d. The ACC suspending RVSM shall coordinate such suspension(s) and any required adjustments to sector capacities with adjacent ACCs, as appropriate, to ensure an orderly progression to the transfer of traffic. 6. Severe turbulence – forecast a. When a meteorological forecast is predicting severe turbulence within RVSM airspace, ATC shall determine whether RVSM should be suspended and, if so, for how long and for which specific flight level(s) and/or area. b. In cases where RVSM will be suspended, the ACC suspending RVSM shall coordinate with adjacent ACCs with regard to the flight levels appropriate for the transfer of traffic, unless a contingency flight level allocation scheme has been determined by letter of agreement. The ACC suspending RVSM shall also coordinate applicable sector capacities with adjacent ACCs as appropriate.	Doc 7030 – 9.5.4 [GM foreseen for several items of this section]
SERA.11014 ACAS resolution advisory (RA) a) In the event of an RA, pilots shall: 1) respond immediately by following the RA as indicated, unless doing so would jeopardize the safety of the aeroplane; 2) follow the RA even if there is a conflict between the RA and an air traffic control (ATC) instruction to manoeuvre; 3) not manoeuvre in the opposite sense to an RA; 4) as soon as possible, as permitted by flight crew workload, notify the appropriate ATC unit of any RA which requires a deviation from the current ATC instruction or clearance; 5) promptly comply with any modified RAs; 6) limit the alterations of the flight path to the minimum extent necessary to comply with the RAs; 7) promptly return to the terms of the ATC instruction or clearance when the conflict is resolved; and 8) notify ATC when returning to the current clearance.	PANS OPS – Section III – Chapter 3 - 3.2
b) When a pilot reports an ACAS resolution advisory (RA), the controller shall not attempt to modify the aircraft flight path until the pilot reports 'CLEAR OF CONFLICT'.	PANS ATM – 15.7.3.2

c) Once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the RA. The controller shall resume responsibility for providing separation for all the affected aircraft when: 1) the controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance, or 2) the controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew. **SERA.11015 Interception** (a) Except for intercept and escort service provided on request to an aircraft, interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Member States in compliance with the Convention on International Civil Aviation, and in particular Article 3(d) under which ICAO Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the safety of navigation of civil aircraft. (b) The pilot-in-command of a civil aircraft, when intercepted, shall: (1) immediately follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Tables S11-1 and S11-2; (2) notify, if possible, the appropriate air traffic services unit; (3) attempt to establish radio-communication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz; (4) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit. if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.	PANS ATM – 15.7.3.3

Table S11 – 1

Signals Initiated by Intercepting Aircraft and Responses by Intercepted Aircraft

Series	*INTERCEPTING Aircraft Signals*	*Meaning*	*INTERCEPTED Aircraft Responds*	*Meaning*
1	DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading. *Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.* *Note 2.— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.*	You have been intercepted. Follow me.	DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.
2	DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT — Rocking the aircraft.	Understood, will comply.

3	DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome.	DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.		

Table S11 – 2
Signals Initiated by Intercepted Aircraft and Responses by Intercepting Aircraft

Series	*INTERCEPTED Aircraft Signals*	*Meaning*	*INTERCEPTING Aircraft Responds*	*Meaning*		
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.		
5	DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.		
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.		

(c) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

(d) If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

(e) If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table S11-3 and transmitting each phrase twice:

Table S11-3

Phrases for use by INTERCEPTING aircraft			*Phrases for use by INTERCEPTED aircraft*		
Phrase	*Pronunciation*[1]	*Meaning*	*Phrase*	*Pronunciation*[1]	*Meaning*
CALL SIGN	KOL SA-IN	What is your call sign?	CALL SIGN (call sign)[2]	KOL SA-IN (call sign)	My call sign is (call sign)
FOLLOW	FOL-LO	Follow me	WILCO	VILL-KO	Understood
DESCEND	DEE-SEND	Descend for landing	Will comply		
YOU LAND	YOU LAAND	Land at this aerodrome	CAN NOT	KANN NOTT	Unable to comply
PROCEED	PRO-SEED	You may proceed	REPEAT	REE-PEET	Repeat your instruction
			AM LOST	AM LOSST	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK[3]	HI-JACK	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE-SEND	I require descent

1. In the second column, syllables to be emphasized are underlined.

2. The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.

3. Circumstances may not always permit, nor make desirable, the use of the phrase 'HIJACK'.

(f) 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: (1) 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; (2) inform the pilot of the intercepted aircraft of the interception; (3) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft; (4) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary; (5) in close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft; (6) inform air traffic services units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions. (g) 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: (1) 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 (f); (2) relay messages between the intercepted aircraft and the appropriate air traffic services unit, the intercept control unit or the intercepting aircraft.	
Section 12 — Services related to meteorology — Aircraft observations and reports by voice communications **SERA.12001 Types of aircraft observations** (a) The following aircraft observations shall be made during any phase of the flight: (1) special aircraft observations; and (2) other non-routine aircraft observations.	

SERA.12005 Special aircraft observations (a) Special observations shall be made and reported by all aircraft whenever the following conditions are encountered or observed: (1) moderate or severe turbulence; or (2) moderate or severe icing; or (3) severe mountain wave; or (4) thunderstorms, without hail, that are obscured, embedded, widespread or in squall lines; or (5) thunderstorms, with hail, that are obscured, embedded, widespread or in squall lines; or (6) heavy dust storm or heavy sandstorm; or (7) volcanic ash cloud; or (8) pre-eruption volcanic activity or a volcanic eruption. (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed. (c) Flight crews shall compile the reports using forms based on the model AIREP SPECIAL form at Appendix 5. The detailed instructions for reporting, as given at Appendix 5, shall be complied with. (1) The detailed instructions, including the formats of messages and the phraseologies given at Appendix 5, shall be used by flight crews when transmitting air-reports and by air traffic services units when retransmitting such reports. (2) Special air-reports containing observations of volcanic activity shall be recorded on the special air-report of volcanic activity form. Forms based on the model form for special air-reports of volcanic activity at Appendix 5 shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.	PANS-ATM 4.12.4.1 PANS-ATM 4.12.4.2 PANS-ATM 4.12.5 *Appendix 5 is transposed from PANS-ATM, Appendix 1, (Amendment 3, 18/11/2010)*
SERA.12010 Other non-routine aircraft observations When other meteorological conditions not listed under SERA.12005 (a), 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.	

SERA.12015 Reporting of aircraft observations by voice communication (a) Aircraft observations shall be reported during flight at the time the observation is made or as soon thereafter as is practicable. (b) Aircraft observations shall be reported as air-reports and shall comply with the technical specifications in Appendix 5.	
SERA.12020 Exchange of air-reports (a) ATS units shall transmit, as soon as practicable, special and non-routine air-reports to: (1) other aircraft concerned; (2) the associated meteorological watch office (MWO) in accordance with Appendix 5; and (3) other ATS units concerned. (b) Transmissions to aircraft shall be repeated at a frequency and continued for a period of time which shall be determined by the ATS unit concerned.	AMC-GM foreseen

(NEW) SECTION 13 Use of SSR transponders **Section 13 — Use of SSR transponders**	
SERA.13001 Operation of SSR transponder (a) When an aircraft carries a serviceable transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where secondary surveillance radar (SSR) is used for ATS purposes. (b) Pilots shall not operate the IDENT feature unless requested by ATC.	PANS-OPS-Vol I-Part III- Section 3, Chapter 1, 1.1.1 PANS-OPS-Vol I-Part III- Section 3, Chapter 1, 1.1.6
SERA.13005 SSR transponder Mode A code setting (a) To indicate that it is in a specific contingency situation the pilot of an aircraft equipped with SSR shall: (1) Select Code A7700 to indicate a state of emergency, unless ATC has previously directed the pilot to operate the transponder on a specified code. In the latter case, a pilot may nevertheless select Code A7700 whenever there is a specific reason to believe that this would be the best course of action; (2) Select Code A7600 to indicate a state of radio-communication failure; (3) Attempt to select Code A7500 to indicate a state of unlawful interference. If circumstances so warrant, Code A7700 should be used instead.	AMC-GM foreseen in this section PANS-ATM, 8.5.2.1 combined with P-OPS-Vol I-Part III, Section 3, Chapter 1, 1. PANS-ATM, 8.5.2.1 combined with P-OPS-Vol I-Part III, Section 3, Chapter 1, 1.5 PANS-OPS-Vol I-Part III, Section 3, Ch 1, 1.6.1

(b) Except in cases described in SERA.13005 (a) above, the pilot shall: (1) Operate the transponder and select Mode A codes as directed by the ATS unit with which contact is being made; or (2) Operate the transponder Mode A Code 7000 when not receiving ATS service in order to improve detection of suitably equipped aircraft in areas specified by the competent authority; or (3) In absence of ATS directions, operate the transponder Mode A codes as prescribed by the competent authority.	PANS-OPS-Vol I-Part III- Section 3, Chapter 1, 1.1.2 and & ICAO EUR Doc023 – 4.2.1
(c) When it is observed that the Mode A code shown on the situation display is different to what has been assigned to the aircraft: (1) the pilot shall be requested to confirm the code selected and, if the situation warrants, to reselect the correct code; (2) if the discrepancy between assigned and displayed Mode A codes still persists, the pilot may be requested to stop the operation of the aircraft's transponder. The next control position and any other affected unit using SSR in the provision of ATS shall be informed accordingly.	PANS-ATM 8.5.3.1- 8.5.3.2
SERA.13010 Pressure altitude derived information	
(a) When the aircraft carries serviceable Mode C equipment, the pilot shall continuously operate this mode, unless otherwise dictated by ATC.	PANS-OPS Part III, Section 3, Ch 1, 1.1.3
(b) Unless otherwise prescribed by the competent authority, verification of the pressure altitude derived level information displayed to the controller shall be effected at least once by each suitably equipped ATC unit on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter.	PANS-ATM 8.5.5.1.2 – 1st part, the rest of 8.5.5.1.2 to be transposed in Part ATS AMC-GM foreseen

SERA.13015 SSR transponder Mode S aircraft identification setting (a) Aircraft equipped with Mode S having an aircraft identification feature shall transmit the aircraft identification as specified in Item 7 of the ICAO flight plan or, when no flight plan has been filed, the aircraft registration. (b) Whenever it is observed on the situation display that the aircraft identification transmitted by a Mode S-equipped aircraft is different from that expected from the aircraft, the pilot shall be requested to confirm and, if necessary, re-enter the correct aircraft identification. (c) If, following confirmation by the pilot that the correct aircraft identification has been set on the Mode S identification feature, the discrepancy continues to exist, the following actions shall be taken by the controller: (1) inform the pilot of the persistent discrepancy; (2) where possible, correct the label showing the aircraft identification on the situation display; and (3) notify the next control position and any other unit concerned using Mode S for identification purposes that the aircraft identification transmitted by the aircraft is erroneous.	PANS-ATM 8.5.3.3 – 8.5.3.4 – 8.5.3.5
SERA.13020 SSR transponder failure when the carriage of a functioning transponder is mandatory (a) In case of a transponder failure after departure, ATC units shall attempt to provide for continuation of the flight to the destination aerodrome in accordance with the flight plan. Pilots may, however, expect to comply with specific restrictions. (b) In the case of a transponder which has failed and cannot be restored before departure, pilots shall: (1) inform ATS as soon as possible, preferably before submission of a flight plan; (2) insert in item 10 of the ICAO flight plan form under SSR the character N for complete unserviceability of the transponder or, in case of partial transponder failure, insert the character corresponding to the remaining transponder capability; (3) comply with any published procedures for requesting an exemption from the requirements to carry a functioning SSR transponder;	PANS-OPS Part III, Section 3, Ch 1, 1.7.1 PANS-OPS Part III, Section 3, Ch 1, 1.7.2 GM foreseen

(NEW) SECTION 14 Voice communication procedures

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Section 14 Voice communication procedures

SERA.14001 General

Standardized phraseology shall be used in all situations for which it has been specified. Only when standardized phraseology cannot serve an intended transmission, plain language shall be used.

GM foreseen

ICAO Annex 10 Vol II 5.1.1.1

SERA.14005 Categories of messages

(a) The categories of messages handled by the aeronautical mobile service and the order of priority in the establishment of communications and the transmission of messages shall be in accordance with the following table.

ICAO Annex 10 Vol II 5.1.8

Message category and Radiotelephony order of priority signal	*Radiotelephony signal*
a) Distress calls, distress messages and distress traffic	**MAYDAY**
b) Urgency messages, including messages preceded by the medical transports signal	**PAN PAN** *or* **PAN PAN MEDICAL**
c) Communications relating to direction finding	—
d) Flight safety messages	—
e) Meteorological messages	—

f) Flight regularity messages	—
(b) *Distress messages and distress traffic* shall be handled in accordance with the provisions of SERA.14090. (c) *Urgency messages and urgency traffic,* including messages preceded by the medical transports signal, shall be handled in accordance with the provisions of SERA.14090. **SERA.14010 Flight safety messages** Flight safety messages shall comprise the following: (a) movement and control messages; (b) messages originated by an aircraft operator or by an aircraft, of immediate concern to an aircraft in flight; (c) meteorological advice of immediate concern to an aircraft in flight or about to depart (individually communicated or for broadcast); (d) other messages concerning aircraft in flight or about to depart.	ICAO Annex 10 Vol II 5.1.8.1 ICAO Annex 10 Vol II 5.1.8.2 ICAO Annex 10 Vol II 5.1.8.4
SERA.14015 Language to be used (a) The air-ground radiotelephony communications shall be conducted in the English language or in the language normally used by the station on the ground. (b) The English language shall be available, on request from any aircraft, at all stations on the ground serving designated aerodromes and routes used by international air services. (c) The languages available at a given station on the ground shall form part of the Aeronautical Information Publications and other published aeronautical information concerning such facilities.	ICAO Annex 10 Vol II 5.2.1.2 AMC-GM foreseen ICAO Annex 10 Vol II 5.2.1.2.1 amended ICAO Annex 10 Vol II 5.2.1.2.2 amended ICAO Annex 10 Vol II 5.2.1.2.3

SERA.14020 Word spelling in radiotelephony.

When proper names, service abbreviations and words of which the spelling is doubtful are spelled out in radiotelephony the alphabet in the table S14-2 shall be used.

ICAO Annex 10 Vol II 5.2.1.3

Table S14-2. The Radiotelephony Spelling Alphabet

Letter	*Word*	*Approximate pronunciation Latin alphabet representation*
A	**Alfa**	AL FAH
B	**Bravo**	BRAH VOH
C	**Charlie**	CHAR LEE *or* SHAR LEE
D	**Delta**	DELL TAH
E	**Echo**	ECK OH
F	**Foxtrot**	FOKS TROT
G	**Golf**	GOLF
H	**Hotel**	HO TELL
I	**India**	IN DEE AH
J	**Juliett**	JEW LEE ETT
K	**Kilo**	KEY LOH
L	**Lima**	LEE MAH
M	**Mike**	MIKE

N	**November**	NO VEM BER		
O	**Oscar**	OSS CAH		
P	**Papa**	PAH PAH		
Q	**Quebec**	KEH BECK		
R	**Romeo**	ROW ME OH		
S	**Sierra**	SEE AIR RAH		
T	**Tango**	TANG GO		
U	**Uniform**	YOU NEE FORM *or* OO NEE FORM		
V	**Victor**	VIK TAH		
W	**Whiskey**	WISS KEY		
X	**X-ray**	ECKS RAY		
Y	**Yankee**	YANG KEY		
Z	**Zulu**	ZOO LOO		
Note.— In the approximate representation using the Latin alphabet, syllables to be emphasized are underlined.				
SERA.14025 Principles governing the identification of ATS routes other than standard departure and arrival routes (a) Use of ATS route designators in communications				ICAO Annex 11 Appendix 1 AMC-GM foreseen

(1) In voice communications, the basic letter of a designator shall be spoken in accordance with the ICAO spelling alphabet as defined in table S14-2. (2) Where the prefixes K, U or S are used, they shall, in voice communications, be spoken as follows: K — KOPTER U — UPPER S — SUPERSONIC The word 'kopter' shall be pronounced as in the word 'helicopter' and the words 'upper' and 'supersonic' as in the English language. **SERA.14030 Use of designators for standard instrument departure and arrival routes** The plain language designator of standard instrument departure or arrival routes shall be used in voice communications.	Annex 11 Appendix 3 paragraph 7 AMC-GM foreseen
SERA.14035 Transmission of numbers in radiotelephony (a) Transmission of numbers (1) All numbers used in the transmission of aircraft call sign, headings, runway, wind direction and speed shall be transmitted by pronouncing each digit separately. i) Flight levels shall be transmitted by pronouncing each digit separately except for the case of flight levels in whole hundreds. ii) The altimeter setting shall be transmitted by pronouncing each digit separately except for the case of a setting of 1 000 hPa which shall be transmitted as ONE THOUSAND. iii) All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the information shall be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND. (2) All numbers used in transmission of other information than those described in (a) (1) shall be transmitted by pronouncing each digit separately, except that all numbers containing whole hundreds and whole thousands, shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate.	GM foreseen ICAO Annex 10 Vol II 5.2.1.4 amended (APDSG-NETOPS) ICAO Annex 10 Vol II 5.2.1.4.1.1 ICAO Annex 10 Vol II 5.2.1.4.1.2

Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND followed by the number of hundreds followed by the word HUNDRED.

(3) In cases where there is a need to clarify the number transmitted as whole thousands and/or whole hundreds, the number shall be transmitted by pronouncing each digit separately.

(4) When providing information regarding relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the digits together such as TEN O'CLOCK or ELEVEN O'CLOCK.

(5) Numbers containing a decimal point shall be transmitted as prescribed in (a) (1) with the decimal point in appropriate sequence being indicated by the word DECIMAL.

ICAO Annex 10 Vol II 5.2.1.4.1.3

(6) All six digits of the numerical designator shall be used to identify the transmitting channel in VHF radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits shall be used.

ICAO Annex 10 Vol II 5.2.1.7.3.4.3

SERA.14040 Pronunciation of numbers

ICAO Annex 10 Vol II 5.2.1.4.3

When the language used for communication is English, numbers shall be transmitted using the pronunciation shown in table S14-3:

ICAO Annex 10 Vol II 5.2.1.4.3.1

Numeral or numeral element	*Pronunciation*
0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-er
5	FIFE
6	SIX
7	SEV-en
8	AIT

9 Decimal Hundred Thousand	NIN-er DAY-SEE-MAL HUN-dred TOU-SAND		

SERA.14045 Transmitting technique

ICAO Annex 10 Vol II 5.2.1.5

(a) Transmissions shall be conducted concisely in a normal conversational tone.

ICAO Annex 10 Vol II 5.2.1.5.2

(b) The following words and phrases shall be used in radiotelephony communications as appropriate and shall have the meaning ascribed hereunder:

ICAO Annex 10 Vol II 5.2.1.5.8

Phrase	*Meaning*	
ACKNOWLEDGE	'Let me know that you have received and understood this message.'	
AFFIRM	'Yes.'	
APPROVED	'Permission for proposed action granted.'	
BREAK	'I hereby indicate the separation between portions of the message.'	
BREAK BREAK	'I hereby indicate the separation between messages transmitted to different aircraft in a very busy environment.'	[BREAK] GM foreseen
CANCEL	'Annul the previously transmitted clearance.'	
CHECK	'Examine a system or procedure.'	[CHECK] GM foreseen
CLEARED	'Authorized to proceed under the conditions specified.'	
CONFIRM	'I request verification of: (*clearance, instruction, action, information*).'	
CONTACT	'Establish communications with...'	
CORRECT	'True' or 'Accurate'.	
CORRECTION	'An error has been made in this transmission (*or* message indicated). The correct version is...'	
DISREGARD	'Ignore.'	
HOW DO YOU READ	'What is the readability of my trans-mission?' *see* SERA.14070 (c)	
I SAY AGAIN	'I repeat for clarity or emphasis.'	
MAINTAIN	'Continue in accordance with the condition(s) specified' or in its literal sense.	[MAINTAIN] GM foreseen

MONITOR	'Listen out on (frequency).'		
NEGATIVE	'No' *or* 'Permission not granted' *or* 'That is not correct' *or* 'Not capable'.		
OVER	'My transmission is ended, and I expect a response from you.'		[OVER] GM foreseen
OUT	'This exchange of transmissions is ended and no response is expected.'		[OUT] GM foreseen
READ BACK	'Repeat all, or the specified part, of this message back to me exactly as received.'		
RECLEARED	'A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.'		
REPORT	'Pass me the following information...'		
REQUEST	'I should like to know...' *or* 'I wish to obtain...'		
ROGER	'I have received all of your last transmission.'		[ROGER] GM foreseen
SAY AGAIN	'Repeat all, or the following part, of your last transmission.'		
SPEAK SLOWER	'Reduce your rate of speech.'		
STANDBY	'Wait and I will call you.'		[STANDBY] GM foreseen
UNABLE	'I cannot comply with your request, instruction, or clearance.'		[UNABLE] GM foreseen
WILCO	*(Abbreviation for 'will comply'.)* 'I understand your message and will comply with it.'		
WORDS TWICE	a) *As a request:* 'Communication is difficult. Please send every word, or group of words, twice.' b) *As information:* 'Since communication is difficult, every word, or group of words, in this message will be sent twice.'		
SERA.14050 Radiotelephony call signs for aircraft (a) Full call signs An aircraft radiotelephony call sign shall be one of the following types:			ICAO Annex 10 Vol II 5.2.1.7.2.1.1 GM foreseen

Type a) — the characters corresponding to the registration marking of the aircraft; or Type b) — the telephony designator of the aircraft operator, followed by the last four characters of the registration marking of the aircraft; Type c) — the telephony designator of the aircraft operator, followed by the flight identification.	
(b) Abbreviated call signs The aircraft radiotelephony call signs shown in (a), with the exception of Type c), may be abbreviated in the circumstances prescribed in SERA.14065 (d) (1). Abbreviated call signs shall be in the following form: Type a) — the first character of the registration and at least the last two characters of the call sign; Type b) — the telephony designator of the aircraft operator, followed by at least the last two characters of the call sign; Type c) — no abbreviated form.	ICAO Annex 10 Vol II 5.2.1.7.2.2 ICAO Annex 10 Vol II 5.2.1.7.2.2.1 GM foreseen
SERA.14055 Radiotelephony procedures (a) An aircraft shall not change the type of its radiotelephony call sign during flight, except temporarily on the instruction of an air traffic control unit in the interests of safety. Except for reasons of safety no transmission shall be directed to an aircraft during take-off, during the last part of the final approach or during the landing roll. (b) Establishment of radiotelephony communications (1) Full radiotelephony call signs shall always be used when establishing communication. The calling procedure of an aircraft establishing communication shall be in accordance with SERA.14050 (a). (2) The reply to the above calls shall use the call sign of the station calling, followed by the call sign of the station answering, which shall be considered an invitation to proceed with transmission by the station calling. (3) Communications shall commence with a call and a reply when it is desired to establish contact, except that, when it is certain that the station called will receive the call, the calling station may transmit the message, without waiting for a reply from the station called. **SERA.14060 Transfer of VHF communications** (a) An aircraft shall be advised by the appropriate ATS unit to transfer from one radio frequency to another in accordance with agreed procedures. In the absence of such advice, the aircraft shall notify	ICAO Annex 10 Vol II 5.2.1.7.3 GM foreseen ICAO Annex 10 Vol II 5.2.1.7.3.1 ICAO Annex 10 Vol II 5.2.1.7.3.1.1 ICAO Annex 10 Vol II 5.2.1.7.3.2 ICAO Annex 10 Vol II 5.2.1.7.3.2.1 ICAO Annex 10 Vol II 5.2.1.7.3.2.3 ICAO Annex 10 Vol II 5.2.1.7.3.2.5 ICAO Annex 10 Vol II 5.2.2.6 ICAO Annex 10 Vol II 5.2.2.6.1

the ATS unit before such a transfer takes place. (b) When establishing initial contact on, or when leaving, a VHF frequency, an aircraft shall transmit such information as may be prescribed by the ANSP responsible for the provisions of services.	ICAO Annex 10 Vol II 5.2.2.6.2
SERA.14065 Radiotelephony procedures for air-ground voice communication channel changeover (a) Unless otherwise prescribed by the ANSP responsible for the provisions of services, the initial call to an ATC unit after a change of air-ground voice communication channel shall contain the following elements: (1) designation of the ATS unit being called; (2) call sign and, for aircraft in the heavy wake turbulence category, the word 'Heavy', or the word 'Super' if that aircraft has been so identified by the competent authority; (3) level, including passing and cleared levels if not maintaining the cleared level; (4) speed, if assigned by ATC; and (5) additional elements, as required by the ANSP responsible for the provisions of services. (b) Pilots shall provide level information to the nearest full 30 m or 100 ft as indicated on the pilot's altimeter.	PANS-ATM 4.11.3 amended ICAO State letter of 8 July 2008 PANS-OPS-Vol I-Part III, Section 3, Ch 1, 1.2
(c) Initial call to aerodrome control tower For aircraft being provided with aerodrome control service, the initial call shall contain: (1) designation of the ATS unit being called; (2) call sign and, for aircraft in the heavy wake turbulence category, the word 'Heavy', or the word 'Super' if that aircraft has been so identified by the competent authority; (3) position; and (4) additional elements, as required by the appropriate ANSP.	PANS-ATM 7.3 ICAO State letter of 8 July 2008

(d) Subsequent radiotelephony communications	
(1) Abbreviated radiotelephony call signs, as prescribed in SERA.14050 (b), shall be used only after satisfactory communication has been established and provided that no confusion is likely to arise. An aircraft shall use its abbreviated call sign only after it has been addressed in this manner by the aeronautical station.	ICAO Annex 10 Vol II 5.2.1.7.3.3 ICAO Annex 10 Vol II 5.2.1.7.3.3.1
(2) After contact has been established, continuous two-way communication shall be permitted without further identification or call until termination of the contact.	ICAO Annex 10 Vol II 5.2.1.7.3.3.2
(3) In order to avoid any possible confusion, when issuing ATC clearances and reading back such clearances, controllers and pilots shall always add the call sign of the aircraft to which the clearance applies.	ICAO Annex 10 Vol II 5.2.1.7.3.3.3
SERA.14070 Test procedures	ICAO Annex 10 Vol II 5.2.1.8
(a) The form of test transmissions shall be as follows:	
(1) the identification of the station being called;	ICAO Annex 10 Vol II 5.2.1.8.1
(2) the aircraft identification;	
(3) the words 'RADIO CHECK';	
(4) the frequency being used.	
(b) The reply to a test transmission shall be as follows:	ICAO Annex 10 Vol II 5.2.1.8.2
(1) the identification of the aircraft;	
(2) the identification of the aeronautical station replying;	
(3) information regarding the readability of the aircraft transmission.	
(c) When the tests are made, the following readability scale should be used:	
Readability Scale	ICAO Annex 10 Vol II 5.2.1.8.4
1 Unreadable	
2 Readable now and then	
3 Readable but with difficulty	
4 Readable	
5 Perfectly readable	

SERA.14075 Exchange of communications (a) Communications shall be concise and unambiguous, using standard phraseology whenever available. (1) When transmitted by an aircraft, the acknowledgement of receipt of a message shall comprise the call sign of that aircraft. (2) When acknowledgement of receipt is transmitted by an ATS unit to an aircraft, it shall comprise the call sign of the aircraft, followed if considered necessary by the call sign of the ATS unit;	ICAO Annex 10 Vol II 5.2.1.9 ICAO Annex 10 Vol II 5.2.1.9.1 ICAO Annex 10 Vol II 5.2.1.9.2.1 ICAO Annex 10 Vol II 5.2.1.9.2.3
(b) End of conversation. A radiotelephone conversation shall be terminated by the receiving ATS unit or aircraft using its own call sign. (c) Corrections and repetitions (1) When an error has been made in transmission, the word 'CORRECTION' shall be spoken, the last correct group or phrase repeated, and then the correct version transmitted. (2) If a correction can best be made by repeating the entire message, the phrase 'CORRECTION, I SAY AGAIN' shall be used before the message is transmitted a second time. (3) If the receiving station is in doubt as to the correctness of the message received, a repetition either in full or in part shall be requested. (4) If repetition of an entire message is required, the words 'SAY AGAIN' shall be spoken. If repetition of a portion of a message is required, the phrase: 'SAY AGAIN ALL BEFORE... (first word satisfactorily received)' shall be used; or 'SAY AGAIN...(word before missing portion) TO...(word after missing portion)'; or 'SAY AGAIN ALL AFTER...(last word satisfactorily received)'. (d) If, in checking the correctness of a readback, incorrect items are noticed, the words 'NEGATIVE I SAY AGAIN' shall be transmitted at the conclusion of the readback followed by the correct version of the items concerned.	ICAO Annex 10 Vol II 5.2.1.9.3 ICAO Annex 10 Vol II 5.2.1.9.4 ICAO Annex 10 Vol II 5.2.1.9.4.1 ICAO Annex 10 Vol II 5.2.1.9.4.2 ICAO Annex 10 Vol II 5.2.1.9.4.4 ICAO Annex 10 Vol II 5.2.1.9.4.5 GM foreseen ICAO Annex 10 Vol II 5.2.1.9.4.7

SERA.14080 Communications watch/Hours of service	ICAO Annex 10 Vol II 5.2.2.1 ICAO Annex 10 Vol II 5.2.2.1.1
(a) During flight, aircraft shall maintain watch as required by the competent Authority and shall not cease watch, except for reasons of safety, without informing the ATS unit concerned.	
(1) Aircraft on long over-water flights, or on flights over designated areas over which the carriage of an emergency locator transmitter (ELT) is required, shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.	ICAO Annex 10 Vol II 5.2.2.1.1.1 GM foreseen
(2) Aircraft shall continuously guard the VHF emergency frequency 121.5 MHz in areas or over routes where the possibility of interception of aircraft or other hazardous situations exist, and a requirement has been established by the competent authority.	ICAO Annex 10 Vol II 5.2.2.1.1.2
(b) Aeronautical stations shall maintain a continuous listening watch on VHF emergency channel 121.5 MHz during the hours of service of the units at which it is installed.	ICAO Annex 10 Vol II 5.2.2.1.3
(c) When it is necessary for an aircraft or ATS unit to suspend operation for any reason, it shall, if possible, so inform other stations concerned, giving the time at which it is expected that operation will be resumed. When operation is resumed, other stations concerned shall be so informed. When it is necessary to suspend operation beyond the time specified in the original notice, a revised time of resumption of operation shall, if possible, be transmitted at or near the time first specified.	ICAO Annex 10 Vol II 5.2.2.1.4 ICAO Annex 10 Vol II 5.2.2.1.4.1
SERA.14085 Voice communications failure	ICAO Annex 10 Vol II 5.2.2.7 ICAO Annex 10 Vol II 5.2.2.7.1 ICAO Annex 10 Vol II 5.2.2.7.1.1
(a) Air-ground	
(1) When an aircraft fails to establish contact with the appropriate ATS unit on the designated channel, it shall attempt to establish contact on the previous channel used and, if not successful, on another channel appropriate to the route. If these attempts fail, the aircraft shall attempt to establish communication with the appropriate ATS unit, other ATS unit or other aircraft using all available means and advise the ATS unit that contact on the assigned channel could not be established. In addition, an aircraft operating within a network shall monitor the appropriate VHF channel for calls from nearby aircraft.	*This paragraph must be reconsidered when the RCF procedures become available,* ***but it is kept in the NPA for better understanding and visibility***
(2) If the attempts specified under (a) (1) fail, the aircraft shall transmit its message twice on the designated channel(s), preceded by the phrase 'TRANSMITTING BLIND' and, if necessary, include the addressee(s) for which the message is intended.	ICAO Annex 10 Vol II 5.2.2.7.1.2
(3) Receiver failure	

(i) When an aircraft is unable to establish communication due to receiver failure, it shall transmit reports at the scheduled times, or positions, on the channel in use, preceded by the phrase 'TRANSMITTING BLIND DUE TO RECEIVER FAILURE'. The aircraft shall transmit the intended message, following this by a complete repetition. During this procedure, the aircraft shall also advise the time of its next intended transmission.	ICAO Annex 10 Vol II 5.2.2.7.1.3 ICAO Annex 10 Vol II 5.2.2.7.1.3.1
(ii) An aircraft which is provided with air traffic control or advisory service shall, in addition to complying with (a) (3) (i), transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight of the aircraft.	ICAO Annex 10 Vol II 5.2.2.7.1.3.2
(iii) When an aircraft is unable to establish communication due to airborne equipment failure it shall, when so equipped, select the appropriate SSR code to indicate radio failure.	ICAO Annex 10 Vol II 5.2.2.7.1.3.3
(b) Ground-to-air	
(1) When an ATS unit has been unable to establish contact with an aircraft after calls on the frequencies on which the aircraft is believed to be listening, it shall:	ICAO Annex 10 Vol II 5.2.2.7.2
(i) request other ATS units to render assistance by calling the aircraft and relaying traffic, if necessary;	ICAO Annex 10 Vol II 5.2.2.7.2.1
(ii) request aircraft on the route to attempt to establish communication with the aircraft and relay traffic, if necessary.	
(2) The provisions of (b) (1) shall also be applied:	ICAO Annex 10 Vol II 5.2.2.7.2.2
(i) on request of the air traffic services unit concerned;	
(ii) when an expected communication from an aircraft has not been received within a time period such that the occurrence of a communication failure is suspected.	

SERA.14090 Specific communications procedures	PANS-ATM 12.2.6
(a) Movement of vehicles	
Phraseologies for the movement of vehicles, other than tow-tractors, on the manoeuvring area shall be the same as those used for the movement of aircraft, with the exception of taxi instructions, in which case the word 'PROCEED' shall be substituted for the word 'TAXI' when communicating with vehicles.	
(b) Air traffic advisory service	PANS-ATM 9.1.4 GM foreseen
Air traffic advisory service does not deliver 'clearances' but only 'advisory information' and it shall use the word 'advise' or 'suggest' when a course of action is proposed to an aircraft.	
(c) Indication of heavy wake turbulence category	PANS-ATM 9.1.4.1.3
For aircraft in the heavy wake turbulence category the word 'Heavy' shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.	PANS-ATM 4.9.2
For specific aircraft in the heavy wake turbulence category, as identified by the competent authority, the word 'Super' shall be included immediately after the aircraft call sign in the initial radiotelephony contact between such aircraft and ATS units.	ICAO State letter of 8 July 2008
(d) Procedures related to weather deviation	
When the pilot initiates communications with ATC, a rapid response may be obtained by stating 'WEATHER DEVIATION REQUIRED' to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot shall initiate the communications using the urgency call 'PAN PAN' (preferably spoken three times).	PANS-ATM 15.2.3 PANS-ATM 15.2.3.1.1

SERA.14095 Distress and urgency radiotelephony communication procedures	ICAO Annex 10 Vol II 5.3
(a) General	
(1) Distress and urgency traffic shall comprise all radiotelephony messages relative to the distress and urgency conditions respectively. Distress and urgency conditions are defined as:	ICAO Annex 10 Vol II 5.3.1.1
(i) *Distress:* a condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.	
(ii) *Urgency:* a condition concerning the safety of an aircraft or other vehicle, or of some person on board or within sight, but which does not require immediate assistance.	
(2) The radiotelephony distress signal MAYDAY and the radiotelephony urgency signal PAN PAN shall be used at the commencement of the first distress and urgency communication respectively. At the commencement of any subsequent communication in distress and urgency traffic, it shall be permissible to use the radiotelephony distress and urgency signals.	ICAO Annex 10 Vol II 5.3.1.2 ICAO Annex 10 Vol II 5.3.1.2.1
(3) The originator of messages addressed to an aircraft in distress or urgency condition shall restrict to the minimum the number and volume and content of such messages as required by the condition.	ICAO Annex 10 Vol II 5.3.1.3
(4) If no acknowledgement of the distress or urgency message is made by the ATS unit addressed by the aircraft, other station shall render assistance, as prescribed in (b) (2) and (c) (2) respectively.	ICAO Annex 10 Vol II 5.3.1.4
(5) Distress and urgency traffic shall normally be maintained on the frequency on which such traffic was initiated until it is considered that better assistance can be provided by transferring that traffic to another frequency.	ICAO Annex 10 Vol II 5.3.1.5
(6) In cases of distress and urgency communications, in general, the transmissions by radiotelephony shall be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.	ICAO Annex 10 Vol II 5.3.1.6
(b) Radiotelephony distress communications	ICAO Annex 10 Vol II 5.3.2
(1) Action by the aircraft in distress	ICAO Annex 10 Vol II 5.3.2.1
In addition to being preceded by the radiotelephony distress signal MAYDAY (*see* (a) (2)), preferably spoken three times, the distress message to be sent by an aircraft in distress shall:	ICAO Annex 10 Vol II 5.3.2.1.1
(i) be on the air-ground frequency in use at the time;	
(ii) consist of as many as possible of the following elements spoken distinctly and, if	

possible, in the following order: A) name of the ATS unit addressed (time and circumstances permitting); B) the identification of the aircraft; C) the nature of the distress condition; D) intention of the pilot-in-command; E) present position, level and heading.	
(2) Action by the ATS unit addressed or first station acknowledging the distress message The ATS unit addressed by aircraft in distress, or first station acknowledging the distress message, shall: (i) immediately acknowledge the distress message; (ii) take control of the communications or specifically and clearly transfer that responsibility, advising the aircraft if a transfer is made; (iii) take immediate action to ensure that all necessary information is made available, as soon as possible, to: A) the ATS unit concerned; B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements; (iv) warn other ATS units, as appropriate, in order to prevent the transfer of traffic to the frequency of the distress communication.	ICAO Annex 10 Vol II 5.3.2.2 ICAO Annex 10 Vol II 5.3.2.2.1
(3) Imposition of silence (i) The aircraft in distress, or the ATS unit in control of distress traffic, shall be permitted to impose silence, either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It shall address these instructions 'to all stations', or to one station only, according to circumstances. In either case, it shall use: (A) STOP TRANSMITTING; (B) the radiotelephony distress signal MAYDAY. (ii) The use of the signals specified in (b) (3) (i) shall be reserved for the aircraft in	ICAO Annex 10 Vol II 5.3.2.3 ICAO Annex 10 Vol II 5.3.2.3.1 ICAO Annex 10 Vol II 5.3.2.3.2

distress and for the ATS unit controlling the distress traffic.	
(4) Action by all other ATS units/aircraft	ICAO Annex 10 Vol II 5.3.2.4
(i) The distress communications have absolute priority over all other communications, and an ATS units/aircraft aware of them shall not transmit on the frequency concerned, unless:	ICAO Annex 10 Vol II 5.3.2.4.1
(A) the distress is cancelled or the distress traffic is terminated;	
(B) all distress traffic has been transferred to other frequencies;	
(C) the ATS unit controlling communications gives permission;	
(D) it has itself to render assistance.	
(ii) Any ATS unit/aircraft which has knowledge of distress traffic, and which cannot itself assist the aircraft in distress, shall nevertheless continue listening to such traffic until it is evident that assistance is being provided.	ICAO Annex 10 Vol II 5.3.2.4.2
(5) Termination of distress communications and of silence	ICAO Annex 10 Vol II 5.3.2.5
(i) When an aircraft is no longer in distress, it shall transmit a message cancelling the distress condition.	
(ii) When the ATS unit which has controlled the distress communication traffic becomes aware that the distress condition is ended, it shall take immediate action to ensure that this information is made available, as soon as possible, to:	ICAO Annex 10 Vol II 5.3.2.5.1 ICAO Annex 10 Vol II 5.3.2.5.2
(A) the ATS unit concerned;	
(B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements.	
(iii) The distress communication and silence conditions shall be terminated by transmitting a message, including the words 'DISTRESS TRAFFIC ENDED', on the frequency or frequencies being used for the distress traffic. This message shall be originated only by the ATS unit controlling the communications when, after the reception of the message prescribed in (b) (5) (i), it is authorized to do so by the competent authority.	ICAO Annex 10 Vol II 5.3.2.5.3

(c) Radiotelephony urgency communications (1) Action by the aircraft reporting an urgency condition except as indicated in (c) (4) In addition to being preceded by the radiotelephony urgency signal PAN PAN (*see* (a) (2)), preferably spoken three times and each word of the group pronounced as the French word 'panne', the urgency message to be sent by an aircraft reporting an urgency condition shall: (i) be on the air-ground frequency in use at the time; (ii) consist of as many as required of the following elements spoken distinctly and, if possible, in the following order: (A) the name of the ATS unit addressed; (B) the identification of the aircraft; (C) the nature of the urgency condition; (D) the intention of the pilot-in-command; (E) present position, level; (F) any other useful information.	ICAO Annex 10 Vol II 5.3.3 ICAO Annex 10 Vol II 5.3.3.1 ICAO Annex 10 Vol II 5.3.3.1.1 [GM foreseen]
(2) Action by the ATS unit addressed or first station acknowledging the urgency message The ATS unit addressed by an aircraft reporting an urgency condition, or the first station acknowledging the urgency message, shall: (i) acknowledge the urgency message; (ii) take immediate action to ensure that all necessary information is made available, as soon as possible, to: (A) the ATS unit concerned; (B) the aircraft operator concerned, or its representative, in accordance with pre-established arrangements; (iii) if necessary, exercise control of communications.	ICAO Annex 10 Vol II 5.3.3.2 ICAO Annex 10 Vol II 5.3.3.2.1

(3) Action by all other ATS units/aircraft	ICAO Annex 10 Vol II 5.3.3.3
The urgency communications have priority over all other communications, except distress, and all ATS units/aircraft shall take care not to interfere with the transmission of urgency traffic.	ICAO Annex 10 Vol II 5.3.3.3.1
(4) Action by an aircraft used for medical transports	
(i) The use of the signal described in (c) (4) (ii) shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.	ICAO Annex 10 Vol II 5.3.3.4 ICAO Annex 10 Vol II 5.3.3.4.1
(ii) For the purpose of announcing and identifying aircraft used for medical transports, a transmission of the radiotelephony urgency signal PAN PAN, preferably spoken three times, and each word of the group pronounced as the French word 'panne', shall be followed by the radiotelephony signal for medical transports MAY-DEE-CAL, pronounced as in the French 'médical'. The use of the signals described above indicates that the message which follows concerns a protected medical transport.	ICAO Annex 10 Vol II 5.3.3.4.2
The message shall convey the following data:	
(A) the call sign or other recognized means of identification of the medical transports;	
(B) position of the medical transports;	
(C) number and type of medical transports;	
(D) intended route;	
(E) estimated time en route and of departure and arrival, as appropriate; and	
(F) any other information such as flight altitude, radio frequencies guarded, languages used, and secondary surveillance radar modes and codes.	
(5) Action by the ATS units addressed or by other stations receiving a medical transports message	ICAO Annex 10 Vol II 5.3.3.5
The provisions of (c) (2) and (c) (3) shall apply as appropriate to ATS units receiving a medical transports message.	ICAO Annex 10 Vol II 5.3.3.5.1

6.2. Appendix II — Extract of EUROCONTROL safety impact assessment

6.2.1. Safety impact assessment process

6.2.1.1 Introduction

This safety impact assessment is relative to the European transposition of ICAO procedures for Air Navigation Services relative to Air Traffic Management which are of a 'rules-of-the-air' nature into the single European sky legislative framework. Such transposition (SERA Part C) shall be developed considering principally ICAO Doc 4444 (PANS-ATM), ICAO Doc 7030 (EUR Regional Supplementary Procedures) and specific ICAO procedures relative to surveillance (ICAO Doc 8168 PANS-OPS Vol I) and to voice communication (ICAO Annex 10 Vol II and Annex 11.

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 safety impact assessment that Air Operation in accordance with SERA Part A will be acceptably safe.

— for the second step (SERA Part B) addressing the European transposition of ICAO Annex 11 transposition and some elements of ICAO Annex 3, it has been shown during the safety impact assessment that SERA Part B air traffic services requirements which are of a 'rules-of-the-air' nature ensure a safe air traffic flow within the Union.

To show that SERA Part C provisions are acceptably safe, it should be shown that Procedures for Air Navigation Services relative to Air Traffic Management specified in SERA Part C complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union'. To support such claim, it is essential to show that these Procedures which are of a 'rules-of-the-air' nature are complete and correct.

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

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

— Safety Specification: A requirement to be taken into account during the development phase of the Implementing Rule.

— Safety issue: safety issues are identifying any problem encountered during the safety impact assessment of the proposed Implementing Rule which must be resolved before the claim can be considered to be valid.

— Safety Assumption: Assumptions usually related to matters outside the scope of the Implementing Rule, but which are essential to the completeness and/or correctness of this safety assessment.

6.2.1.2 The safety argument

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).

The safety argument for SERA Part C is based on a top-level claim to be satisfied which is that **SERA Part C Procedures for Air Navigation services relative to Air Traffic Management and which are of the 'rules-of-the-air' nature complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union**. Furthermore, it is recalled that 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 C provisions have been defined/specified to ensure safe air operations and air traffic flow;
2. SERA Part C provisions have been developed/designed to ensure safe air operation and air traffic flow;
3. SERA Part C provision will be implemented completely and correctly;
4. Transition from current state to SERA Part C provision will ensure safe air operation and air traffic flow; and
5. Operational use of SERA Part C provision will ensure safe air operation and air traffic flow.

6.2.2. Summary result for the definition/specification phase

Different safety activities relative to the specification phase were carried out to support the argument: 'SERA Part C provisions have been defined/specified to ensure safe air operation and air traffic flow'. The outcome of these safety activities are documented in paragraphs 6.2.2.1 to 6.2.2.5 below.

6.2.2.1 Description of the operational environment

SERA Part C 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 C shall consider the current EU operational environment relative to the airspace classification, separation requirements and the different flight rules. The operational environment shall also consider any potential change associated to FAB implementation and SESAR development.

SERA Part C requirements shall apply to all aircraft:

— operating into, within or out of the European Union;

— bearing the nationality and registration marks of a Member State of the European Union, and operating in any airspace to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.

6.2.2.2 Compliance of EU Member States with ICAO Doc and Annexes relevant for SERA Part C and their operational service experience

EU Member States have notified differences against the relevant ICAO provisions for SERA Part C. These notified differences which are relative to the collective actions between airspace user and air traffic service provider ('rules-of-the-air' nature) were assessed and the outcome was taken into account during the development of SERA Part C.

Concerning the operational service experience (incident/accident) relative to ATM procedures for ANS of a 'rules-of-the-air' nature, it should be noted that in-service experience reports (e.g. incident occurrences) have indicated that following ATM procedures are safety critical:

— Applying correctly procedures for expressing vertical position of the aircraft: Indeed, failure to set the appropriate pressure setting can result in deviation from the cleared altitude or flight level leading to level bust, loss of separation from other traffic or loss of separation from terrain/obstacles.

— Applying correctly controller procedure in case of an ongoing RA to prevent a controller instruction conflicting with the ACAS instruction. Indeed, once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the RA. The controller shall resume responsibility for providing separation for all the affected aircraft when:

  - the controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or
  - the controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

— Applying correctly voice communication procedures and use of standard phraseology because not respecting them could lead to misunderstanding and breakdown of the communication process which is a frequent causal or contributory factor in aircraft accidents and incidents.

6.2.2.3 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.

6.2.2.4 User requirements

(a) SERA Part C 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 across the entire EU which should improve efficiency and safety.

(b) SERA Part C is applicable to Air Traffic Service Providers (ATSP) and more specifically to controllers and/or Flight Information Service Officers (FISO) who deliver 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 rules of the air leading for example to less controller intervention.

6.2.2.5 SERA Part C specification

The specification of SERA Part C, which will be the driver to develop/design properly SERA Part C provisions, is supported by:

— the current operational environment associated to Air Traffic Services Procedures 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 Doc and Annexes 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 (see paragraphs 6.2.2.1 to 6.2.2.4) that SERA Part C will be developed properly if the following specifications are respected:

SERA Spec1	SERA Part C shall be limited to Air Traffic Management procedures for Air Navigation Services relative to 'rule-of-the-air' aspects.
SERA Spec2	SERA Part C Air Traffic Management procedures shall complement whenever necessary the existing SERA Part A/B provision.
SERA Spec3	SERA Part C provisions shall be designed considering ICAO provisions, EU States' operational service experience, EU Member States notified differences, European Union operational environment including FAB, airspace classification, separation requirements and flight rules.
SERA Spec4	SERA Part C provisions shall minimise the risk of different interpretation.
SERA Spec5	A rule exemption to a SERA Part C provision shall be allowed only on the basis of considerations of its assessed relevance.
SERA Spec6	Alternative procedure (i.e.: flexibility) to a SERA Part C provisions shall only be allowed if duly justified.
SERA Spec7	Any SERA Part C provision addressing risks inherent to aviation (e.g. CFIT, Mid Air Collision, Runway Collision, Taxiway collision, Runway excursion, Wake-Induced Accident, etc.) is considered as a safety requirement.

6.2.3. Summary result for the development phase

Different safety assurance activities relative to the development (design) phase were carried out to support the following argument: 'SERA Part C provisions have been

developed/designed to ensure safe air operation and air traffic flow'. The basic intent is to develop SERA Part C provisions in accordance with the above-described SERA Specifications (SERA Spec 1 to 7).

6.2.3.1 Development of SERA Part C provisions

SERA Part C procedures are safety-related because their prime objective is to address risks inherent to aviation (e.g. mid air Collision, CFIT, runway collision, wake avoidance, etc.). This means that SERA Part C Procedures shall be considered as safety requirements (SERA Spec7).

For that purpose, the development 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 provision to form SERA Part C, it is not necessary to consider such a 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 ICAO provision (eventually including minor modification) is considered sufficient for the development phase. The minor modifications applied to the ICAO provision will be validated through engineering/operational judgement (e.g. during ALGAR meeting).

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

6.2.3.2 SERA Part C completeness

The completeness aspect of SERA Part C is essential from a safety point of view and is mainly driven by SERA Spec1 which states that 'SERA Part C shall be limited to Air Traffic Management procedures for Air Navigation Services relative to Rule of the Air aspects' and by SERA Spec2 which states that 'SERA Part C Air Traffic Management procedures shall complement whenever necessary the existing SERA Part A/B provision'.

ICAO provisions[24] were used as the starting point and a screening review of the complete documents was done to extract all sections/paragraphs associated to collective action between Air Traffic Services and airspace users and/or ground personnel when applicable. The result of this screening activity led to identifying those elements which constitute the main part of SERA Part C provisions.

The review has revealed that two requirements relative to the use of designators in communication were missing in SERA Part C. These requirements are those specified in Annex 11, Appendix 2, paragraph 4 and Appendix 3, paragraph 7.

[24] ICAO Doc 4444 (PANS-ATM), ICAO DOC 7030 (EUR Regional Supplementary procedures) and specific ICAO procedures relative to surveillance (ICAO Doc 8168 PANS-OPS Vol I) and to voice communication (ICAO Annex 10 Vol II and Annex 11.

Issue Completeness 01:	SERA Part C provision shall include the following requirements:

— Use of designators for the identification of significant point in communication	ICAO Annex 11, Appendix 2, paragraph 4
— Use of designators for the identification of SID/STAR and approaches in communication	ICAO Annex 11 Appendix 3 paragraph 7

For the rest of SERA Part C, it has been shown that the provisions were complete thanks to several reviews which have been carried out during ALGAR meetings to check the rule completeness. Regarding the trustworthiness of this group, it should be emphasised that ALGAR drafting group was composed of different participants from the Agency, the European Commission, ICAO, experts representing National regulators, ATCOs and airline pilots and EUROCONTROL with an excellent knowledge of aviation and ICAO provisions.

In addition, the EUROCONTROL ATM Procedure Development Sub-Group (APDSG) expertise was used for collecting views and opinions in the transposition of ICAO provisions into SERA Part C.

6.2.3.3 SERA Part C correctness

The correctness aspect of SERA Part C is essential from a safety point of view and is mainly driven by SERA Spec3 which states that 'SERA Part C provisions shall be designed considering ICAO provisions, EU State's operational service experience, EU member States notified differences, European Union operational environment including FAB, airspace classification, separation requirements and flight rules'. Furthermore, SERA Spec 4 is also essential when developing SERA Part C provisions. Indeed, SERA safety-related provisions should be developed to ensure that the probability to misinterpret the provisions by the different actors (e.g. controllers, pilots) is as low as practicable and such provision should not be prone to interpretation.

The correctness analysis was carried out and for each SERA Part C procedure it has been assessed if the associated requirement is correct from a safety point considering SERA Spec3 and SERA Spec4.

For requirements where correctness was not shown, issues were identified. 19 correctness issues were found which need to be addressed to satisfy the correctness criteria. Table 4 of paragraph 6.2.8 lists the different correctness issues (Issue Correctness) identified during the development of SERA Part C and specifies if issues are still applicable when considering the proposed Amendments provided in section 3 of this NPA (Issue Closed or still Open).

6.2.3.4 SERA Part C robustness

It has been determined that SERA Spec 5 (Rule exemption) has been addressed satisfactorily. Indeed, no rule exemption to SERA Part C provisions is authorised. This aspect has to be considered during the operation phase.

For SERA Spec 6 (Provision flexibility), it has been reviewed that any flexibility associated to a SERA Part C 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 retained flexibilities were appropriate to maintain an efficient level of performance for air operations.

Given the status of ICAO PANS (PANS-ATM and PANS-OPS) which are by nature 'flexible' provisions compared to ICAO Annexes, flexibilities are not introduced per se during the SERA Part C transposition of PANS procedures but they are maintained. However, it has been decided to review these flexibilities even if they are relative to an ICAO PANS transposition to confirm that such flexibility does not impair the 'high' and 'uniform' levels of safety. Two issues relative to flexibility have been identified (Issue Flexibility 01 and Issue Flexibility 02) and are listed in Table 4 of paragraph 6.2.8 with their status (Open/Closed).

6.2.3.5 Failure in applying SERA Part C

For each SERA Part C procedure the following elements have been determined:

— generated hazards;

— identification of the hazard cause; and

— consequence of the occurrence of the hazard.

The common hazard is associated to the 'failure to respect the procedure' and causes are either the controller or the pilot.

Because ATM procedures — which are of a 'rules-of-the-air' nature — are high level safety-related procedures, failure to adhere to these SERA requirements will significantly reduce the safety of operations and the consequence of the occurrence of the generated hazard could be e.g. mid air collision, CFIT, runway collision, wake-induced accident.

In addition, considering the operational experience, it has been identified that the following provisions are safety-critical (see also paragraph 6.2.2.2) when such procedures fail:

— Applying correctly procedures for expressing vertical position of the aircraft: Correct altimeter setting below the transition altitude is essential to prevent loss of separation from terrain;

— Applying correctly controller procedure in case of an ongoing RA to prevent a controller instruction conflicting with the ACAS instruction;

— Applying correctly voice communication procedures and using standard phraseology because not respecting them could lead to misunderstanding and breakdown of the communication process which is a frequent causal or contributory factor in aircraft accidents and incidents.

Adherence to SERA Part C provisions is, therefore, a key element which is associated to Human Factor/Performance aspects.

Because it is not within the scope of SERA Part C to address the training and the qualification aspect associated to the different actors, these aspects have been captured through three safety assumptions (See Safety Assumption 01, 02 and 03) associated to the different actors in order to reinforce the importance of adhering properly to the relevant ATM procedures relative to 'Rule of the Air'.

Safety Assumption 01	Pilots are properly trained and are fully knowledgeable on the relevant SERA Part C provisions, both existing and as amended and, in particular, with regard to the correct application of: — procedures for expressing the vertical position of the aircraft; — voice communication procedures and standard phraseology; and — procedures in case of an ongoing ACAS Resolution Advisory.

Safety Assumption 02	Controllers are properly trained and are fully knowledgeable on the relevant SERA Part C provisions, both existing and as amended and, in particular, with regard to the correct application of: — procedures for expressing the vertical position of the aircraft; — procedures in case of an ongoing ACAS Resolution Advisory; and — voice communication procedures and standard phraseology.

Safety Assumption 03	Ground personnel are properly trained and are fully knowledgeable of the relevant SERA Part C provisions, both existing and as amended.

6.2.3.6 Capability of SERA Part C to be safely implemented

It is recalled that all SERA Part C requirements are considered to be safety requirement (SERA Spec7) because the rule objective is to mitigate pre-existing hazard/risk inherent to aviation.

For ICAO provisions not modified by SERA Part C, the operational experience is used to show that SERA Part C could be implemented safely by verifying that there are no safety-related occurrences (incident/accident) relative to the current application of these ATS requirements. This is the case for most of SERA Part C, but several aspects (detailed in paragraph 6.2.2.2) should be carefully analysed during the transposition. Indeed, current operational experience relative to following aspects (procedures for expressing vertical position of the aircraft, procedures in case of an ongoing RA, voice communication procedures and use of standard phraseology) shows that strict adherence to promulgated procedures is essential for safe operations.

However, because all of the SERA Part C provisions are human procedures and they 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 SERA Part C provision satisfaction shall be supported by evidence that the requirements are, at least, capable of being satisfied by the pilot and the controller.

This point is covered by Safety Assumptions 1, 2 and 3 (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 regulation is either national or European. Examples may be considered like:

— For pilots (Safety assumption 1): The aircraft operator should comply with its national (for general aviation) or Union rules (for air transport e.g. EU-OPS[25]) and be approved by the competent authority.

— For controllers (Safety Assumption 2): The controller providing air traffic control service, flight information service and alerting service should comply with the ATCO Regulation[26].

— For ground personnel (Safety Assumption 3): The ground personnel on the movement area (e.g. vehicle drivers, maintenance personnel) should comply with their national rules and/or with EASA rules.

6.2.3.7 Consistency of SERA Part C provision with the IR mandate

It has been shown through the correctness and completeness activities that SERA Part C provisions are consistent with the IR mandate objective because it addresses only Air Traffic Management procedures for Air Navigation Services relative to Rule Of the Air to be applied in the EU Member State airspace and complementing properly SERA Part A and B provisions.

6.2.4. Summary result for the implementation phase

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

Due to the specific nature of SERA, the refinement stage between the development phase and the implementation phase does not exist. It means that SERA Part C provisions shall be directly applied in the EU Member States without any adaptation/modification.

However, in accordance with SERA Spec6, some rule flexibilities are kept, when considered necessary to maintain an efficient level of performance for air operations (see paragraph 6.2.3.4).

In conclusion, SERA Part C provisions shall be implemented directly in all EU Member States without any modification beyond the flexibility tolerated within the provisions.

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[25] Commission Regulation (EC) No 859/2008 of 20 August 2008 amending Council Regulation (EEC) No 3922/91 as regards common technical requirements and administrative procedures applicable to commercial transportation by aeroplane (OJ L 254, 20.9.2008, p. 1).

[26] Commission Regulation (EU) No 805/2011 of 10 August 2011 laying down detailed rules for air traffic controllers' licences and certain certificates pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 206, 11.8.2011, p. 21).

6.2.5. Summary result for the transition phase

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

Even if current local requirements and SERA Part C requirements are based on the same ICAO material, differences will most likely exist between some current local requirements and SERA Part C requirements. The transition from the local situation to SERA Part C, even if the objective of both is safety and efficiency, shall be managed carefully to prevent any negative safety impact on the service delivered.

Transition between local requirements and SERA Part C 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 requirements and SERA Part C requirements.

Therefore, each EU Member State shall first determine if their current ATM requirements for ANS relative to 'rule of the air' differ from the SERA Part C 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 C. 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 EC 923/2012 article 9 'Safety Requirements' is also applicable to SERA Part C.

6.2.6. Summary result for the operation phase

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

6.2.6.1 Rule exemption

Rule exemption policy associated to any SERA Part C 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 C provision is permitted unless a safety problem is identified or exemptions for special operations have been granted by the competent authority. This point is addressed because EC 923/2012 Articles 3 'Compliance' and 4 'Exemptions for special operations' of the SERA IR Regulation are also applicable to SERA Part C.

6.2.6.2 Consistency between future ICAO material change and SERA Part C

The responsibility for controlling changes to SERA Part C, in particular for considering future ICAO[27] amendments shall be established. A pan-European process has to be put in place to maintain SERA Part C consistent with future ICAO changes.

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[27] ICAO Doc 4444 (PANS-ATM), ICAO DOC 7030 (EUR Regional Supplementary procedures) and specific ICAO procedures relative to surveillance (ICAO Doc 8168 PANS-OPS Vol I) and to voice communication (ICAO Annex 10 Vol II and Annex 11.

To strengthen that aspect, the Implementing Rule should define the maintenance process which will consider any future ICAO amendments. This point is addressed because EC 923/2012 Articles 6 'Monitoring of Amendments' and 7 'Amendments to the Annex' of the SERA IR Regulation are also applicable to SERA Part C.

6.2.7. Conclusion associated to the different development phases

The safety impact assessment process was carried out during the different phases of the European transposition of ATM requirements for ANS which are of a 'rules-of-the-air' nature into SERA Part C (Specification, development and partially implementation, transition and operation).

6.2.7.1 During the specification phase, the top level safety claim has been defined and was relative to show that: **'Procedures for Air Navigation services relative to Air Traffic Management specified in SERA Part C complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union'**..

This safety claim was the main driver for all safety activities carried out during this safety impact assessment. The safety activities carried out during this phase resulted in a set of high level SERA safety specifications (Seven SERA Spec) to be respected for the development phase in order to develop properly SERA Part C provisions.

6.2.7.2 During the development phase, it has been shown that SERA Part C procedures are complete and correct when considering the scope of SERA Part C when all issues will be addressed.

In addition, two safety assumptions (Safety Assumptions 1 and 2) 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 C.

6.2.7.3 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 C requirements by Member States.

6.2.7.4 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 ATM procedures relative to 'rule of the air' and SERA Part C, a local safety assessment shall be conducted. To address that aspect, application of EC 923/2012 article 9 'Safety Requirements' is considered acceptable.

6.2.7.5 During the safety assessment of the operation phase, it has been determined that no rule exemption is permitted except when a safety problem is identified or exemptions for special operations have been granted by the competent authority. Furthermore, a 'maintenance' process shall be put in place to consider future ICAO amendments into SERA Part C provisions.

To address the above aspects, application of EC 923/2012 article 3 'Compliance' , article 4 ' Exemptions for special operations' and article 7 'Amendments to the Annex' are considered acceptable.

6.2.7.6 Supported by a structured process addressing the different phases of SERA Part C development, it has been shown that **Procedures for Air Navigation Services relative**

to Air Traffic Management specified in SERA Part C complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union when:

— all safety issues are addressed;

— all Safety assumptions relative to people training and qualification are validated;

— the adopted SERA Part C 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 C;

— no rule exemption is permitted (except when a safety problem is identified or exemptions for special operations have been granted by the competent authority);

— a SERA Part C maintenance process is put in place; and

— all transpositions are achieved by EU/EASA.

6.2.8. General conclusion — Safety

This safety impact assessment is addressing the European transposition of ICAO procedures for Air Navigation Services relative to Air Traffic Management which are of a 'rules-of-the-air' nature into the single European sky legislative framework. Such transposition (SERA Part C) has been developed considering ICAO Doc 4444 (PANS-ATM), ICAO Doc 7030 (EUR Regional Supplementary procedures) and specific ICAO procedures relative to surveillance (ICAO Doc 8168 PANS-OPS Vol I) and to voice communication/phraseology (ICAO Annex 10 Vol II and Annex 11).

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

During the specification phase, the safety claim to be satisfied was identified as follows:

'Procedures for Air Navigation Services relative to Air Traffic Management specified in SERA Part C complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union. For that purpose, seven high-level SERA safety specifications were determined to be satisfied during the development phase in order to develop properly SERA Part C provisions.

In the development phase, it has been shown that SERA Part C procedures were complete, correct, realistically implementable/achievable and consistent with the IR objective when the different issues and assumptions listed in Table 4 at the end of this paragraph will be addressed. It is worth noting that most of the SERA Part C 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, CFIT, runway collision, Wwake-induced accident, etc.).

For the implementation phase, it has been determined that a direct implementation of SERA Part C provisions by Member States was necessary.

For the transition phase, it has been 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 C provisions.

Finally, for the operation phase it has been determined that no rule exemption is permitted except when a safety problem is identified or exemptions for special operations have been granted by the competent authority. Furthermore, a 'maintenance' process shall be put in place to consider future relevant ICAO amendments or change within the EU operational environment.

To conclude, the application of this structured safety impact assessment process has shown that Procedures for Air Navigation Services relative to Air Traffic Management specified in SERA Part C complement properly SERA Part A and B to ensure safe air operation and air traffic flow within the European Union. Indeed, all safety issues and assumptions identified during the safety assessment process have been properly addressed by the proposed amendments (provided in section 3. of this NPA) except issues listed in Table 4 below which have an 'Open' status. These open issues are discussed in paragraph 2.3.5 of this NPA.

Table 4: SERA Part C Issues with their status

Safety Issues	**Status**	Reference of the relevant proposed Amendments (see section 3 of this NPA)
Issue Completeness 01 SERA Part C provision should include the following requirements in order to be consistent with the use of designators for ATS routes *(which is already specified in SERA Section 14 based on Annex 11 Appendix 1 paragraph 4; 2.3 and 2.4)*:	**Closed with Change** The following procedure will be added: 'SERA.140xx Use of designators for standard instrument departure and arrival routes The plain language designator of standard instrument departure or arrival routes shall be used in voice communications'. It is proposed to have this complemented by AMC for the issue of the designators for significant points for which Annex 11 Appendices 2-4 is not so clear. GM will be considered for complementary information on SERA.14030 based on (Annex 11 Appendix 3 paragraph 5).	**SERA 14030 'Use of designators for standard instrument departure and arrival routes'** has been added.
Issue Flexibility 01 Confirm that the flexibility ('Unless otherwise prescribed by the…') associated to the SERA 14065 provision (Radiotelephony procedures for A/G voice communication channel changeover /PANS-ATM 4.11.3) does not impair the 'high' and 'uniform' level of safety.	**Closed with no change** This flexibility is necessary and, furthermore, SERA Part C wording is more restrictive than PANS ATM	**SERA 14065 'Radiotelephony procedures for A/G voice communication channel changeover'** SERA 14065 (a) ○ Initial call to ATC Unit
Issue Flexibility 02 Confirm that the flexibility ('Unless otherwise prescribed by the…') associated to SERA 13010(b) (Verification of the pressure altitude at controller level) does not impair the 'high' and 'uniform' level of safety.	**OPEN** waiting NPA consultation and conclusion on the opportunity to maintain this flexibility.	**SERA 13010 'Pressure altitude derived information'** SERA 13010 (b) — Procedures for Mode C operation
Issue Correctness 01 Assess the safety impact of the notified differences and decide if the procedure for expressing vertical position of the aircraft when QFE is used has to be	**Closed with no change** The notified differences are considered less demanding than ICAO and, therefore, it is proposed not to consider them for SERA.	**SERA 8015 'ATC Clearances'** SERA 8015 (f) (1) — Procedures for expressing vertical

Safety Issues	**Status**	Reference of the relevant proposed Amendments (see section 3 of this NPA)
amended.		position of the aircraft
Issue Correctness 02 Assess the safety impact of the notified difference (the maximum period for radio contact is reduced from 20-40 minutes to 10 minutes) and decide if the procedures for periodic radio contact shall be amended.	**Closed with no change** Considering the European airspace the report during a period from 20-40 minutes is considered sufficient and safe.	**SERA 10001 'Alerting service-application'** SERA 10001(b) and SERA 10001(c) — Procedures for resuming position reporting
Issue Correctness 03 Assess the operational impact of setting ATC code 2000 in the different States in absence of ATC directions or regional navigation agreements.	**Closed** because procedure (13005 (b)) provided in proposed amendments (section 3 of this NPA) suppresses reference to ATC code 2000.	**SERA 13005 'SSR transponder Mode A code Setting'** SERA 13005 (b) — Procedures for Mode A code setting
Issue Correctness 04 Clarify if Procedures for Mode C operation applies only to SSR transponder or to SSR transponder and ADS-B transmitter.	**Closed** because SERA procedures (13001, 13010, 13015 and 13020) provided in proposed amendments (section 3 of this NPA) are relative only to SSR and no more to ADS-B.	**SERA 13010 'Pressure altitude derived information'** SERA 13010 (a) and (b) — Procedures for Mode C operation
Issue Correctness 05 Assess the safety impact of notified differences against the procedures for Mode C operation and decide if the Mode C altitude tolerance value shall be specified in the provision.	**Closed** The tolerance value is not published in SERA Part C. A SERA GM will be added to indicate that PART ATS will address this aspect.	**SERA 13010 'Pressure altitude derived information'** SERA 13010 (a) and (b) — Procedures for Mode C operation
Issue Correctness 06 Determine why the criteria to operate the emergency and/or urgency mode is different between ADS-B and SSR (e.g. minimum fuel, medical added for ADS-B).	**Closed** because this procedure is suppressed from SERA Part C. Indeed, there is no specific ADS-B procedure anymore in the proposed amendments (section 3 of this NPA)	Suppressed
Issue Correctness 07 Provision for using SSR/ADS-B in case of Radio communication failure and procedures in case of voice communication failure are associated with the more general concern about the Radio Communication Failure (RCF) which should be reviewed and amended by ICAO.	**OPEN** waiting consultation results and status/evolution of ICAO RCF procedure	**SERA 14085 (a) & (b)** 'voice communication failure'
Issue Correctness 08 Determine from a safety point of view if the voice communication message category naming and radiotelephony order is correct considering the Member State's notified differences.	**OPEN** waiting consultation results	**SERA 14005 'categories of message '**
Issue Correctness 09 Use of designators in communication provision should clearly indicate that it applies only for the identification of ATS route to prevent any misunderstanding.	**Closed** because the new title of SERA 14025 (in proposed amendments provided in section 3 of this NPA) specifies that it addresses ATS routes other than SID/STAR	**SERA 14025 'Principle governing the identification of ATS routes other than SID/STAR'**
Issue Correctness 10	**Closed**	**SERA 14035 'Transmission**

Safety Issues	**Status**	Reference of the relevant proposed Amendments (see section 3 of this NPA)
Transmission of numbers in radiotelephony provision should be reassessed based on lot of notified differences leading to lot of exceptions where each digit is not transmitted and this provision should be modified, if necessary, to prevent proliferation of local adaptations.	A new proposal based on the works of APDSG/NETOPS has been included into the draft (SERA.14035). This proposal constitutes a difference to ICAO, but takes account of the current practice in Europe and of the differences notified. The objective is to have a standardised practice. This will need to be properly justified.	**of numbers in radiotelephony'** SERA 14035 (a) (1), (2) and (3) — Transmission of numbers in radiotelephony
Issue Correctness 11 Meaning of words and phrases used in radiotelephony provision should be reviewed based on lot of Member State's notified differences leading to words/phrase not used and/or new words/phrase used in certain States. This provision should be modified if necessary for standardisation purposes.	**OPEN** waiting consultation results	**SERA 14045 'Transmitting technique'**
Issue Correctness 12 Aircraft radiotelephony full call sign type provision should be reassessed to confirm that Type B radiotelephony call sign as specified is acceptable despite that the full registration mark is not included.	**Closed** The notified differences are not considered appropriate for inclusion into SERA. The utilisation of 5 letters behind the company name instead of 4, compared to simply 5 characters (Type A) does not seem to bring much benefits. A short explanation in NPA could be added if deemed necessary.	**SERA 14050 'Radiotelephony call signs for aircraft'** SERA 14050 (a) : Full call signs
Issue Correctness 13 Assess if omitting the ground station call sign for the establishment of radio telecommunications may improve safety standards at busy ATC units.	**OPEN** waiting consultation results	**SERA 14055** 'Radiotelephony procedures' SERA 14055 (b) — Establishment of radiotelephony communications
Issue Correctness 14 For the exchange of communication principles provision, it should be analysed if the examples of acknowledging communication receipt as provided in ICAO Doc 9432 § 2.8.1.6 and 3.3.2 are safety beneficial and this provision should be modified if deemed necessary.	**Closed** because SERA 14075 (a) is consistent with ICAO Doc 9432 (4th Edition 2007) section 2.8	**SERA 14075 'Exchange of communication'** SERA 14075 (a) — Principles
Issue Correctness 15 Extend the applicability of the radiotelephony procedures for heavy wake turbulence category to super heavy wake turbulence category (e.g. A380)	**Closed** because new SERA 14065 (a) and 14090 (c) in the proposed amendments (section 3 of this NPA) addressed the super heavy category	**SERA 14065** 'Radiotelephony procedures for A/G voice communication channel changeover' SERA 14065 (a) — Initial call to ATC Unit
		SERA 14065 'Radiotelephony procedures for A/G voice communication channel changeover' SERA 14065 (c) — Initial call to aerodrome controller
		SERA 14090 'Specific

Safety Issues	**Status**	Reference of the relevant proposed Amendments (see section 3 of this NPA)
		communications procedures' SERA 14090 (c) — Indication of heavy wake turbulence category
Issue Correctness 16 Determine if the number of person onboard shall be added to the list of elements to be transmitted during radiotelephony procedures for distress communications	**OPEN** The notified difference is considered interesting for SERA. However, the question is where to draw the line (dangerous goods etc…). It is proposed to ask the question in the NPA and assess the outcome of the consultation.	**SERA 14095 '**Distress and urgency radiotelephony communication procedures**'** SERA 14095 (b) — Procedures for distress communications
		SERA 14095 'Distress and urgency radiotelephony communication procedures**'** SERA 14095 (c) — Procedures for urgency communications
Issue Correctness 17 The onward clearance time provision does not suit well within the 'Voice Communication procedure' section.	**Closed** because this procedure is suppressed from the proposed amendments (section 3 of this NPA)	Suppressed
Issue Correctness 18 The objectives and basic principles of the Air Traffic Advisory Service are provided in the proposed provision but there is no clear pilot-controller collaborative action specified.	**Closed** because the proposed amendments (section 3 of this NPA) is focusing on phraseology to be used for ATAS (use of words 'advise' or 'suggest' when a course of action is proposed to an aircraft)	**SERA 14090 'Specific communications procedures'** SERA 14090 (b) — Air Traffic advisory service
Issue Correctness 19 The controller procedure in regard to aircraft equipped with ACAS does not address all the aspects of the 'Voice Communication procedure'. during an active ACAS Resolution Advisory.	**Closed.** A new SERA 11014 provision was developed to describe exhaustively the collaborative actions between the pilot and the controller during a Resolution Advisory	**New SERA 11014** 'ACAS resolution advisory (RA)'