EASA
European Aviation Safety Agency

SERA
(IR + AMC/GM)

eRules

Easy Access Rules for Standardised European Rules of the Air (SERA)

EASA eRules: aviation rules for the 21st century

Rules are the core of the EU civil aviation system. The aim of the **EASA eRules** project is to make them **accessible** to stakeholders in an efficient and reliable way.

The **EASA eRules** is a comprehensive, single system for structuring, sharing, and storing of rules. It is the single, easy-access online database for all aviation safety rules applicable to European airspace users.

The **Easy Access Rules** (**EAR**) are the output of the eRules project. They are consolidated versions of those rules, combining EU regulations with EASA certification specifications (CSs), acceptable means of compliance (AMC), and guidance material (GM) in an easy-to-read format with advanced navigation features through links and bookmarks. EAR are regularly updated, following the adoption of an official publication.

The **EAR** are available:

— in PDF format;

— as dynamic online publications (online format) with a wide range of functionalities, such as filters to obtain regulatory material tailored to one's needs, a search function through the table of contents to quickly access the relevant sections, and easy navigation for computers, tablets, and mobiles; and

— in XML (machine-readable format) that can be easily processed and automated by recipients, producing output that is compatible and can be synchronised with local applications, search databases, etc.

The **EASA eRules** system is developed and implemented in close cooperation with the Member States and aviation industry to ensure that all its capabilities are relevant and effective.

Published February 2023[1]

[1] The published date represents the date when the consolidated version of the document was generated.

[2] Euro-Lex, Important Legal Notice: http://eur-lex.europa.eu/content/legal-notice/legal-notice.html.

DISCLAIMER

This document is issued by the European Union Aviation Safety Agency (referred to as both 'EASA' and 'the Agency') to provide its stakeholders with an updated, consolidated, and easy-to-read publication. It has been prepared by putting together the officially published EU regulations with the related EASA acceptable means of compliance (AMC) and guidance material (GM) (including the amendments) adopted so far. However, this is not an official publication, and EASA accepts no liability for damage of any kind resulting from the risks inherent in its use.

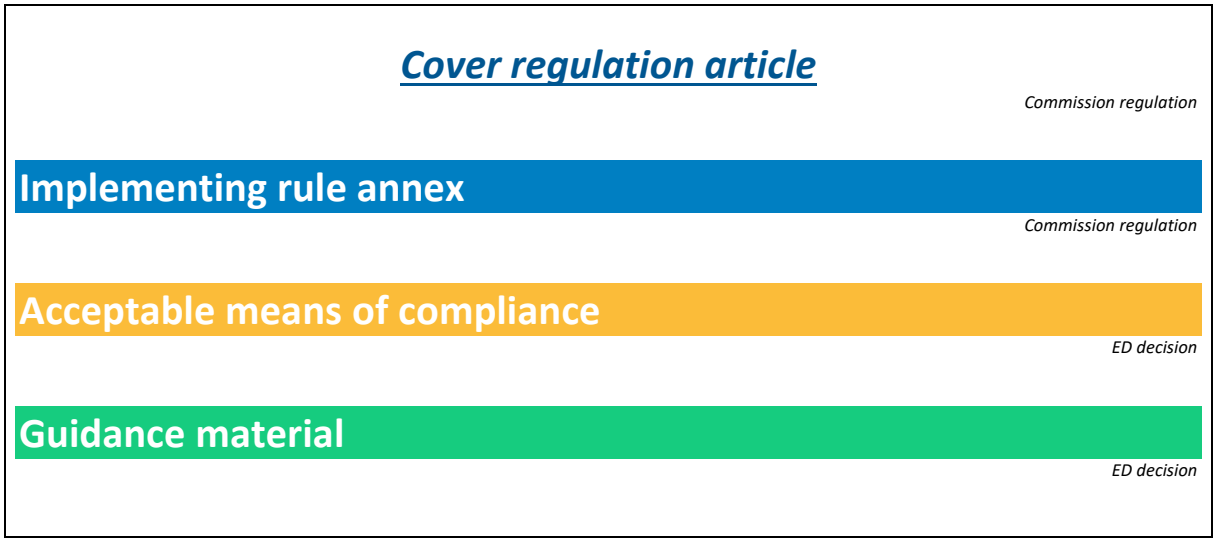
LIST OF REVISIONS

Published	Reason for revision
December 2018	First Easy Access Rules for SERA document powered by eRules, incorporating: — Regulation (EU) No 923/2012, — Regulation (EU) 2016/1185, — ED Decision 2013/013/R, and — ED Decision 2016/023/R.
December 2020	Revision from December 2020 to incorporate: — Regulation (EU) 2020/469, — Regulation (EU) 2020/1177, — ED Decision 2020/007/R, and — ED Decision 2020/016/R.
November 2021	Revision from November 2021 to incorporate: — Regulation (EU) 2021/666.
March 2022	Revision from March 2022: — to remove the special formatting from the rules applicable from 27 January 2021; and — to incorporate ED Decision 2021/014/R.
February 2023	Revision from February 2023: — to remove the special formatting from the rules applicable from 1 December 2022 and 26 January 2023; — to incorporate ED Decision 2022/020/R; and — to incorporate ED Decision 2022/024/R.

NOTE FROM THE EDITOR

The content of this document is arranged as follows: the cover regulation (recitals and articles) of the implementing rule (IR) appear first, then the IR annex points, followed by the related acceptable means of compliance (AMC) and guidance material (GM).

All elements (i.e. articles, IRs, AMC, and GM) are colour-coded and can be identified according to the illustration below. The EU regulation or EASA Executive Director (ED) decision through which the article, IR, AMC, or GM was introduced or last amended is indicated below the article, IR, AMC, or GM title *in italics*.



This document will be updated regularly to incorporate further amendments.

The format of this document has been adjusted to make it user-friendly and for reference purposes. Any comments should be sent to erules@easa.europa.eu.

INCORPORATED AMENDMENTS

IMPLEMENTING RULES (IRS) (COMMISSION REGULATIONS)

Incorporated Commission Regulation	Regulation amendment	Applicability date(s)[1]
Regulation (EU) No 923/2012	Initial issue	4/12/2012
Regulation (EU) 2016/1185	Amendment 1	12/10/2017
Regulation (EU) 2020/469	Amendment 2	27/1/2022 5/11/2020 (for SERA.12005(a)(9))
Regulation (EU) 2020/1177	Amendment 3	12/8/2021 (for SERA.12005(a)(9))
Regulation (EU) 2021/666	Amendment 4	26/1/2023

AMC/GM TO IRS (ED DECISIONS)

Incorporated ED Decision	AMC/GM Issue No, Amendment No	Applicability date(s)
ED Decision 2013/013/R	Initial issue	17/7/2013
ED Decision 2016/023/R	Amendment 1	15/10/2016
ED Decision 2020/007/R	Amendment 2	27/1/2022 3/7/2020 (for GM1 SERA.2005) 5/11/2020 (for point 1.1.11 of AMC1 SERA 14001)
ED Decision 2020/016/R	Amendment 3	12/8/2021 (for point 1.1.11 of AMC1 SERA.14001)
ED Decision 2021/014/R	Amendment 4	1/12/2022
ED Decision 2022/020/R	Amendment 5	1/12/2022
ED Decision 2022/024/R	Amendment 6	26/1/2023

Note: To access the official versions, please click on the hyperlinks provided above.

[1] *This is the date of application (i.e. the date from which an act or a provision in an act produces its full legal effects) as defined in the relevant cover regulation article. However, some provisions of the regulations may be applicable at an earlier date (deferred applicability). In addition, there may be certain opt-outs (derogations from certain provisions) notified by the Member States.*

TABLE OF CONTENTS

COVER REGULATION

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

Regulation (EU) 923/2012

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky[1] (the airspace Regulation), and in particular Article 4(a) and (b) thereof,

Having regard to 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[2] (the EASA Basic Regulation), and in particular Articles 8 and 8b and Annex Vb thereto,

Whereas:

(1) Pursuant to Regulation (EC) No 551/2004 and Regulation (EC) No 216/2008, the Commission is required to adopt implementing rules in order to adopt appropriate provisions on rules of the air based upon Standards and recommended practices of the International Civil Aviation Organisation (ICAO), and to harmonise the application of the ICAO airspace classification, with the aim to ensure the seamless provision of safe and efficient air traffic services within the single European sky.

(2) Eurocontrol has been mandated in accordance with Article 8(1) of Regulation (EC) No 549/2004 of the European Parliament and the Council of 10 March 2004 laying down the framework for the creation of the single European sky[3] to assist the Commission in the development of implementing rules which lay down appropriate provisions on rules of the air based upon ICAO Standards and recommended practices, and harmonise the application of the ICAO airspace classification.

(3) In accordance with Articles 1(3) and 13 of Regulation (EC) No 549/2004 and Article 2 of Regulation (EC) No 216/2008, the single European sky initiative should assist the Member States in fulfilling their obligations under the 1944 Chicago Convention on International Civil Aviation (hereafter the Chicago Convention) by providing for common interpretation and implementation.

(4) The objective of Regulation (EC) No 551/2004 is to support the concept of a more integrated operating airspace within the context of the common transport policy, and to establish common procedures for design, planning and management while ensuring the efficient and safe performance of air traffic management. This objective is particularly relevant for the rapid implementation of functional airspace blocks in the single European sky.

[1] OJ L 96 31.3.2004, p. 20

[2] OJ L 79 19.3.2008, p. 1

[3] OJ L 96, 31.3.2004, p. 1.

(5) The outcome of the work undertaken by the joint group created by the Commission, Eurocontrol and ICAO, which charted the national differences filed by Member States relating to ICAO Standards dealing with rules of the air and related provisions for air navigation services, supports the need for standardisation of common rules and differences with respect to the single European sky.

(6) In order to ensure safe, efficient and expeditious international air traffic and to support the establishment of functional airspace blocks, all participants in the single European sky should adhere to a common set of rules. Furthermore, a key enabler of safe cross-border operations is the creation of a transparent regulatory system, where the actors can be provided a legal certainty and predictability. To this end, standardised rules of the air and related operational provisions regarding services and procedures in air navigation should be established, and be supplemented, where appropriate, with guidance material and/or acceptable means of compliance.

(7) To achieve those objectives, only commonly agreed European differences should be notified to ICAO by the Member States on areas which are covered by Union law. Those differences should be established and monitored through a permanent process.

(8) Member States that have adopted additional provisions complementing an ICAO standard, should, if they are still considered necessary and provided such additional provisions do not constitute a difference under the Chicago Convention or against existing Union law, continue to apply such provisions until they are addressed by appropriate Union provisions.

(9) The application of this Regulation should be without prejudice to the Member States' obligations and rights over the high seas, in accordance with Article 12 of the Chicago Convention, and in particular with Annex 2 to the Chicago Convention, as well as the obligations of Member States and the Union under the United Nations Convention on the Law of the Sea and the obligations of Member States under the Convention on the International Regulations for Preventing Collisions at Sea, 1972.

(10) In accordance with Article 1(2) of the framework Regulation (EC) No 549/2004, the regulatory framework for the creation of the single European sky does not cover military operations and training.

(11) The existing process for amending ICAO Standards and recommended practices within the framework of the Chicago Convention is not addressed by this Regulation.

(12) The extension of the competence of EASA to include air traffic management safety requires consistency between the development of implementing rules under Regulations (EC) No 551/2004 and (EC) No 216/2008.

(13) In order to ensure consistency between the transposition of provisions of Annex 2 to the Chicago Convention set out in this Regulation and the future provisions stemming from other annexes to the Chicago Convention, which will be included in the next stages of work as well as the implementation of future Union rules, the initial provisions should be revisited where necessary.

(14) Where necessary, other Union legislation should be updated to refer to this Regulation,

HAS ADOPTED THIS REGULATION:

Article 1 Subject matter and scope

Regulation (EU) 2016/1185

1. The objective of this Regulation is to establish the common rules of the air and operational provisions regarding services and procedures in air navigation that shall be applicable to general air traffic within the scope of Regulation (EC) No 551/2004.

2. This Regulation shall apply in particular to airspace users and aircraft engaged in general air traffic:

   (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 country having jurisdiction over the territory overflown.

3. This Regulation shall also apply to the competent authorities of the Member States, air navigation service providers, aerodrome operators and ground personnel engaged in aircraft operations.

4. This Regulation shall not apply to model aircraft and toy aircraft. However, Member States shall ensure that national rules are established to ensure that model aircraft and toy aircraft are operated in such a manner as to minimise hazards related to civil aviation safety, to persons, property or other aircraft.

Article 2 Definitions

Regulation (EU) 2021/666

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

1. ‘accuracy’ means a degree of conformance between the estimated or measured value and the true value;

3. ‘advisory airspace’ means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available;

4. ‘advisory route’ means a designated route along which air traffic advisory service is available;

5. ‘aerobatic flight’ means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed, not necessary for normal flight or for instruction for licenses or ratings other than aerobatic rating;

6. ‘aerodrome’ means a defined area (including any buildings, installations and equipment) on land or water or on a fixed, fixed off-shore or floating structure intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;

7. ‘aerodrome control service’ means air traffic control service for aerodrome traffic;

8. ‘aerodrome control tower’ means a unit established to provide air traffic control service to aerodrome traffic;

9. ‘aerodrome traffic’ means all traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome. An aircraft operating in the vicinity of an aerodrome includes but is not limited to aircraft entering or leaving an aerodrome traffic circuit;

10. ‘aerodrome traffic circuit’ means the specified path to be flown by aircraft operating in the vicinity of an aerodrome;

11. ‘aerodrome traffic zone’ means an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic;

12. ‘aerial work’ means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.;

13. ‘Aeronautical Information Publication (AIP)’ means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation;

14. ‘aeronautical mobile service’ means a mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies;

15. ‘aeronautical station’ means a land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea;

16. ‘aeroplane’ means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

17. ‘airborne collision avoidance system (ACAS)’ means an aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders;

18. ‘aircraft’ means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface;

19. ‘aircraft address’ means a unique combination of 24 bits available for assignment to an aircraft for the purpose of air-ground communications, navigation and surveillance;

20. ‘aircraft observation’ means the evaluation of one or more meteorological elements made from an aircraft in flight;

21. ‘AIRMET information’ means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof;

22. ‘air-ground communication’ means two-way communication between aircraft and stations or locations on the surface of the earth;

23. ‘air-ground control radio station’ means an aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area;

24. ‘air-report’ means a report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting;

25. ‘air-taxiing’ means movement of a helicopter/vertical take-off and landing (VTOL) above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kts);

26. ‘air traffic’ means all aircraft in flight or operating on the manoeuvring area of an aerodrome;

27. ‘air traffic advisory service’ means a service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on instrument flight rules (IFR) flight plans;

28. ‘air traffic control (ATC) clearance’ means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;

29. ‘air traffic control instruction’ means directives issued by air traffic control for the purpose of requiring a pilot to take a specific action;

30. ‘air traffic control service’ means a service provided for the purpose of:

    (a) preventing collisions:

        (1) between aircraft; and

        (2) on the manoeuvring area between aircraft and obstructions; and

    (b) expediting and maintaining an orderly flow of air traffic;

31. ‘air traffic control unit’ means a generic term meaning variously, area control centre, approach control unit or aerodrome control tower;

32. ‘air traffic service (ATS)’ means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service);

33. ‘air traffic services (ATS) airspaces’ mean airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified;

34. ‘air traffic services (ATS) reporting office (ARO)’ means a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure;

34a. ‘air traffic services (ATS) surveillance service’ means a service provided directly by means of an ATS surveillance system;

35. ‘air traffic services (ATS) unit’ means a generic term meaning, variously, air traffic control unit, flight information centre, aerodrome flight information service unit or air traffic services reporting office;

36. ‘airway’ means a control area or portion thereof established in the form of a corridor;

37. ‘alerting service’ means a service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required;

38. ‘alternate aerodrome’ means an aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing, where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate aerodromes include the following:

    (a) take-off alternate: an alternate aerodrome at which an aircraft would be able to land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure;

    (b) en-route alternate: an alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en route;

(c) destination alternate: an alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing;

39. 'altitude' means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL);

40. 'approach control service' means air traffic control service for arriving or departing controlled flights;

41. 'approach control unit' means a unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes;

42. 'apron' means a defined area, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance;

43. 'area control centre (ACC)' means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction;

44. 'area control service' means air traffic control service for controlled flights in control areas;

45. 'area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these;

46. 'ATS route' means a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services;

47. 'automatic dependent surveillance — broadcast (ADS-B)' means a means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;

48. 'automatic dependent surveillance — contract (ADS-C)' means a means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports;

48a. 'automatic dependent surveillance — contract (ADS-C) agreement' means a reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to, prior to using ADS-C in the provision of air traffic services);

49. 'automatic terminal information service (ATIS)' means the automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:

(a) 'Data link-automatic terminal information service (D-ATIS)' means the provision of ATIS via data link;

(b) 'Voice-automatic terminal information service (Voice-ATIS)' means the provision of ATIS by means of continuous and repetitive voice broadcasts;

50. 'ceiling' means the height above the ground or water of the base of the lowest layer of cloud below 6 000 m (20 000 ft) covering more than half the sky;

51. 'change-over point' means the point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft;

52. ‘clearance limit’ means the point to which an aircraft is granted an air traffic control clearance;

53. ‘cloud of operational significance’ means a cloud with the height of cloud base below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater, or a cumulonimbus cloud or a towering cumulus cloud at any height;

54. ‘code (SSR)’ means the number assigned to a particular multiple pulse reply signal transmitted by a transponder in Mode A or Mode C;

55. ‘competent authority’ means the authority designated by the Member State as competent to ensure compliance with the requirements of this Regulation;

56. ‘control area’ means a controlled airspace extending upwards from a specified limit above the earth;

57. ‘controlled aerodrome’ means an aerodrome at which air traffic control service is provided to aerodrome traffic;

58. ‘controlled airspace’ means an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification;

59. ‘controlled flight’ means any flight which is subject to an air traffic control clearance;

60. ‘controller-pilot data link communications (CPDLC)’ mean a means of communication between controller and pilot, using data link for ATC communications;

61. ‘control zone’ means a controlled airspace extending upwards from the surface of the earth to a specified upper limit;

62. ‘cruise climb’ means an aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases;

63. ‘cruising level’ means a level maintained during a significant portion of a flight;

64. ‘current flight plan (CPL)’ means the flight plan, including changes, if any, brought about by subsequent clearances;

65. ‘danger area’ means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;

66. ‘data link communications’ mean a form of communication intended for the exchange of messages via a data link;

67. ‘datum’ means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;

68. ‘downstream clearance’ means a clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft;

69. ‘estimated elapsed time’ means the estimated time required to proceed from one significant point to another;

70. ‘estimated off-block time’ means the estimated time at which the aircraft will commence movement associated with departure;

71. ‘estimated time of arrival (ETA)’ means for IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For visual flight rules (VFR) flights, the time at which it is estimated that the aircraft will arrive over the aerodrome;

72. ‘expected approach time’ means the time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing. The actual time of leaving the holding fix will depend upon the approach clearance;

73. ‘filed flight plan (FPL)’ means the flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes;

74. ‘flight crew member’ means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;

75. ‘flight information centre’ means a unit established to provide flight information service and alerting service;

76. ‘flight information region’ means an airspace of defined dimensions within which flight information service and alerting service are provided;

77. ‘flight information service’ means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;

78. ‘flight level (FL)’ means a surface of constant atmospheric pressure which is related to a specific pressure datum, 1013,2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals;

79. ‘flight plan’ means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft;

80. ‘flight visibility’ means the visibility forward from the cockpit of an aircraft in flight;

81. ‘forecast’ means a statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace;

82. ‘ground visibility’ means the visibility at an aerodrome, as reported by an accredited observer or by automatic systems;

83. ‘heading’ means the direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid);

84. ‘height’ means the vertical distance of a level, a point or an object considered as a point, measured from a specified datum;

85. ‘helicopter’ means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more powerdriven rotors on substantially vertical axes;

86. ‘high seas airspace’ means airspace beyond land territory and territorial seas, as specified in the United Nations Convention on the Law of the Sea (Montego Bay, 1982);

87. ‘IFR’ means the symbol used to designate the instrument flight rules;

88. ‘IFR flight’ means a flight conducted in accordance with the instrument flight rules;

89. ‘IMC’ means the symbol used to designate instrument meteorological conditions;

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. An instrument approach procedure designed for 2D instrument approach operations Type A;

    (b) approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;

    (c) precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B;

91. ‘instrument meteorological conditions (IMC)’ mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions;

92. ‘landing area’ means that part of a movement area intended for the landing or take-off of aircraft;

93. ‘level’ means a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level;

94. ‘manoeuvring area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons;

94a. ‘minimum fuel’ means 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;

95. ‘mode (SSR)’ means the conventional identifier related to specific functions of the interrogation signals transmitted by an SSR interrogator. There are four modes specified in ICAO Annex 10: A, C, S and intermode;

95a. ‘model aircraft’ means an unmanned aircraft, other than toy aircraft, having an operating mass not exceeding limits prescribed by the competent authority, that is capable of sustained flight in the atmosphere and that is used exclusively for display or recreational activities;

95b. ‘mountainous area’ means 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);

96. ‘movement area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s);

97. ‘night’ means the hours between the end of evening civil twilight and the beginning of morning civil twilight. Civil twilight ends in the evening when the centre of the sun’s disc is 6 degrees below the horizon and begins in the morning when the centre of the sun’s disc is 6 degrees below the horizon;

98. ‘obstacle’ means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:

    (a) are located on an area intended for the surface movement of aircraft; or

    (b) extend above a defined surface intended to protect aircraft in flight; or

(c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation;

99. 'operating site' means a site selected by the operator or pilot-in-command for landing, take-off and/or hoist operations;

100. 'pilot-in-command' means the pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight;

101. 'pressure-altitude' means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere, as defined in Annex 8, Part 1 to the Chicago Convention;

102. 'problematic use of substances' means the use of one or more psychoactive substances by aviation personnel in a way that:

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or

(b) causes or worsens an occupational, social, mental or physical problem or disorder;

103. 'prohibited area' means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited;

104. 'psychoactive substance' means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas caffeine and tobacco are excluded;

105. 'radar' means a radio detection device which provides information on range, azimuth and/or elevation of objects;

106. 'radio mandatory zone (RMZ)' means an airspace of defined dimensions wherein the carriage and operation of radio equipment is mandatory;

107. 'radio navigation service' means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids;

108. 'radiotelephony' means a form of radiocommunication primarily intended for the exchange of information in the form of speech;

109. 'repetitive flight plan' means a flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units;

110. 'reporting point' means a specified geographical location in relation to which the position of an aircraft can be reported;

111. 'restricted area' means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions;

112. 'route segment' means a route or portion of route usually flown without an intermediate stop;

113. 'runway' means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft;

114. 'runway-holding position' means a designated position intended to protect a runway, an obstacle limitation surface, or an instrument landing system (ILS)/microwave landing system (MLS) critical/sensitive area at which taxiing aircraft and vehicles are to stop and hold, unless otherwise authorised by the aerodrome control tower;

115. ‘runway visual range (RVR)’ means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;

116. ‘safety-sensitive personnel’ means persons who might endanger aviation safety if they perform their duties and functions improperly, including crew members, aircraft maintenance personnel, aerodrome operations personnel, rescue, fire-fighting and maintenance personnel, personnel allowed unescorted access to the movement area and air traffic controllers;

117. ‘sailplane’ means a heavier-than-air aircraft which is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine, including also hang gliders, paragliders and other comparable craft;

118. ‘secondary surveillance radar (SSR)’ means a surveillance radar system which uses transmitters/receivers (interrogators) and transponders;

119. ‘SIGMET information’ means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations;

120. ‘signal area’ means an area on an aerodrome used for the display of ground signals;

121. ‘significant point’ means a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes;

122. ‘special VFR flight’ means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC;

123. ‘strayed aircraft’ means an aircraft which has deviated significantly from its intended track or which reports that it is lost;

124. ‘surveillance radar’ means radar equipment used to determine the position of an aircraft in range and azimuth;

125. ‘taxiing’ means movement of an aircraft on the surface of an aerodrome or an operating site under its own power, excluding take-off and landing;

126. ‘taxiway’ means a defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

    (a) Aircraft stand taxilane means a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

    (b) Apron taxiway means a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

    (c) Rapid exit taxiway means a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times;

127. ‘territory’ means the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of a State;

128. ‘threshold’ means the beginning of that portion of the runway usable for landing;

129. ‘total estimated elapsed time’ means:

    (a) for IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an

instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome;

(b) for VFR flights, the estimated time required from take-off to arrive over the destination aerodrome;

129a. 'toy aircraft' means an unmanned aircraft designed or intended for use, whether or not exclusively, in play by children under 14 years of age;

130. 'track' means the projection on the earth's surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid);

131. 'traffic avoidance advice' means an advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision;

132. 'traffic information' means information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision;

133. 'transfer of control point' means a defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next;

134. 'transition altitude' means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;

135. 'transition level' means the lowest flight level available for use above the transition altitude;

136. 'transponder mandatory zone (TMZ)' means an airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory;

137. 'unidentified aircraft' means an aircraft which has been observed or reported to be operating in a given area but whose identity has not been established;

138. 'unmanned free balloon' means a non-power-driven, unmanned, lighter-than-air aircraft in free flight;

139. 'VFR' means the symbol used to designate the visual flight rules;

140. 'VFR flight' means a flight conducted in accordance with the visual flight rules;

141. 'visibility' means visibility for aeronautical purposes which is the greater of:

(a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background;

(b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background;

142. 'visual meteorological conditions' mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima;

143. 'VMC' means the symbol used to designate visual meteorological conditions;

144. 'critical area' means an area of defined dimensions extending around the ground equipment of a precision instrument approach within which the presence of vehicles or aircraft will cause unacceptable disturbance of the guidance signals;

145. 'sensitive area' means an area extending beyond the critical area where the parking or movement, or both, of aircraft or vehicles will affect the guidance signal to the extent that it may be rendered as an unacceptable disturbance to aircraft using the signal;

146. 'U-space airspace' means a UAS geographical zone designated by Member States, where UAS operations are only allowed to take place with the support of U-space services;

147. 'U-space service' means a service relying on digital services and automation of functions designed to support safe, efficient and secure access to U-space airspace for a large number of UAS.

GM1 Article 2(12) Aerial work

ED Decision 2020/007/R

GENERAL

Regulation (EU) 2017/373 and Regulation (EU) No 923/2012 define 'aerial work' in a way that is similar but not identical to the way Regulation (EU) No 965/2012 (the 'Air Operations Regulation') defines 'specialised operations'. Both definitions, 'aerial work' and 'specialised operations', are based upon the ICAO Annex 6 definitions and encompass a variety of activities that do not fall into the category of commercial air transport (CAT) operations.

In this context, it is understood that:

(a) Unlike 'aerial work', 'specialised operations' do not include flights conducted for the purposes of search and rescue and firefighting as from the Air Operations Regulation's perspective those flights are outside the scope of the European Union Aviation Safety Agency (EASA) Basic Regulation.

(b) Unlike 'aerial work', 'specialised operations' include (test) flights carried out by design or production organisations for the purpose of introduction or modification of aircraft types and (ferry) flights carrying no passengers or cargo where the aircraft is ferried for refurbishment, repair, maintenance checks, inspections, delivery, export or similar purposes.

GM1 Article 2(25) Air-taxiing

ED Decision 2013/013/R

The actual height during air-taxiing may vary, and some helicopters may require air-taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo sling loads.

GM1 Article 2(27) Air traffic advisory service

ED Decision 2016/023/R

AIR TRAFFIC ADVISORY SERVICE

(a) Air traffic advisory service does not afford the degree of safety and cannot assume the same responsibilities as air traffic control (ATC) service in respect of the avoidance of collisions, since the information regarding the disposition of traffic in the area concerned available to the unit providing air traffic advisory service may be incomplete.

(b) Aircraft wishing to conduct IFR flights within advisory airspace, but not electing to use the air traffic advisory service, are nevertheless to submit a flight plan, and notify changes made thereto to the unit providing that service.

(c) ATS units providing air traffic advisory service:

(1) *advise* the aircraft to depart at the time specified and to cruise at the levels indicated in the flight plan if it does not foresee any conflict with other known traffic;

(2) *suggest* to aircraft a course of action by which a potential hazard may be avoided, giving priority to an aircraft already in advisory airspace over other aircraft desiring to enter such advisory airspace; and

(3) *pass* to aircraft traffic information comprising the same information as that prescribed for area control service.

GM1 Article 2(28) Air traffic control clearance

ED Decision 2013/013/R

(a) For convenience, the term 'air traffic control clearance' is frequently abbreviated to 'clearance' when used in appropriate contexts.

(b) The abbreviated term 'clearance' may be prefixed by the words 'taxi', 'take-off', 'departure', 'en route', 'approach' or 'landing' to indicate the particular portion of flight to which the air traffic control clearance relates.

GM1 Article 2(34) Air traffic services reporting office

ED Decision 2013/013/R

An air traffic services reporting office may be established as a separate unit or combined with an existing unit, such as another air traffic services unit, or a unit of the aeronautical information service.

GM1 Article 2(38) Alternate aerodrome

ED Decision 2013/013/R

The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.

GM1 Article 2(39) Altitude

ED Decision 2013/013/R

(a) A pressure type altimeter calibrated in accordance with the Standard Atmosphere when set to a QNH altimeter setting will indicate altitude (above the mean sea level).

(b) The term 'altitude' indicates altimetric rather than geometric altitude.

GM1 Article 2(41) Approach control unit

ED Decision 2013/013/R

The purpose of the definition is to describe the specific services associated to approach control unit. This does not preclude the possibility for an approach control unit to provide air traffic control services to flights other than those arriving or departing.

GM1 Article 2(45) Area navigation (RNAV)

ED Decision 2013/013/R

Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

GM1 Article 2(46) ATS route

ED Decision 2020/007/R

GENERAL

(a) The term 'ATS route' is used to mean variously 'airway', 'advisory route', 'controlled route' or 'uncontrolled route' (i.e. VFR routes or corridors), 'arrival or departure route', etc.

(b) An ATS route is defined by route specifications, which include an ATS route designator, the track to or from significant points (waypoints), distance between significant points, reporting requirements and the minimum flight altitude.

GM1 Article 2(48) Automatic dependent surveillance — contract (ADS-C)

ED Decision 2013/013/R

The abbreviated term 'ADS-C' is commonly used to refer to ADS event contract, ADS demand contract, ADS periodic contract, or an emergency mode.

GM1 Article 2(48a) ADS-C agreement

ED Decision 2013/013/R

The terms of the ADS-C agreement, which establishes the conditions of the ADS-C data reporting, will be exchanged between the ground system and the aircraft by means of a contract, or a series of contracts.

GM1 Article 2(51) Change-over point

ED Decision 2013/013/R

Change-over points are established to provide the optimum balance in respect of signal strength and quality between ground facilities at all levels to be used and to ensure a common source of azimuth guidance for all aircraft operating along the same portion of a route segment.

GM1 Article 2(57) Controlled aerodrome

ED Decision 2020/007/R

GENERAL

The airspace associated with a controlled aerodrome is designed in compliance with the requirements in Annex XI (Part-FPD) to Regulation (EU) 2017/373.

GM1 Article 2(58) Controlled airspace

ED Decision 2013/013/R

Controlled airspace is a generic term which covers ATS airspace Classes A, B, C, D and E.

GM1 Article 2(78) Flight level

ED Decision 2013/013/R

A pressure type altimeter calibrated in accordance with the Standard Atmosphere, when set to a pressure of 1 013,2 hPa, may be used to indicate flight levels.

GM1 Article 2(84) Height

ED Decision 2013/013/R

(a) A pressure type altimeter calibrated in accordance with the Standard Atmosphere, when set to a QFE altimeter setting, will indicate height (above the QFE reference datum).

(b) The term 'height' indicates altimetric rather than geometric height.

GM1 Article 2(89a) Instrument approach operation

ED Decision 2016/023/R

Lateral and vertical guidance utilised in an instrument approach procedure refers to the guidance provided either by:

(a) a ground-based navigation aid; or

(b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

GM1 Article 2(90) Instrument approach procedure

ED Decision 2016/023/R

Instrument approach operations are classified based on the designed lowest operating minima below which an approach operation should only be continued with the required visual reference as follows:

(a) Type A: a minimum descent height or decision height (DH) at or above 75 m (250 ft); and

(b) Type B: a DH below 75 m (250 ft). Type B instrument approach operations are categorised as:

(1) Category I (CAT I): a DH not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range (RVR) not less than 550 m;

(2) Category II (CAT II): a DH lower than 60 m (200 ft) but not lower than 30 m (100 ft) and an RVR not less than 300 m;

(3) Category IIIA (CAT IIIA): a DH lower than 30 m (100 ft) or no DH and an RVR not less than 175 m;

(4) Category IIIB (CAT IIIB): a DH lower than 15 m (50 ft) or no DH and an RVR less than 175 m but not less than 50 m; and

(5) Category IIIC (CAT IIIC): no DH and no RVR limitations.

Where DH and RVR fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation, or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).

The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation, the required visual reference is the runway environment.

GM1 Article 2(97) Night

ED Decision 2013/013/R

To enable practical application of the definition of night, evening and morning civil twilight may be promulgated pertinent to the date and position.

GM1 Article 2(114) Runway-holding position

ED Decision 2013/013/R

In radiotelephony phraseology, the term 'holding point' is used to designate the runway-holding position.

GM2 Article 2(114) Runway-holding position

ED Decision 2013/013/R

Runway-holding positions also exist at aerodromes with no ATC. In such circumstances authorisation from an aerodrome control tower is not possible.

GM1 Article 2(121) Significant point

ED Decision 2013/013/R

There are three categories of significant points: ground-based navigation aid, intersection, and waypoint. In the context of this definition, intersection is a significant point expressed as radials, bearings and/or distances from ground-based navigation aids.

GM1 to Article 2(129a) Toy aircraft

ED Decision 2016/023/R

Directive 2009/48/EC (the Toy Safety Directive) requires that toys, including the chemicals they contain, shall not jeopardise the safety or health of users or third parties when they are used as intended or in a foreseeable way, bearing in mind the behaviour of children. The Toy Safety Directive additionally requires that toys made available on the market shall bear the CE marking. The CE marking indicates the conformity of the product with the Union legislation applying to the product and providing for CE marking.

GM1 Article 2(138) Unmanned free balloons

ED Decision 2013/013/R

Unmanned free balloons are classified as heavy, medium or light in accordance with the specifications contained in Appendix 2 to this Regulation.

GM1 Article 2(141) Visibility

ED Decision 2013/013/R

(a) The two distances which may be defined by a given visibility have different values in the air of a given extinction coefficient. Visibility based on seeing and recognising an object is represented by the meteorological optical range (MOR) (Article 2(141)(a)). Visibility based on seeing and identifying lights varies with the background illumination (Article 2(141)(b)).

(b) The definition of visibility applies to the observations of visibility in local routine and special reports, to the observations of prevailing and minimum visibility reported in METAR and SPECI, and to the observations of ground visibility.

Article 3 Compliance

Regulation (EU) No 923/2012

The Member States shall ensure compliance with the common rules and provisions set out in the Annex to this Regulation without prejudice to the flexibility provisions contained in Article 14 of the Regulation (EC) No 216/2008 and the safeguards contained in Article 13 of Regulation (EC) No 549/2004.

Article 4 Exemptions for special operations

Regulation (EU) 2016/1185

1. The competent authorities may, either on their own initiative or based on applications by the entities concerned, grant exemptions to individual entities or to categories of entities from any of the requirements of this Regulation for the following activities of public interest and for the training necessary to carry out those activities safely:
   (a) police and customs missions;
   (b) traffic surveillance and pursuit missions;
   (c) environmental control missions conducted by, or on behalf of public authorities;
   (d) search and rescue;
   (e) medical flights;
   (f) evacuations;
   (g) fire fighting;
   (h) exemptions required to ensure the security of flights by heads of State, Ministers and comparable State functionaries.
2. The competent authority authorising these exemptions shall inform EASA of the nature of the exemptions at latest two months after the exemption has been approved.
3. This Article is without prejudice to Article 3 and may be applied in the cases where the activities listed under paragraph 1, cannot be carried out as operational air traffic or where they otherwise may not benefit from the flexibility provisions contained in this Regulation.

   This Article shall also be without prejudice to helicopter operating minima contained in the specific approvals granted by the competent authority, pursuant to Annex V to Commission Regulation (EU) No 965/2012[1].

GM1 Article 4 Exemptions for special operations

ED Decision 2013/013/R

GENERAL

(a) The exemptions covered by Article 4 are intended for cases where the operation is of sufficient public interest to warrant allowing non-compliance with this Regulation, including the acceptance of the additional safety risks involved in such operations. Possible exemptions for normal operations, which are outside the scope of this Article, are covered by the specific provisions in the Annex (e.g. in provisions containing formulations such as 'as permitted by the competent authority', 'unless otherwise specified by the competent authority', etc.).

[1] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).

(b) Depending on the case, the competent authority may decide to grant the exemption to individual flights, groups of flights, or types of operations performed by specified operators.

(c) The exemptions may be granted either permanently, or as a temporary measure. Where the exemption is granted permanently, particular attention should be paid to ensuring that the conditions of the exemptions continue to be complied with over time.

(d) As referred to in Article 4(3), and depending on national rules, some of these operations may be performed under the Operational Air Traffic (OAT) rules in certain Member States and, thus, are entirely outside the scope of this Regulation.

GM2 Article 4 'Exemptions for special operations'

ED Decision 2016/023/R

The competent authority, when granting exemptions in accordance with Article 4, should consider not only case-by-case requests coming from individual entities, but also may grant general exemptions for groups of entities entitled to carry out the listed activities.

Article 4a Very-high frequency (VHF) emergency frequency

Regulation (EU) 2020/469

1. Without prejudice to paragraph 2, Member States shall ensure that the VHF emergency frequency (121.500 MHz) is only used for emergency purposes specified in point SERA.14095(d) of the Annex.

2. Member States may exceptionally allow the use of the VHF emergency frequency referred to in paragraph 1 for other purposes than those specified in point SERA.14095(d) of the Annex, if those are limited to what is necessary to achieve their aim and in order to reduce the impact upon aircraft in distress or emergency and on the operations of air traffic services units.

Article 5 Differences

Regulation (EU) No 923/2012

1. Further to the entry into force of this Regulation and at the latest by the date of its applicability, the Member States shall:

   (a) formally notify ICAO that all previously notified differences with respect to ICAO Standards and recommended practices that are covered by this Regulation are withdrawn, with the exception of those relating to essential security and defence policy interests of the Member States in accordance with Article 13 of Regulation (EC) No 549/2004;

   (b) notify ICAO of the commonly agreed differences contained in the supplement to the Annex to this Regulation.

2. In accordance with Annex 15 to the Chicago Convention, each Member State shall publish through its Aeronautical Information Publication the commonly agreed differences notified to ICAO in accordance with point (b) of paragraph 1 of this Article, as well as any other provisions necessitated by local air defence and security considerations in accordance with point (a) of paragraph 1 of this Article.

Article 6 Monitoring of amendments

Regulation (EU) No 923/2012

1. Further to the entry into force of this Regulation, the Commission shall establish, with the support of Eurocontrol and EASA, a permanent process:

   (a) to ensure that any amendments adopted under the framework of the Chicago Convention which are of relevance with respect to the scope of this Regulation are monitored and analysed; and

   (b) where necessary, to develop proposals for amendments to the Annex to this Regulation.

2. The provisions of Article 5 of this Regulation relating to the withdrawal and notification of differences and publication in the Aeronautical Information Publication and Article 7 regarding amendments to the Annex shall apply as appropriate.

Article 7 Amendments to the Annex

Regulation (EU) No 923/2012

1. The Annex shall be amended in accordance with Article 5(3) of Regulation (EC) No 549/2004.

2. The amendments referred to in paragraph 1 may include, but shall not be limited to, amendments required to ensure consistency of legal provisions during the future extension of this Regulation to contain the relevant provisions of other ICAO annexes and documents than Annex 2 or changes stemming from updates of those ICAO annexes and documents themselves or from changes to any relevant Union Regulations.

Article 8 Transitional and additional measures

Regulation (EU) No 923/2012

1. Member States that have adopted prior to the entry into force of this Regulation additional provisions complementing an ICAO Standard shall ensure that those are compliant with this Regulation.

2. For the purpose of this Article, such additional provisions complementing an ICAO Standard shall not constitute a difference under the Chicago Convention. The Member States shall publish such additional provisions as well as any matters left to the decision of a competent authority under this Regulation, through their aeronautical information publications. They shall also inform the Commission and EASA at the latest two months after entry into force of this Regulation, or when the additional provision has been adopted.

GM1 Article 8.2 Transitional and additional measures

ED Decision 2016/023/R

Without prejudice to its publication in other relevant sections of the Aeronautical Information Publication (AIP), information pertaining to Article 8.2 should be grouped and published in the national AIP section GEN 1.6.

Examples:

(a) If the competent authority decides to permit VFR flights at night in accordance with SERA.5005(c), general information for the permission should be published in the AIP section GEN 1.6 with reference to the section in the AIP where the details for the conditions applicable for VFR flights at night are published;

(b) If the competent authority designates certain parts of airspace as Radio Mandatory Zones (RMZs) and/or as Transponder Mandatory Zones (TMZs) in accordance with SERA.6005, the general information for such designation should be published in the AIP section GEN 1.6 with reference to the section in the AIP where the details for the established RMZs and/or TMZs are published;

(c) If the competent authority selects separation minima in accordance with SERA.8010(c)(2), general information for such selection should be published in AIP section GEN 1.6 with reference to the section in the AIP where the details for the these minima are published.

It should be noted that the above examples do not cover all possible cases which may require publication of information relevant to Article 8.2 in the national AIP section GEN 1.6.

Article 9 Safety requirements

Regulation (EU) No 923/2012

Further to the entry into force of this Regulation and without prejudice to Article 7, Member States shall, in order to maintain or enhance existing safety levels, ensure that, within the context of a safety management process addressing all aspects of the implementation of this Regulation, a safety assessment on the implementation plan, including hazard identification, risk assessment and mitigation, is conducted, preceding the actual changes to the previously applied procedures. Such mitigation may include the application of Article 3.

Article 10 Amendments to Regulations (EC) No 730/2006, (EC) No 1033/2006, (EC) No 1794/2006, (EC) No 1265/2007, (EU) No 255/2010 and Implementing Regulation (EU) No 1035/2011

Regulation (EU) No 923/2012

1. Regulation (EC) No 730/2006 is amended as follows:

(a) Article 2(3) and (4) shall be replaced by the following:

'3. "IFR" means the symbol used to designate instrument flight rules;

4. "VFR" means the symbol used to designate visual flight rules.'

2. Regulation (EC) No 1033/2006 is amended as follows:

(a) Article 2(2), point 8, shall be replaced by the following:

'8. "IFR" means the symbol used to designate instrument flight rules.';

(b) Article 3(1) shall be replaced by the following:

'1. The provisions specified in the Annex shall apply to the submission, acceptance and distribution of flight plans for every flight subject to this Regulation and to all changes to a key item in a flight plan in the pre-flight phase in accordance with this Regulation.';

(c) the heading and first indent of the Annex shall be replaced by the following:

'PROVISIONS REFERRED TO IN ARTICLE 3(1)

1. Section 4 of Commission Implementing Regulation (EU) No 923/2012[1].'

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

3. Regulation (EC) No 1794/2006 is amended as follows:

(a) Article 2(c) and (d) shall be replaced by the following:

'(c) "IFR" means the symbol used to designate instrument flight rules;

(d) "VFR" means the symbol used to designate visual flight rules.'.

4. Regulation (EC) No 1265/2007 is amended as follows:

(a) Article 2(5) shall be replaced by the following:

'5. "flights operated under visual flight rules" (VFR flights) means any flights conducted in accordance with visual flight rules.'.

5. Regulation (EU) No 255/2010 is amended as follows:

(a) Article 2(3) shall be replaced by the following:

'3. "IFR" means the symbol used to designate instrument flight rules'.

6. Implementing Regulation (EU) No 1035/2011 is amended as follows:

(a) the reference in Annex II, point 4(a), to 'Annex 2 on rules of the air in its 10th edition of July 2005' shall be replaced by a reference to 'Implementing Regulation (EU) No 923/2012';

(b) the reference in Annex II, point 4(c), to 'Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B' shall be amended by adding at the end of that sentence 'and Implementing Regulation (EU) No 923/2012 as applicable.';

(c) the reference in Annex III, point 2(b), to 'Annex 11 on air traffic services in its 13th edition of July 2001, including all amendments up to No 47-B' shall be amended by adding at the end of that sentence 'and Implementing Regulation (EU) No 923/2012 as applicable;'

Article 11 Entry into force

Regulation (EU) No 923/2012

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 4 December 2012.

2. By way of derogation from the second subparagraph of paragraph 1, Member States may decide not to apply the provisions of this Regulation until 4 December 2014.

When a Member State makes use of that possibility, it shall notify to the Commission and EASA in accordance with Article 12(1) of Regulation (EC) No 549/2004, the reasons for that derogation, its duration, as well as the envisaged and related timing of implementation of this Regulation.

Regulation (EU) No 923/2012

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 26 September 2012.

For the Commission
The President
José Manuel BARROSO

ANNEX: RULES OF THE AIR

SECTION 1 FLIGHT OVER THE HIGH SEAS

SERA.1001 General

Regulation (EU) No 923/2012

(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 Subject

Regulation (EU) 2016/1185

Without prejudice to SERA.1001 above, this annex addresses, in accordance with Article 1, in particular 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 annex addresses also the actions of the Competent Authorities of the Member States, Air Navigation Service Providers (ANSP), aerodrome operators and the relevant ground personnel engaged in aircraft operations.

SERA.2005 Compliance with the rules of the air

Regulation (EU) No 923/2012

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.

GM1 SERA.2005 Compliance with the rules of the air

ED Decision 2020/007/R

APPLICABLE LOCAL PROVISIONS

Applicable local provisions include local aerodrome regulations that are published in the relevant Aeronautical Information Publications (AIPs).

Such local aerodrome regulations may contain requirements for the operation of the aircraft transponder on the movement area of an aerodrome with the intent to ensure provision of surveillance data to the air traffic services unit providing services at the aerodrome, as well as other aerodrome units (e.g. apron management services).

GM1 SERA.2005(b) Compliance with the rules of the air

ED Decision 2013/013/R

GENERAL

When determining whether to operate in accordance with the visual flight rules or the instrument flight rules, a pilot may elect to fly in accordance with instrument flight rules in visual meteorological conditions, or may be required to do so by the competent authority.

SERA.2010 Responsibilities

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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).

GM1 SERA.3105 Minimum heights

ED Decision 2013/013/R

MINIMUM HEIGHTS ESTABLISHED BY THE COMPETENT AUTHORITY ABOVE THE REQUIRED MINIMUM HEIGHTS

In cases where it is considered that the minimum heights specified in SERA.5005 and SERA.5015 are not sufficient, the competent authority may establish appropriate structures, such as controlled, restricted or prohibited airspace, and define specific conditions through national arrangements. In all cases, the related Aeronautical Information Publication (AIP) and charts should be made easy to comprehend for airspace users.

GM2 SERA.3105 Minimum heights

ED Decision 2013/013/R

MINIMUM HEIGHTS PERMITTED BY THE COMPETENT AUTHORITY BELOW THE REQUIRED MINIMUM HEIGHTS

The permission from the competent authority to fly at lower levels than those stipulated in SERA.5005(f) and SERA.5015(b) may be granted either as a general exception for unlimited number of cases or for a specific flight upon specific request. The competent authority is responsible for ensuring that the level of safety resulting from such permission is acceptable.

SERA.3110 Cruising levels

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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 (0,5 nm) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft.

SERA.3140 Unmanned free balloons

Regulation (EU) No 923/2012

An unmanned free balloon shall be operated in such a manner as to minimise hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 2.

SERA.3145 Prohibited areas and restricted areas

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

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.

GM1 SERA.3201 General

ED Decision 2013/013/R

VIGILANCE ON BOARD AN AIRCRAFT

Regardless of the type of flight or the class of airspace in which the aircraft is operating, it is important that vigilance for the purpose of detecting potential collisions be exercised on board an aircraft. This vigilance is important at all times including while operating on the movement area of an aerodrome.

SERA.3205 Proximity

Regulation (EU) No 923/2012

An aircraft shall not be operated in such proximity to other aircraft as to create a collision hazard.

SERA.3210 Right-of-way

Regulation (EU) 2020/469

(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 critical and sensitive area(s) of radio navigation aids;

(B) subject to the provisions of point (iii), the method or methods to separate vehicles and taxiing aircraft shall be as specified by the air navigation service provider ('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 or taxiing;

(B) vehicles shall give way to other vehicles towing aircraft;

(C) vehicles shall give way to other vehicles in accordance with air traffic services unit instructions;

(D) notwithstanding the provisions of (A), (B) and (C), vehicles and vehicles towing aircraft shall comply with instructions issued by the aerodrome control tower.

GM1 SERA.3210(d)(3) Right-of-way

ED Decision 2020/007/R

UNSERVICEABLE STOP BARS — CONTINGENCY MEASURES

In situations where the lit stop bars cannot be turned off because of a technical problem, the following contingency measures may, inter alia, be considered:

(a) physically disconnecting the respective lit stop bar from its power supply;

(b) physically obscuring the lights of the lit stop bar;

(c) using a different route, until the malfunctioning system has been repaired.

In case of implementation of (a) or (b), a marshaller or a follow-me vehicle may need to be provided to lead the aircraft to cross the stop bar. Moreover, in case of implementation of (b), care should be exercised to ensure correct implementation of the measure to avoid misunderstandings by the flight crew.

In any case, the measures taken should not undermine the principle that a lit stop bar must not be crossed.

GM1 SERA.3210(d)(4)(ii)(B) Right-of-way

ED Decision 2020/007/R

CONTROL OF PERSONS AND VEHICLES AT AERODROMES

In prescribing the separation method(s) between vehicles and taxiing aircraft, the availability of lighting, markings, signals and signage should normally be taken into account.

SERA.3215 Lights to be displayed by aircraft

Regulation (EU) 2016/1185

(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.

GM1 SERA.3215(a);(b) Lights to be displayed by aircraft

ED Decision 2013/013/R

GENERAL

Lights fitted for other purposes, such as landing lights and airframe floodlights, may be used in addition to the anti-collision lights to enhance aircraft conspicuity.

AMC1 SERA.3215(a)(1) Lights to be displayed by aircraft

ED Decision 2013/013/R

BALLOONS LIGHTS

The anti-collision light required for free manned balloons which are certified for VFR at night in accordance with CS 31HB/GB.65 Night lighting should be considered as acceptable means to comply with SERA.3215(a)(1).

GM1 SERA.3215(a)(1) Lights to be displayed by aircraft

ED Decision 2013/013/R

BALLOONS LIGHTS

The technical specifications that such anti-collision lights specified in AMC1 SERA 3215(a)(1) need to meet can be found in the special conditions 'SC D-01 31HB_GB External and Internal Lights for Free Balloon Night Flight Issue 2'[1].

SERA.3220 Simulated instrument flights

Regulation (EU) No 923/2012

An aircraft shall not be flown under simulated instrument flight conditions unless:

(a) fully functioning dual controls are installed in the aircraft; and

(b) 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.

GM1 SERA.3220(b) Simulated instrument flights

ED Decision 2013/013/R

SAFETY PILOT

(a) For the purposes of this rule a safety pilot is a pilot who holds a licence which entitles him/her to act as pilot-in-command of the aircraft and is able and prepared to take control of the aircraft at any time during the flight. The safety pilot will maintain lookout, or a competent observer in case the safety pilot does not have full vision of each side of the aircraft, and avoid collisions on behalf of the person flying under simulated instrument conditions.

(b) A control seat is a seat which affords the person sitting in it sufficient access to the flying controls so as to enable him/her to fly the aircraft unimpeded.

[1] This special condition can be found in 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

SERA.3225 Operation on and in the vicinity of an aerodrome

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

(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.

GM1 SERA.3230 Water operations

ED Decision 2013/013/R

INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

In addition to the provisions of SERA.3230, rules set forth in the International Regulations for Preventing Collisions at Sea, developed by the International Conference on Revision of the International Regulations for Preventing Collisions at Sea (London, 1972), may be applicable in certain cases.

GM1 SERA.3230(b) Water operations

ED Decision 2013/013/R

LIGHTS TO BE DISPLAYED BY AIRCRAFT ON THE WATER

The International Regulations for Preventing Collisions at Sea specify that the rules concerning lights shall be complied with from sunset to sunrise. Any lesser period between sunset and sunrise established in accordance with SERA.3230(b) cannot, therefore, be applied in areas where the International Regulations for Preventing Collisions at Sea apply, e.g. on the high seas.

CHAPTER 3 SIGNALS

SERA.3301 General

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

(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 utilised 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.

GM1 SERA.3401(d) General

ED Decision 2013/013/R

TIME IN AIR TRAFFIC SERVICES

In most cases the correct time is obtained through alternative arrangements. The existence of such arrangements should be indicated in the State Aeronautical Information Publication (AIP).

SECTION 4 FLIGHT PLANS

SERA.4001 Submission of a flight plan

Regulation (EU) 2016/1185

(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) Unless a shorter period of time has been prescribed by the competent authority for domestic VFR flights, 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 60 minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate ATS unit at least 10 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.

GM1 SERA.4001 Submission of a flight plan

ED Decision 2013/013/R

GENERAL

(a) A flight plan may cover only part of a flight, as necessary, to describe that portion of the flight or those manoeuvres which are subject to air traffic control.

(b) The term 'submit a flight plan' refers to the action by the pilot or the operator to provide ATS with flight plan information. The term 'filed flight plan' refers to the flight plan as received and accepted by ATS whereas 'transmit a flight plan' refers to the action by a pilot to submit the flight plan, or submit abbreviated flight plan by radiotelephony to the ATS unit concerned.

AMC1 SERA.4001(c) Submission of a flight plan

ED Decision 2016/023/R

In cases where no air traffic services (ATS) reporting office has been established, the flight plan should be submitted to the ATS unit performing the functions of such an office, or via approved direct methods as indicated in the aeronautical information publication (AIP).

SERA.4005 Contents of a flight plan

Regulation (EU) No 923/2012

(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.

GM1 SERA.4005(a) Contents of a flight plan

ED Decision 2013/013/R

ABBREVIATED FLIGHT PLAN

An abbreviated flight plan transmitted in the air by radiotelephony for the crossing of controlled airspace, or any other areas or routes designated by the competent authority, normally contains, as a minimum: call sign, type of aircraft, point of entry, point of exit and level. Additional elements may be required by the competent authority.

GM2 SERA.4005(a) Contents of a flight plan

ED Decision 2016/023/R

INFORMATION ABOUT THE OPERATOR IN THE FLIGHT PLAN IN CASE OF PROVIDING ALERTING SERVICE

According to ICAO Annex 11, an ATS unit shall, when practicable, inform the aircraft operator when an alerting service is provided to an aircraft. In order to facilitate quick and effective coordination, it is advisable to provide in the flight plan (item 18 'Other information') information sufficient to enable the ATS unit to contact the on-duty staff of the aircraft operator if such information has not been provided to the ATS unit by other means.

SERA.4010 Completion of a flight plan

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

(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.

GM1 SERA.4020 Closing a flight plan

ED Decision 2013/013/R

ARRIVAL REPORTS

Whenever an arrival report is required, failure to comply with the provisions of SERA.4020 may cause serious disruption in the air traffic services and incur great expenses in carrying out unnecessary search and rescue operations.

SECTION 5 VISUAL METEOROLOGICAL CONDITIONS, VISUAL FLIGHT RULES, SPECIAL VFR AND INSTRUMENT FLIGHT RULES

SERA.5001 VMC visibility and distance from cloud minima

Regulation (EU) 2016/1185

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 higher	A (**) B C D E F G	5 km	1500 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	1500 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.

SERA.5005 Visual flight rules

Regulation (EU) 2016/1185

(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) 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) AMSL or 300 m (1 000 ft) above terrain, whichever is the higher, the pilot shall maintain continuous sight of the surface; and

(iv) [Deleted.]

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

(4) [Deleted.]

(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) VFR flights shall not be operated:

(1) at transonic and supersonic speeds unless authorised by the competent authority;

(2) above FL 195. Exceptions to this requirement are the following:

(i) an airspace reservation has been established, where practical, by the Member States, in which VFR flights may be allowed; or

(ii) airspace up to and including flight level 285, when VFR traffic in that airspace has been authorised by the responsible ATS unit in accordance with the authorisation procedures established by the Member States and published in the relevant aeronautical information publication.

(e) Authorisation 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.

(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 (3000 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.

GM1 SERA.5005(c)(3)(iii) Visual flight rules

ED Decision 2016/023/R

NIGHT VFR ON TOP

When flying in airspace classes B, C, D, E, F, or G, more than 900 m (3 000 ft) above mean sea level (MSL) or 300 m (1 000 ft) above terrain, whichever is higher, the pilot may elect to fly above a cloud layer (VFR on top). When making the decision on whether to fly above or below a cloud at night, consideration should be given at least but not limited to the following:

(a) The likelihood of weather at destination allowing a descent in visual conditions;

(b) Lighting conditions below and above the cloud layer;

(c) The likelihood of the cloud base descending, if flight below cloud is chosen, thus resulting in terrain clearance being lost;

(d) The possibility of flight above the cloud leading to flight between converging cloud layers;

(e) The possibility of successfully turning back and returning to an area where continuous sight of surface can be maintained; and

(f) The possibilities for the pilot to establish their location at any point of the route to be flown, taking into consideration also the terrain elevation and geographical and man-made obstacles.

AMC1 SERA.5005(f) Visual flight rules

ED Decision 2013/013/R

VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY

The competent authority should specify the conditions under which the permission is or may be granted, including the minimum heights above the terrain, water or the highest obstacle within a radius of 150 m (500 ft) from an aircraft practising forced landings, a balloon or an aircraft executing ridge or hill soaring.

GM1 SERA.5005(f) Visual flight rules

ED Decision 2013/013/R

VFR MINIMUM HEIGHTS — PERMISSION FROM THE COMPETENT AUTHORITY

Subject to an appropriate safety assessment, permission from the competent authority may also be granted for cases like:

(a) aircraft operating in accordance with the procedure promulgated for the notified route being flown;

(b) helicopters operating at a height that will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface;

(c) aircraft picking up or dropping tow ropes, banners or similar articles at an aerodrome;

(d) any other flights not specified above, where specific exemption is required to accomplish a specific task.

SERA.5010 Special VFR in control zones

Regulation (EU) 2016/1185

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, but not limited to, police, medical, search and rescue operations and fire-fighting flights, the following additional conditions shall be applied:

(a) such special VFR flights may be conducted during day only, unless otherwise permitted by the competent authority;

(b) 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) fly at a 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

(c) an air traffic control unit shall not issue a special VFR clearance to aircraft to 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 ground visibility is less than 1 500 m or, for helicopters, less than 800 m;

(2) the ceiling is less than 180 m (600 ft).

GM1 SERA.5010 Special VFR in control zones

ED Decision 2016/023/R

The list of type of operations subject to permit by the competent authority to deviate from the requirements for special visual flight rules (VFR) flights is not exhaustive. The competent authority may grant a permit for other kind of helicopter operations such as power line inspections, helicopter hoist operations, etc.

GM1 SERA.5010(b)(2) Special VFR in control zones

ED Decision 2016/023/R

When assessing the prevailing flight visibility, the pilots should use their best judgement. The assessment should be based, for example, on the pilot's overall flight experience, knowledge of local conditions and procedures, visible landmarks, etc. Furthermore, the pilot should possess the latest weather observations and forecasts.

AMC1 SERA.5010(b)(3) Special VFR in control zones

ED Decision 2016/023/R

SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

The 140 kt-speed should not be used by helicopters operating at a visibility below 1 500 m. In such case, a lower speed appropriate to the actual conditions should be applied by the pilot.

GM1 SERA.5010(b)(3) Special VFR in control zones

ED Decision 2013/013/R

SPEED LIMIT TO BE APPLIED BY HELICOPTER PILOTS

The 140 kt speed is to be considered as an absolute maximum acceptable speed in order to maintain an acceptable level of safety when the visibility is 1 500 m or more. Lower speeds should be applied according to elements such as local conditions, number and experience of pilots on board, using the guidance of the table below:

Visibility (m)	Advisory speed (kt)
800	50
1 500	100
2 000	120

GM1 SERA.5010(c) Special VFR in control zones

ED Decision 2016/023/R

When the reported ground visibility at the aerodrome is less than 1 500 m, ATC may issue a special VFR clearance for a flight crossing the control zone and not intending to take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or aerodrome traffic circuit when the flight visibility reported by the pilot is not less than 1 500 m, or, for helicopters, not less than 800 m.

SERA.5015 Instrument flight rules (IFR) — Rules applicable to all IFR flights

Regulation (EU) 2016/1185

(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 (1), 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 ATS unit. No invitation to change from IFR flight to VFR flight shall be made by ATS either directly or by inference.

GM1 SERA.5015(b) Instrument flight rules (IFR) — Rules applicable to all IFR flights

ED Decision 2013/013/R

MINIMUM LEVELS

When determining which are the highest obstacles within 8 km of the estimated position of the aircraft, the estimate will take account of the navigational accuracy which can be achieved on the relevant route segment, having regard to the navigational facilities available on the ground and in the aircraft.

GM1 SERA.5015(c)(3) Instrument flight rules (IFR) — Rules applicable to all IFR flights

ED Decision 2016/023/R

No reply, other than the acknowledgment 'IFR FLIGHT CANCELLED AT ... (time)', should normally be made by an ATS unit.

SERA.5020 IFR — Rules applicable to IFR flights within controlled airspace

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

(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.

(b) 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.

(c) 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.

GM1 SERA.5025(a) IFR — Rules applicable to IFR flights outside controlled airspace

ED Decision 2013/013/R

CRUISING LEVELS

Although an IFR flight operating in level cruising flight outside controlled airspace is to be flown at a cruising level appropriate to its track, as specified in the table of cruising levels, this does not preclude the use of cruise climb techniques.

GM1 SERA.5025(c) IFR — Rules applicable to IFR flights outside controlled airspace

ED Decision 2013/013/R

POSITION REPORTS

Aircraft electing to use the air traffic advisory service whilst operating under IFR within specified advisory airspace are expected to comply with the provisions of 'Section 8 — Air traffic Control Service', except that the flight plan and changes thereto are not subject to clearances and that two-way communication will be maintained with the unit providing the air traffic advisory service.

SECTION 6 AIRSPACE CLASSIFICATION

SERA.6001 Classification of airspaces

Regulation (EU) No 923/2012

(a) Member States shall designate airspace in accordance with the following airspace classification and in accordance with Appendix 4:

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

(2) *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.

(3) *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.

(4) *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.

(5) *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.

(6) *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.

(7) *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.

(8) Implementation of Class F shall be considered as a temporary measure until such time as it can be replaced by an alternative classification.

(b) The designation of the airspace classification shall be appropriate to the needs of the Member States, except that all airspace above FL 195 shall be classified as Class C airspace.

AMC1 SERA.6001 Classification of airspaces

ED Decision 2013/013/R

GENERAL

Where ATS airspaces adjoin vertically, i.e. one above the other, flights at a common level should comply with the requirements of, and be given services applicable to, the less restrictive class of airspace.

GM1 SERA.6001 Classification of airspaces

ED Decision 2013/013/R

GENERAL

(a) Class B airspace is considered less restrictive than Class A airspace; Class C airspace less restrictive than Class B airspace, etc.

(b) The speed limitation of 250 kt for VFR flights in airspace Classes C, D, E, F, G and for IFR flights in airspace Classes D, E, F, G is intended to facilitate visual acquisition of flights which are not separated.

(c) Wherever there is a need to accommodate within a given airspace class operations compatible with a less restrictive class, the following may be used:

(1) reclassification of the airspace concerned;

(2) redesigning the volume of airspace concerned by defining airspace restrictions or reservations, or subvolumes of less restrictive classes of airspace (e.g. corridors).

AMC1 SERA.6001(a)(4);(5);(6);(7) Classification of airspaces

ED Decision 2013/013/R

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY

Approval by the competent authority of an alleviation of the 250 kt speed limitation below 3 050 m (10 000 ft) should be based on a safety assessment. The conditions for granting such alleviation should be specified in the Member State Aeronautical Information Publication (AIP).

GM1 SERA.6001(a)(4);(5);(6);(7) Classification of airspaces

ED Decision 2013/013/R

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY

(a) The following should, as a minimum, be considered when developing the safety assessment:

(1) air traffic, airspace classes requirements, and airspace design, the procedures designed for the airspace, and the potential use of clearances to maintain own separation as described in GM1 to SERA.8005(b);

(2) the minimum safe speed stated in the approved Aircraft Flight Manual (AFM) of the relevant aircraft types.

(b) The safety assessment should be developed in coordination with the relevant airspace users.

(c) Coordination should be ensured with the affected airspace users who should provide the data necessary for the development of the safety assessment.

(d) The competent authority should ensure that the aircraft types eligible for such alleviation are specified in the Member State Aeronautical Information Publication.

GM2 SERA.6001(a)(4);(5);(6);(7) Classification of airspaces

ED Decision 2013/013/R

SPEED LIMITATION — SAFETY ASSESSMENT AND APPROVAL BY THE COMPETENT AUTHORITY

(a) For localised alleviations from the speed limitation, the safety assessment is normally conducted by the ATS provider and is subject to approval by the competent authority.

(b) Where alleviation is applied universally across the airspace of the Member State, the competent authority should ensure that appropriate safety assessment has been conducted.

AMC1 SERA.6001(a)(8) Classification of airspaces

ED Decision 2013/013/R

GENERAL

Class F airspace should only be implemented where the air traffic services are inadequate for the provision of air traffic control, and the limited advice on collision hazards otherwise provided by flight information service will not be adequate. Where air traffic advisory service is implemented, this should be considered as a temporary measure only until such time as it can be replaced by air traffic control service or, in cases where the traffic situation changes such that advisory service is no longer required, replaced by flight information service.

GM1 SERA.6001(a)(8) Classification of airspaces

ED Decision 2013/013/R

DURATION OF TEMPORARY MEASURE

(a) When establishing Class F airspace, its intended temporary duration after which it should be replaced by an alternative classification should be specified in the AIP of the Member State.

(b) The intended temporary duration of Class F airspace should not be longer than 3 years.

EXAMPLE

(c) Certain CTR airspace may change its classification on a daily basis (e.g. from 06:00 to 20:00 the airspace is classified as Class A, and from 20:00 until 23:59 and from 00:00 until 05:59 is classified as Class F). In this case, the duration of these arrangements should not exceed 3 years.

SERA.6005 Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

Regulation (EU) 2021/666

(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)

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) U-space airspace

Manned aircraft operating in airspace designated by the competent authority as a U-space airspace, and not provided with an air traffic control service by the ANSP, shall continuously make themselves electronically conspicuous to the U-space service providers.

(d) Airspaces designated as radio mandatory zone, transponder mandatory zone or U-space airspace shall be duly promulgated in the aeronautical information publications.

AMC1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

ED Decision 2022/024/R

MEANS OF TRANSMISSION OF INFORMATION AND INFORMATION TO BE TRANSMITTED

(a) Manned aircraft should transmit information through one or more of the following means to continuously make themselves electronically conspicuous to U-space service providers:

(1) A certified ADS-B OUT system compliant with ICAO Annex 10 Volume IV Chapter 5 (Mode-S Extended Squitter).

(2) A certified ADS-B OUT system compliant with ICAO Annex 10 Volume III Chapter 12 (Universal Access Transceiver) 12 months after its implementation and deployment for that purpose in all Member States.

(3) A system that transmits the information specified in Appendix 1 to this AMC using:

(i) a short-range device (SRD) 860 frequency band, and the information is transmitted in compliance with the format as documented in technical specification ADS-L 4 SRD-860;

(ii) standardised mobile telecommunication network services coordinated for aerial use in the relevant decisions of the Electronic Communication Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT), and the information is transmitted in compliance with the format as documented in technical specification ADS-L 4 MOBILE. The aircraft operator using application-based service should ensure that all other applications or functions that might run in the background are switched off or made inactive to limit in-flight transmissions to only those necessary to minimise interference through unpredictable data upload.

This option becomes applicable 6 months after the publication of the technical specification ADS-L 4 MOBILE.

The systems used for transmission in accordance with points (3)(i) and (ii) should bear an appropriate CE marking, and be either installed on the aircraft with the installation approved by the competent authority or carried on board the aircraft as non-installed equipment.

(b) The information specified in Appendix 1 to this AMC, and which is transmitted through a system referred to in points (3)(i) and (ii), shall be transmitted in a machine-readable format accessible to U-space service providers without any restrictions.

Appendix 1 to AMC1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

ED Decision 2022/024/R

ADS-L MESSAGE GENERATION FUNCTION

(a) This AMC details the minimum set of parameters that should be transmitted, and a set of parameters that may be optionally transmitted.

(b) All parameters should originate from a position source or from the system configuration. Each ADS-L message should include an identifier unique to the transmission source.

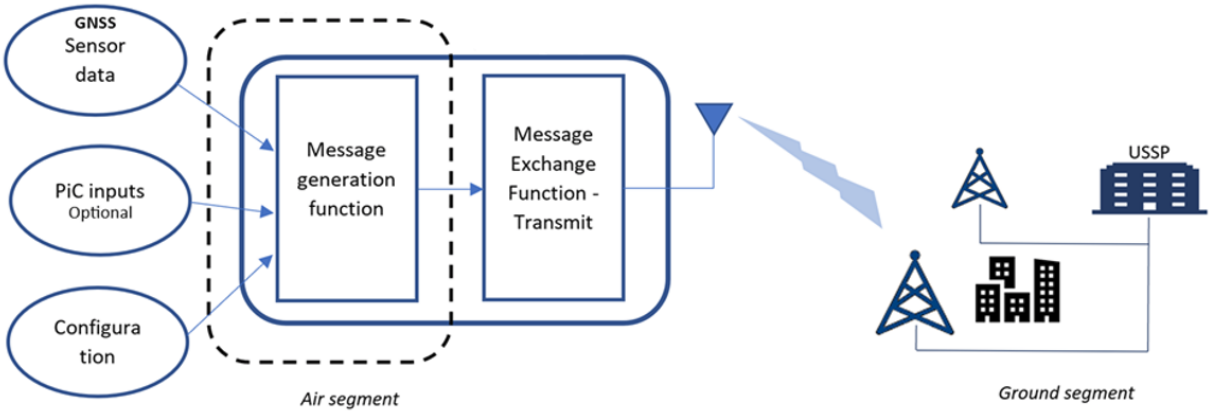


Figure 1: The scope of the ADS-L message generation function (dashed line) as specified in Appendix 1 to AMC1 to SERA.6005(c)

TRANSMITTED PARAMETERS

Data type	Parameter	Required/ optional	Remarks	Source
Aircraft address	Unique identifier / address	Required	Should be included in each transmission	Configuration
	Address type	Required	See the table below	Configuration
Time	Timestamp	Required		Position source
Aircraft identification	Aircraft category	Required	See the table below	Configuration
Emergency status	Emergency status	Optional	See the table below	Pilot-in-command inputs
Position	Latitude	Required	Reference WGS-84	Position source
	Longitude	Required	Reference WGS-84	Position source
	GNSS altitude	Required	Reference WGS-84 Height Above Ellipsoid (HAE)	Position source
Velocity/track	Ground speed	Required	Alternatively, north-south, east-west velocities	Position source
	Ground track	Required		Position source
	Vertical rate	Required		Position source
	Velocity accuracy	Optional	See the table below	Position source
Capabilities and status	Version	Required	To facilitate interoperability	Configuration
	Design assurance	Optional	See the table below	Configuration
	Horizontal position accuracy	Required	95 % confidence See table below	Position source
	Vertical position accuracy	Required	95 % confidence See the table below	Position source
	Navigation integrity	Optional	Containment radius (Rc) See table below	Position source
	Source integrity level	Optional	Probability that Rc is exceeded See the table below	Configuration

TABLES FOR REQUIRED PARAMETERS

Data type	Values
Address type	Reserved
	ICAO
	Unique identifier
	Reserved

Parameter	Values
Aircraft category	No emitter category information available
	Light fixed-wing (<7 031 kg / 15 500 lb)
	Small to heavy fixed-wing (≥7 031 kg / 15 500 lb)
	Light rotorcraft
	Heavy rotorcraft
	Glider/sailplane
	Lighter-than-air
	Ultralight
	Hang-glider
	Paraglider
	Parachutist/skydiver/wingsuit
	eVTOL/UAM
	UAS ‘open’ category
	UAS ‘specific’ category
	UAS ‘certified’ category
	Model plane
	Reserved

Parameter	95 % horizontal accuracy bound
	EPU ≥ 926 m (0.5 NM)
	EPU < 926 m (0.5 NM)
	EPU < 555.6 m (0.3 NM)
	EPU < 185.2 m (0.1 NM)
	EPU < 92.6 m (0.05 NM)
	EPU < 30 m
	EPU < 10 m
	EPU < 3 m

Data type	95 % geometric altitude accuracy
Vertical position accuracy	Unknown or > 150 m
	≤ 150 m
	≤ 45 m
	≤ 15 m

TABLES FOR OPTIONAL PARAMETERS

Parameter	Values
Emergency status	No emergency
	General emergency
	Lifeguard/medical emergency
	Minimum fuel (Energy)
	No communications
	Unlawful interference
	Downed aircraft
	Reserved

Parameter	Horizontal Figure of Merit for rate (HFOMr) values
Velocity accuracy	Unknown or ≥ 10 m/s
	< 10 m/s
	< 3 m/s
	< 1 m/s

Parameter	Software and hardware DAL
Design assurance	n/a
	D
	C
	B

Parameter	Rc
Navigation integrity	≥ 20 NM
	< 20 NM
	< 8 NM
	< 4 NM
	< 2 NM
	< 1 NM
	< 0.6 NM
	< 0.2 NM
	< 0.1 NM
	< 75 m
	< 25 m
	< 7.5 m

Parameter	Probability of exceeding Rc
Source integrity level	Unknown or > 1E-3 / FH
	≤ 1E-3 / FH
	≤ 1E-5 / FH
	≤ 1E-7 / FH

TRANSMISSION RATE

The *position* and *velocity/track* parameters should be transmitted at a rate of at least 1 Hz. The transmission of other parameters may be less frequent than 1 Hz, but not less frequent than 0.1 Hz.

ERROR CONTROL

There should be at least a digital error detection technique at one level of the transmission (e.g. cyclic redundancy check (CRC)). No specific error-control means are prescribed.

SECURITY

The transmission should be protected to ensure security and confidentiality of the exchanged parameters.

POSITION SOURCE

The *horizontal and vertical position* and *velocity/track* parameters should primarily be based on a GNSS source.

GM1 SERA.6005(c) Requirements for communications, SSR transponder and electronic conspicuity in U-space airspace

ED Decision 2022/024/R

POSITION SOURCE

It is recommended that the GNSS position source process more than one constellation and/or use SBAS augmentation if available.

USE OF THE 'HARDWARE AND SOFTWARE DAL' PARAMETER

The development assurance parameter is a provision to indicate the system's hardware and software development assurance levels (DALs), if applicable. Further information on DAL determination and use may be found in aeronautical standards for certification of software and hardware items, such as ED-80 and ED-12().

INSTALLED SYSTEMS

(a) Certified ADS-B OUT systems compliant with ICAO Annex 10 that are implemented and deployed for that purpose in all Member States.

The systems may be installed in accordance with CS-ACNS (Subpart D Section 4) or CS-STAN (Standard Change CS-SC005 *INSTALLATION OF AN ADS-B OUT SYSTEM COMBINED WITH A TRANSPONDER SYSTEM*), or AMC 20-24. The installation of the system should be approved by the competent authority.

(b) Systems using an SRD 860 frequency band or standardised mobile telecommunication network services coordinated for aerial use in Europe.

The installation of a system in an aircraft, for which EASA is the competent authority for the aircraft design, should be performed in accordance with the EASA aircraft design change processes or in accordance with CS-STAN (CS-SC0051 *INSTALLATION OF 'FLARM' EQUIPMENT*, and CS-SC0057 *INSTALLATION OF AN ELECTRONIC CONSPICUITY (EC) FUNCTION*).

(c) The installation of a system in an aircraft, for which an aviation competent authority is the authority for the aircraft design, should be performed in accordance with the aircraft design change processes defined by the relevant authority. Aviation competent authorities may make use of recognised standards (e.g. CS-STAN) for technically similar installations in aircraft specified in Annex I to Regulation (EU) 2018/1139.

DECLARATION OF COMPLIANCE

The manufacturer of a system referred to in points (a)(3)(i) and (ii) of AMC1 SERA.6005(c) may declare conformity of its system with point SERA.6005(c). The declaration should be supported by technical documentation showing compliance. Alternatively, the manufacturer may voluntarily ask for a technical evaluation of its system by a competent authority. Such declarations of conformity and technical evaluations may be used by aircraft operators to demonstrate to competent authorities compliance with point SERA.6005(c).

NON-INSTALLED EQUIPMENT

(d) The carriage of non-installed equipment on board the aircraft, for which EASA is the competent authority for the aircraft design, should comply with the applicable air operations requirements (points CAT.GEN.MPA.140, NCC.GEN.130, NCO.GEN.125, and SPO.GEN.130). The carriage of non-installed equipment on board the aircraft, for which an aviation competent authority is the authority for the aircraft design, should comply with the applicable air operations requirements defined by the relevant authorities. Aviation competent authorities may make use of the relevant EASA requirements for similar kinds of air operations with aircraft specified in Annex I to Regulation (EU) 2018/1139.

(e) The equipment should be set up on board the aircraft in such a way so as to limit transmission obscuration by the airframe, human body, or other structures and at the same time maximise the visibility of the transmitting antennas, including those on the ground.

MOBILE TELECOMMUNICATION SERVICES FOR AERIAL USE

(f) National and international roaming agreements rely on standardised roamed services (SMS, voice streaming, etc.), which cannot be automatically presumed for aerial services. Only the mobile telecommunication services concluded by the standardisation bodies for aerial use could be used by manned aircraft to make themselves electronically conspicuous to U-space service providers.

(g) There are country-specific restrictions for the aerial use of certain mobile telecommunication frequencies. Therefore, the frequencies used by aerial mobile telecommunication services should be consistent with the relevant decisions of the Electronic Communication Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT) as implemented by national telecommunication authorities.

MILITARY AND STATE AIRCRAFT OPERATIONS

(h) Although the amendment to Implementing Regulation (EU) No 923/2012 introduced by Implementing Regulation (EU) 2021/666 does not apply to military and State aircraft operations and training, these aircraft may fully or partially operate in the U-space airspace. Military and State organisations may reserve the right not to be electronically conspicuous to U-space service providers, taking both security and safety requirements into account.

(i) At national level, coordination between authorities in charge of civil and military/State aircraft should assess the risk of electronically non-conspicuous military and State aircraft operating in U-space airspace and may specify means by which the presence and or location of such aircraft may be communicated by the relevant operational units.

(j) In determining the designation of an area as U-space airspace, States should consider operations and training conducted with manned military and State aircraft in the airspace concerned and the ability or otherwise to be conspicuous, whether for technical or operational reasons.

SAFEGUARDS FOR CONTINUOUS TRANSMISSION

(k) U-space service providers may use the provisions of Article 18(h) of Implementing Regulation (EU) 2021/664 to inform the competent authority about any known irregularities in the continuous transmission of the systems that make manned aircraft electronically conspicuous to U-space service providers, particularly if such irregularities may negatively affect the provision of air traffic information services as referred to in Article 11 of that Regulation.

(l) Manned aircraft that operate in U-space airspace should use the provisions of Regulation (EU) No 376/2014 for reporting any known irregularities in the continuous transmission of the systems used for making them electronically conspicuous to U-space service providers.

(m) The competent authority should, in case of an urgent safety problem, determine a corrective action (including directives or recommendations) to be taken by a natural or a legal person, where this is necessary to safeguard the safety of traffic information service.

SECTION 7 AIR TRAFFIC SERVICES

SERA.7001 General — Objectives of the air traffic services

Regulation (EU) No 923/2012

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.

GM1 SERA.7001 General — Objectives of the air traffic services

ED Decision 2013/013/R

GENERAL

These provisions are general statements which represent high-level safety objectives to be met when providing ATS and which are the basis of all the provisions of this Part.

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

Regulation (EU) 2016/1185

(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.

AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

INFORMATION REGARDING TRAFFIC ON CONFLICTING PATH

(a) Information regarding traffic on a conflicting path should be given, whenever practicable, in the following form:

(1) relative bearing of the conflicting traffic in terms of the 12-hour clock;

(2) distance from the conflicting traffic in kilometres or nautical miles;

(3) direction in which the conflicting traffic appears to be proceeding; and

(4) level and type of aircraft or, if unknown, relative speed of the conflicting traffic, e.g. slow or fast.

(b) Pressure-altitude-derived level information, even when unverified, should be used in the provision of collision hazard information because such information, particularly if available from an otherwise unknown aircraft (e.g. a VFR flight) and given to the pilot of a known aircraft, could facilitate the location of a collision hazard. If the level information has not been verified, the accuracy of the information should be considered uncertain and the pilot should be informed accordingly.

GM1 to (a)(1) of AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

In cases where using the terms of the 12-hour clock is not practicable, like when the aircraft is turning, the direction of the unknown aircraft may be given by compass points, e.g. northwest, south, etc.;

GM1 to (a)(4) of AMC1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

The level may be described either as a flight level, altitude or height, or as a relative vertical distance from the aircraft provided with traffic information (e.g. 1 000 ft above or 1 000 ft below).

GM1 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2020/007/R

INFORMATION REGARDING TRAFFIC ON CONFLICTING PATH OUTSIDE CONTROLLED AIRSPACE

When an identified IFR flight operating outside controlled airspace is observed to be on a conflicting path with another aircraft, the pilot should, as far as practicable:

(a) be informed as to the need for collision avoidance action to be initiated, and if so requested by the pilot or if, in the opinion of the air traffic controller, the FIS officer or the AFIS officer, the situation warrants, a course of avoiding action should be suggested; and

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

GM2 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

The information presented on a situation display may be used to provide identified aircraft with information regarding any aircraft observed to be on a conflicting path with the identified aircraft, and suggestions or advice regarding avoiding action.

GM3 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

The provision of collision hazard information does not absolve pilots of VFR flights from their responsibilities for avoiding terrain/obstacles and for maintaining visual meteorological conditions.

GM4 SERA.7002(a)(1) Collision hazard information when ATS based on surveillance are provided

ED Decision 2016/023/R

Collision hazard information should be provided where practicable. This should be done taking account of the priorities related to various tasks, such as provision of separation in accordance with the airspace classification, as well as equipment and workload limitations.

SERA.7005 Coordination between the aircraft operator and air traffic services

Regulation (EU) No 923/2012

(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.

GM1 SERA.7005(a) Coordination between the aircraft operator and air traffic services

ED Decision 2013/013/R

GENERAL

The expression ‘due regard’ is meant to indicate that the air traffic services units, in their coordination with the aircraft operators, should take into account the obligations of the operators in accordance with the European Union rules on air operations, and provide them with the information they require to operate in accordance with those rules.

SECTION 8 AIR TRAFFIC CONTROL SERVICE

SERA.8001 Application

Regulation (EU) No 923/2012

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

Regulation (EU) 2020/469

(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 one or more of the following: clearances, instructions or 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 of operations on parallel or near-parallel runways as in point ATS.TR.255 of Annex IV to Commission Implementing Regulation (EU) 2017/373[1], or when a reduction in separation minima in the vicinity of aerodromes can be applied, separation by an ATC 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, except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or ATC 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 that level. Geometric height information shall not be used to establish vertical separation;

(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.

GM1 SERA.8005(a)(3) Operation of air traffic control service

ED Decision 2020/007/R

CLEARANCE FOR IMMEDIATE TAKE-OFF

In the interest of expediting traffic, a clearance for immediate take-off may be issued to an aircraft before it enters the runway. On acceptance of such clearance, the aircraft should taxi out to the runway and take off in one continuous movement.

GM1 SERA.8005(b) Operation of air traffic control service

ED Decision 2013/013/R

CLEARANCES TO MAINTAIN OWN SEPARATION

Clearances for a pilot to maintain own separation in respect of a specific portion of the flight in airspace Classes D and E below 3 050 m (10 000 ft) during climb or descent, during day in visual meteorological conditions are based on the fact that in those airspace classes a speed restriction of 250 kt is applied to all flights, allowing pilots of both aircraft to observe other flights in time to avoid collision.

GM2 SERA.8005(b) Operation of air traffic control service

ED Decision 2020/007/R

CLEARANCES TO FLY MAINTAINING OWN SEPARATION WHILE IN VISUAL METEOROLOGICAL CONDITIONS

(a) If there is a possibility that flight under visual meteorological conditions may become impracticable, an IFR flight should be provided with alternative instructions to be complied with in the event that flight in visual meteorological conditions cannot be maintained for the term of the clearance.

[1] Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

(b) The pilot of an IFR flight, on observing that conditions are deteriorating and considering that operation in visual meteorological conditions will become impossible, should inform air traffic control units before entering instrument meteorological conditions and should proceed in accordance with the alternative instructions given.

GM3 SERA.8005(b) Operation of air traffic control service

ED Decision 2020/007/R

CLEARANCES TO FLY MAINTAINING OWN SEPARATION WHILE IN VISUAL METEOROLOGICAL CONDITIONS

(a) The provision of vertical or horizontal separation by an air traffic control unit is not applicable in respect of any specified portion of a flight cleared subject to maintaining own separation and remaining in visual meteorological conditions. It is for the aircraft so cleared to ensure, for the duration of the clearance, that it is not operated in such proximity to other flights as to create a collision hazard.

(b) It is axiomatic that a VFR flight must remain in visual meteorological conditions at all times. Accordingly, the issuance of a clearance to a VFR flight to fly subject to maintaining own separation and remaining in visual meteorological conditions has no other object than to signify that, for the duration of the clearance, separation from other aircraft by air traffic control units is not provided.

(c) The objectives of the air traffic control service as prescribed in ATS.TR.100 of Regulation (EU) 2017/373 do not include prevention of collision with terrain. Pilots are responsible for ensuring that any clearances issued by air traffic control units are safe in this respect. When vectoring or assigning a direct routing not included in the flight plan, which takes an IFR flight off published ATS route or instrument procedure, the procedures in ATS.TR.235(a)(5) of Regulation (EU) 2017/373 apply.

AMC1 SERA.8005(c) Operation of air traffic control service

ED Decision 2020/007/R

VISUAL APPROACH

(a) Subject to the conditions described in point (b), clearance for an IFR flight to execute a visual approach may be requested by a flight crew or initiated by the air traffic controller. In the latter case, the concurrence of the flight crew should be required.

(b) An IFR flight should only be cleared to execute a visual approach, provided the pilot can maintain visual reference to the terrain and:

(1) the reported ceiling is at or above the level of the beginning of the initial approach segment for the aircraft so cleared; or

(2) the pilot reports at the level of the beginning of the initial approach segment or at any time during the instrument approach procedure that the meteorological conditions are such that with reasonable assurance a visual approach and landing can be completed.

(c) Except between aircraft performing successive visual approaches as described in point (d), separation should be provided between an aircraft cleared to execute a visual approach and other arriving and departing aircraft.

(d) For successive visual approaches, separation should be maintained by the air traffic controller until the pilot of a succeeding aircraft reports having the preceding aircraft in sight. The aircraft should then be instructed to follow and maintain own separation from the preceding aircraft.

(e) In case of aircraft performing successive visual approaches and instructed to maintain own separation as in point (d), and the distance between such aircraft is less than the appropriate wake turbulence minimum, the air traffic controller should issue a caution of possible wake turbulence.

GM1 to AMC1 SERA.8005(c) Operation of air traffic control service

ED Decision 2020/007/R

VISUAL APPROACH

The pilot-in-command of the aircraft concerned is responsible for ensuring that the spacing from a preceding aircraft of a heavier wake turbulence category is acceptable. If it is determined that additional spacing is required, the flight crew should inform the ATC unit accordingly, stating their requirements.

GM1 SERA.8005(c)(1) Operation of air traffic control service

ED Decision 2020/007/R

GEOMETRIC HEIGHT INFORMATION

Geometric height information is generated by airborne systems such as GPS or radio altimeters.

SERA.8010 Separation minima

Regulation (EU) No 923/2012

(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.

GM1 SERA.8010(b) Separation minima

ED Decision 2013/013/R

GENERAL

The purpose of this provision is to ensure, in the first case, compatibility on both sides of the line of transfer of traffic and, in the other case, adequate separation between aircraft operating on both sides of the common boundary.

SERA.8012 Application of wake turbulence separation

Regulation (EU) 2020/469

(a) Air traffic control units shall apply wake turbulence separation minima to aircraft in the approach and departure phases of flight in any of 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 it;

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

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

(b) Paragraph (a) shall not apply to arriving VFR flights and to arriving IFR flights executing visual approach when the aircraft has reported the preceding aircraft in sight and has been instructed to follow and maintain own separation from that aircraft. In those cases, the air traffic control unit shall issue caution for wake turbulence.

SERA.8015 Air traffic control clearances

Regulation (EU) 2020/469

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

(1) Clearances shall be issued solely for expediting and separating air traffic and be 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 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.

(6) When vectoring or assigning a direct routing not included in the flight plan, which takes an IFR flight off published ATS route or instrument procedure, an air traffic controller providing ATS surveillance service shall issue clearances such that the prescribed obstacle clearance exists at all times until the aircraft reaches the point where the pilot re-joins the flight plan route or joins a published ATS route or instrument procedure.

(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; and

(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 ATFM departure slot if applicable, approach or departure manoeuvres, communications and the time of expiry of the clearance.

(e) Read back of clearances, instructions 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.

(ea) 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.

(eb) Clearance related to altimetry

(1) For flights in areas where a transition altitude is established, the vertical position of the 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, the 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) Except when it is known that the aircraft has already received the information in a directed transmission, an QNH altimeter setting shall be included in:

(i) the descent clearance, when first cleared to an altitude below the transition level;

(ii) the approach clearance or the clearance to enter the traffic circuit;

(iii) the taxi clearance for departing aircraft.

(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 has been given clearance to land or where an aircraft has been informed that the runway is available for landing at AFIS aerodromes and that aircraft is completing its approach using atmospheric pressure at aerodrome elevation (QFE), the vertical position of that 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.

(ec) 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) the call sign;

(2) the condition;

(3) the clearance; and

(4) a brief reiteration of the condition.

(f) 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.

GM1 SERA.8015(a) Air traffic control clearances

ED Decision 2016/023/R

Clearances to VFR flights in airspace classes C and D do not imply any form of separation:

(a) in Class C — between VFR flights; and

(b) in Class D — between IFR and VFR flights or between VFR flights.

For the case of special VFR flights, refer to SERA.8005(b).

GM1 SERA.8015(b)(4) Air traffic control clearances

ED Decision 2013/013/R

OPERATION SUBJECT TO CLEARANCE — POTENTIAL RECLEARANCE IN FLIGHT

The intent of the provision relating to potential reclearance is to facilitate reclearance to a revised destination, normally beyond the filed destination aerodrome.

GM1 SERA.8015(d)(5) Air traffic control clearances

ED Decision 2013/013/R

CONTENT OF THE CLEARANCES — TIME OF EXPIRY

The time of expiry of the clearance indicates the time after which the clearance will be automatically cancelled if the flight has not been commenced.

GM1 SERA.8015(e)(1) ATC clearances

ED Decision 2020/007/R

CHANGE IN CLEARANCE REGARDING THE ROUTE

The nature of the change should include a description of the route and levels to the point where it joins the previously cleared route, or, if the aircraft will not rejoin the previous route, to the destination.

GM1 SERA.8015(e)(4) Air traffic control clearances

ED Decision 2013/013/R

READ-BACK OF CPDLC MESSAGES

When so indicated by local safety assessments, ANSP may require that the receipt of some of the CPDLC message types (in particular those addressing trajectory changes) be acknowledged by voice.

GM1 SERA.8015(f)(2) Air traffic control clearances

ED Decision 2016/023/R

PROVISIONS FOR CLEARANCES AND INSTRUCTIONS — ALTIMETRY

The provision of transition level may be accomplished by voice communications, ATIS broadcast or data link.

GM1 SERA.8015(f)(4) Air traffic control clearances

ED Decision 2013/013/R

COORDINATION OF CLEARANCES — DOWNSTREAM CLEARANCE

(a) In such cases it is assumed that contact of a downstream ATC unit is initiated by the pilot. Therefore, the rules require that the aircraft maintain the necessary two-way communication with the current ATC unit.

(b) In cases where an aircraft cannot maintain two-way communication whilst obtaining a downstream clearance, the pilot needs to seek the acceptance to leave momentarily the communication channel of the current ATC unit prior to contacting a downstream ATC unit.

GM1 SERA.8015(g) Air traffic control clearances

ED Decision 2016/023/R

CONDITIONAL CLEARANCES

An example of a conditional clearance is 'SCANDINAVIAN 941, BEHIND DC9 ON SHORT FINAL, LINE UP BEHIND'. This implies the need for the aircraft receiving the conditional clearance to identify the aircraft or vehicle causing the conditional clearance.

SERA.8020 Adherence to flight plan

Regulation (EU) 2016/1185

(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 point (1) shall be notified to the appropriate ATS 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 minutes from that notified to ATS or such other period of time as prescribed by the competent authority, a revised estimated time shall be notified as soon as possible to the appropriate ATS 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.

(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

Regulation (EU) 2016/1185

(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 at compulsory reporting points, pilots shall, unless automated position reporting is in effect, 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 the ATS surveillance identification is lost.

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

GM1 SERA.8025(a)(2) Position reports

ED Decision 2016/023/R

RESUMPTION OF CPDLC POSITION REPORTING

The resumption of controller–pilot data link communications (CPDLC) position reporting can be achieved through automatic dependent surveillance — contract (ADS-C).

SERA.8030 Termination of control

Regulation (EU) No 923/2012

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

Regulation (EU) 2016/1185

(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 take the necessary measures for the transposition of those provisions into Union law so as to establish common European procedures on communication failures by 31 December 2017 at the latest.

GM1 SERA.8035(a) Communications

ED Decision 2013/013/R

GENERAL

(a) In a HF environment, SELCAL or similar automatic signalling devices satisfy the requirement to maintain an air-ground voice communication watch.

(b) An aircraft may be permitted to communicate temporarily with a control unit other than the unit controlling the aircraft.

AMC1 SERA.8035 Communications

ED Decision 2016/023/R

ESTABLISHMENT OF PILOT–CONTROLLER COMMUNICATIONS

Direct pilot–controller communications should be established prior to the provision of ATS surveillance services unless special circumstances, such as emergencies, dictate otherwise.

AMC2 SERA.8035 Communications

ED Decision 2016/023/R

ACKNOWLEDGEMENT OF MESSAGES

(a) When a CPDLC emergency message is received, the controller shall acknowledge receipt of the message by the most efficient means available.

(b) Except as provided by (a), when a controller or pilot communicates via CPDLC, the response should be via CPDLC. When a controller or pilot communicates via voice, the response should be via voice.

SECTION 9 FLIGHT INFORMATION SERVICE

SERA.9001 Application

Regulation (EU) No 923/2012

(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

Regulation (EU) 2020/469

(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;

(7) information on abnormal aircraft configuration and condition;

(8) 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; and

(4) messages, including clearances, received from other air traffic services units to relay to aircraft.

(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.

(d) AFIS provided to flights shall include, in addition to relevant items outlined in points (a) and (b), the provision of the information concerning:

(1) collision hazards with aircraft, vehicles and persons operating on the manoeuvring area;

(2) the runway-in-use.

GM1 SERA.9005(a)(8) Scope of flight information service

ED Decision 2020/007/R

INFORMATION ON SPACE WEATHER

When available, information on space weather phenomena that have an impact on high-frequency radio communications, communications via satellite, GNSS-based navigation and surveillance systems, and/or pose a radiation risk to aircraft occupants at flight levels within the area of responsibility of the ATS unit should be transmitted to the affected aircraft.

GM1 SERA.9005(b)(1) Scope of flight information service

ED Decision 2016/023/R

INFORMATION RELATED TO WEATHER CONDITIONS AT DEPARTURE, DESTINATION, AND ALTERNATE AERODROMES

Pilots normally obtain information on the weather conditions from the appropriate office before the flight. When available, outstanding or safety-relevant information is normally provided by radio communication within 60 minutes from the aerodrome of destination unless the information has been made available through other means.

GM1 SERA.9005(b)(2) Scope of flight information service

ED Decision 2013/013/R

INFORMATION RELATED TO COLLISION HAZARDS

Information relating to collision hazards includes only known activities that constitute risks to the aircraft concerned. The availability of such information to air traffic services may sometimes be incomplete (e.g. limitations in radar or radio coverage, optional radio contact by pilots, limitations in the accuracy of reported information by pilots, or unconfirmed level of information) and, therefore, air traffic services cannot assume responsibility for its issuance at all times or for its accuracy.

SERA.9010 Automatic terminal information service (ATIS)

Regulation (EU) 2020/469

(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, the ATS unit shall without delay take one of the following actions:

(i) communicate to the aircraft any element of information which has to be updated;

(ii) instruct the aircraft to obtain the current ATIS information.

(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 (in degrees magnetic) 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[1] and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;

(14) present weather[1];

(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[1];

(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.

(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 (in degrees magnetic) 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[1] and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by

[1] 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.

operators, the indication of the runway and the section of the runway to which the information refers;

(14) present weather[1];

(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[1];

(16) air temperature;

(17) dew point temperature;

(18) altimeter setting(s);

(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 (in degrees magnetic) 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[1] and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;

(13) present weather[1];

[1] 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.

(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[1];

(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;

(19) trend forecast, when available; and

(20) specific ATIS instructions.

[1] 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.

SECTION 10 ALERTING SERVICE

SERA.10001 Application

Regulation (EU) 2016/1185

(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) Unless otherwise 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 the 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 ATS unit.

GM1 SERA.10001(b) Application

ED Decision 2016/023/R

The absence of an 'operations normal' message does not constitute a situation of urgency. In the absence of such a report, ATS should endeavour to contact the aircraft on available frequencies. A failure to contact the aircraft could lead to any type of measure including the declaration of 'uncertainty phase'.

SERA.10005 Information to aircraft operating in the vicinity of an aircraft in a state of emergency

Regulation (EU) No 923/2012

(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 General

Regulation (EU) 2016/1185

(a) [Deleted.]

(b) [Deleted.]

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

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

GM1 SERA.11001 General

ED Decision 2016/023/R

EMERGENCY DESCENT PROCEDURES

(a) When an aircraft operated as a controlled flight experiences sudden decompression or a malfunction requiring an emergency descent, the aircraft should, if able:

(1) initiate a turn away from the assigned route or track before commencing the emergency descent;

(2) advise the appropriate ATC unit as soon as possible of the emergency descent;

(3) set transponder to Code 7700 and select the emergency mode on the automatic dependent surveillance/controller–pilot data link communications (ADS/CPDLC) system, if applicable;

(4) turn on aircraft exterior lights;

(5) watch for conflicting traffic both visually and by reference to airborne collision avoidance system (ACAS) (if equipped); and

(6) coordinate its further intentions with the appropriate ATC unit.

(b) The aircraft is not to descend below the lowest published minimum altitude that will provide a minimum vertical clearance of 300 m (1 000 ft) or, in designated mountainous terrain, of 600 m (2 000 ft) above all obstacles located in the area specified.

(c) Immediately upon recognising that an emergency descent is in progress, ATC units are to acknowledge the emergency on radiotelephony.

In particular, when recognising that an emergency descent is in progress, ATC may, as required by the situation:

(1) suggest a heading to be flown, if able, by the aircraft carrying out the emergency descent in order to achieve separation from other aircraft concerned;

(2) state the minimum altitude for the area of operation, only if the level-off altitude stated by the pilot is below such minimum altitude, together with the applicable QNH altimeter setting; and

(3) as soon as possible, provide separation from conflicting traffic, or issue essential traffic information, as appropriate.

When deemed necessary, ATC will broadcast an emergency message, or cause such message to be broadcast, to other aircraft concerned to warn them of the emergency descent.

SERA.11005 Unlawful interference

Regulation (EU) 2016/1185

(a) [Deleted.]

(aa) 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.

(ab) 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) 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) When an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS 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.

AMC1 SERA.11005 Unlawful interference

ED Decision 2016/023/R

(a) Whenever unlawful interference with an aircraft is known or suspected or a bomb threat warning has been received, ATS units should promptly attend to requests by, or to anticipated needs of, the aircraft, including requests for relevant information relating to air navigation facilities, procedures and services along the route of flight and at any aerodrome of intended landing, and should take such action as is necessary to expedite the conduct of all phases of the flight.

ATS units should also:

(1) transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without expecting a reply from the aircraft;

(2) monitor and plot the progress of the flight with the means available, and coordinate transfer of control with adjacent ATS units without requiring transmissions or other responses from the aircraft, unless communication with the aircraft remains normal;

(3) inform, and continue to keep informed, appropriate ATS units, including those in adjacent flight information regions (FIRs), which may be concerned with the progress of the flight;

(4) notify:

(i) the operator or its designated representative;

(ii) the appropriate rescue coordination centre in accordance with appropriate alerting procedures; and

(iii) the appropriate authority designated by the State; and

(5) relay appropriate messages, relating to the circumstances associated with the unlawful interference, between the aircraft and designated authorities.

(b) The following additional procedures should apply if a threat is received indicating that a bomb or other explosive device has been placed on board a known aircraft. The ATS unit receiving the threat information should:

(1) if in direct communication with the aircraft, advise the flight crew without delay of the threat and the circumstances surrounding the threat; or

(2) if not in direct communication with the aircraft, advise the flight crew by the most expeditious means through other ATS units or other channels.

(c) The ATS unit in communication with the aircraft should ascertain the intentions of the flight crew and report those intentions to other ATS units which may be concerned with the flight.

(d) The aircraft should be handled in the most expeditious manner while ensuring, to the extent possible, the safety of other aircraft and that personnel and ground installations are not put at risk.

(e) Aircraft in flight should be given re-clearance to a requested new destination without delay. Any request by the flight crew to climb or descend for the purpose of equalising or reducing the differential between the outside air pressure and the cabin air pressure should be approved as soon as possible.

(f) An aircraft on the ground should be advised to remain as far away from other aircraft and installations as possible and, if appropriate, to vacate the runway. The aircraft should be instructed to taxi to a designated or isolated parking area in accordance with local instructions. Should the flight crew disembark passengers and crew immediately, other aircraft, vehicles and personnel should be kept at a safe distance from the threatened aircraft.

(g) ATS units should not provide any advice or suggestions concerning action to be taken by the flight crew in relation to an explosive device.

(h) An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities should be cleared to the designated isolated parking position. Where such an isolated parking position has not been designated, or if the designated position is not available, the aircraft should be cleared to a position within the area or areas selected by prior agreement with the aerodrome authority. The taxi clearance should specify the taxi route to be followed to the parking position. This route should be selected with a view to minimising any security risks to the public, other aircraft and installations at the aerodrome.

GM1 to AMC1 SERA.11005(a)(1) Unlawful interference

ED Decision 2016/023/R

Verbal reference to unlawful interference should not be made by the controller unless it is first made by the pilot in a radio communication transmission, since it might attract the attention of the hijacker (or of other aircraft) and have detrimental consequences.

GM1 SERA.11005 Unlawful interference

ED Decision 2016/023/R

The following procedures are intended as guidance for use by aircraft when unlawful interference occurs and the aircraft is unable to notify an ATS unit of this fact.

(a) If the pilot-in-command cannot proceed to an aerodrome, they should attempt to continue flying on the assigned track and at the assigned cruising level at least until able to notify an ATS unit or until within radar or ADS-B coverage.

(b) When an aircraft subjected to an act of unlawful interference must depart from its assigned track or its assigned cruising level without being able to make radiotelephony contact with ATS, the pilot-in-command should, whenever possible:

(1) attempt to broadcast warnings on the VHF channel in use or the VHF emergency frequency, and other appropriate channels, unless considerations aboard the aircraft dictate otherwise. Other equipment such as on-board transponders and data links should also be used when it is advantageous to do so and circumstances permit; and

(2) proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established and promulgated in the Regional Supplementary Procedures (Doc 7030); or

(3) if no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for an IFR flight by:

(i) 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1 000 ft) is applied; or

(ii) 300 m (1 000 ft) in an area where a vertical separation minimum of 600 m (2 000 ft) is applied.

SERA.11010 Strayed or unidentified aircraft

Regulation (EU) 2016/1185

(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 the corrective action to be taken. This advice shall be immediately provided when the ATS unit 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.

GM1 SERA.11010 Strayed or unidentified aircraft

ED Decision 2013/013/R

GENERAL

(a) An aircraft may be considered, at the same time, as a 'strayed aircraft' by one unit and as an 'unidentified aircraft' by another unit. This possibility should be taken into account when complying with the provisions of SERA.11010(a)(1)(iii) and SERA.11010(b)(2) and (b)(3).

(b) Navigational assistance by an air traffic services unit is particularly important if the unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.

SERA.11012 Minimum Fuel and Fuel Emergency

Regulation (EU) 2016/1185

(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 that by using the radiotelephony distress signal (MAYDAY), preferably spoken three times, followed by the nature of the distress condition (FUEL).

GM1 SERA.11012 Minimum fuel and fuel emergency

ED Decision 2016/023/R

The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing, and any change to the existing clearance may result in landing with less than planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

SERA.11013 Degraded aircraft performance

Regulation (EU) 2016/1185

(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 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 reduced vertical separation minima (RVSM) airspace

(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, 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 read-backs 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 should be suspended entirely or within a specific flight level band and/or area.

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

GM1 SERA.11013(b) Degraded aircraft performance

ED Decision 2016/023/R

DEGRADATION OR FAILURE OF THE RNAV SYSTEM

(a) If an aircraft cannot meet the requirements due to a failure or degradation of the RNAV system that is detected before departure from an aerodrome where it is not practicable to effect a repair, the aircraft concerned should be permitted to proceed to the nearest suitable aerodrome where the repair can be made. When granting clearance to such aircraft, ATC should take into consideration the existing or anticipated traffic situation and may have to modify the time of departure, flight level or route of the intended flight. Subsequent adjustments may become necessary during the course of the flight.

With respect to the degradation/failure in flight of an RNAV system, while the aircraft is operating on an ATS route requiring the use of RNAV 5:

(1) aircraft should be routed via VOR/DME-defined ATS routes; or

(2) if no such routes are available, aircraft should be routed via conventional navigation aids, i.e. VOR/DME; or

When the above procedures are not feasible, the ATC unit should, where practicable, provide the aircraft with radar vectors until the aircraft is capable of resuming its own navigation.

With respect to the degradation/failure in flight of an RNAV system, while the aircraft is operating on an arrival or departure procedure requiring the use of RNAV:

(1) the aircraft should be provided with radar vectors until the aircraft is capable of resuming its own navigation; or

(2) the aircraft should be routed by conventional navigation aids, i.e. VOR/DME.

Subsequent ATC action in respect of an aircraft that cannot meet the specified requirements due to a failure or degradation of the RNAV system, will be dependent upon the nature of the reported failure and the overall traffic situation. Continued operation in accordance with the current ATC clearance may be possible in many situations. When this cannot be achieved, a revised clearance may be required to revert to VOR/DME navigation.

GM1 SERA.11013(c) Degraded aircraft performance

ED Decision 2016/023/R

LOSS OF VERTICAL NAVIGATION PERFORMANCE REQUIRED FOR RVSM

An in-flight contingency affecting flight in RVSM airspace pertains to unforeseen circumstances that directly impact on the ability of one or more aircraft to operate in accordance with the vertical navigation performance requirements of RVSM airspace.

SERA.11014 ACAS resolution advisory (RA)

Regulation (EU) 2016/1185

(a) ACAS II shall be used during flight, except as provided in the minimum equipment list specified in Commission Regulation (EU) No 965/2012[1] in a mode that enables RA indications to be produced for the flight crew when undue proximity to another aircraft is detected. This shall not apply if inhibition of RA indication mode (using traffic advisory (TA) indication only or equivalent) is called for by an abnormal procedure or due to performance-limiting conditions.

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

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

(2) follow the RA even if there is a conflict between the RA and an 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.

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

(d) 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 to 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.

GM1 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

Nothing in the procedures specified in SERA.11014 should prevent pilots-in-command from exercising their best judgement and full authority in the choice of the best course of action to resolve a traffic conflict or avert a potential collision.

[1] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).

GM2 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

The ability of ACAS to fulfil its role of assisting pilots in the avoidance of potential collisions is dependent on the correct and timely response by pilots to ACAS indications. Operational experience has shown that the correct response by pilots is dependent on the effectiveness of the initial and recurrent training in ACAS procedures.

GM3 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

Pilots should not manoeuvre their aircraft in response to traffic advisories (TAs) only.

GM4 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

Visually acquired traffic may not be the same traffic causing an RA. The visual perception of an encounter may be misleading, particularly at night.

GM5 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

In the case of an ACAS–ACAS coordinated encounter, the RAs complement each other in order to reduce the potential for a collision. Manoeuvres, or lack of manoeuvres, that result in vertical rates opposite to the sense of an RA could result in a collision with the intruder aircraft.

GM6 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

Unless informed by the pilot, ATC does not know when ACAS issues RAs. It is possible for ATC to issue instructions that are unknowingly contrary to ACAS RA indications. Therefore, it is important that ATC be notified when an ATC instruction or clearance is not being followed because it conflicts with an RA.

GM7 SERA.11014 ACAS resolution advisory (RA)

ED Decision 2016/023/R

Pilots should use appropriate procedures by which an aeroplane climbing or descending to an assigned altitude or flight level may do so at a rate less than 8 m/s (or 1 500 ft/min) throughout the last 300 m (or 1 000 ft) of climb or descent to the assigned altitude or flight level when the pilot is made aware of another aircraft at or approaching an adjacent altitude or flight level, unless otherwise instructed by ATC. These procedures are intended to avoid unnecessary ACAS II RAs in aircraft at or approaching adjacent altitudes or flight levels. For commercial operations, these procedures should be specified by the operator.

SERA.11015 Interception

Regulation (EU) 2016/1185

(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;

(5) 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.

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	You have been intercepted. Follow me.	DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.	Understood, will comply.

Table S11-1				
Signals initiated by intercepting aircraft and responses by intercepted aircraft				
Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
	series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.			
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, will comply
DESCEND	DEE-SEND	Descend for landing	---		
			CAN NOT	KANN NOTT	Unable to comply
YOU LAND	YOU LAAND	Land at this aerodrome	REPEAT	REE-PEET	Repeat your instruction
			AM LOST	AM LOSST	Position unknown
PROCEED	PRO-SEED	You may proceed			
			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

(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;

[1] In the second column, syllables to be emphasised 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'.

(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.

GM2 SERA.11015 Interception

ED Decision 2016/023/R

1. General

1.1 Interception of civil aircraft should be avoided and should be undertaken only as a last resort. If undertaken, the interception should be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome. Practice interception of civil aircraft is not to be undertaken unless prior agreement has been reached to conduct such activity with the pilot and operator of the civil aircraft concerned.

1.2 To eliminate or reduce the need for interception of civil aircraft, it is important that:

(a) all possible efforts be made by intercept control units to secure identification of any aircraft which may be a civil aircraft, and to issue any necessary instructions or advice to such aircraft, through the appropriate ATS units. To this end, it is essential that means of rapid and reliable communications between intercept control units and ATS units be established and that agreements be formulated concerning exchanges of information between such units on the movements of civil aircraft, in accordance with the provisions of SERA.4001(b)(4), SERA.11010(a)(1)(iv), SERA.11010(a)(3)(ii), SERA.11010(b), and SERA.11010(b)(5);

(b) areas prohibited to all civil flights and areas in which civil flight is not permitted without special authorisation by the State be clearly promulgated in the AIP together with the risk, if any, of interception in the event of penetration of such areas. When delineating such areas in close proximity to promulgated ATS routes, or other frequently used tracks, account should be taken of the availability and overall systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas;

(c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able to safely circumnavigate prohibited or, as required, restricted areas.

1.3 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure coordinated actions by the pilots and ground units concerned. To this end, it is essential that steps be taken to ensure that:

(a) all pilots of civil aircraft are made fully aware of the actions to be taken by them and the visual signals to be used;

(b) operators or pilots-in-command of civil aircraft implement the capability of aircraft to communicate on 121,5 MHz and the availability of interception procedures and visual signals on board aircraft,

(c) all ATS personnel are made fully aware of the actions to be taken by them in accordance with the provisions of SERA.4001(b)(4), SERA.11010(a)(1)(iv), SERA.11010(a)(3)(ii), SERA.11010(b) and SERA.11010(b)(5);

(d) all pilots-in-command of intercepting aircraft are made aware of the general performance limitations of civil aircraft and of the possibility that intercepted civil aircraft may be in a state of emergency due to technical difficulties or unlawful interference;

(e) clear and unambiguous instructions are issued to intercept control units and to pilots-in-command of potential intercepting aircraft, covering interception manoeuvres, guidance of intercepted aircraft, action by intercepted aircraft, air-to-air visual signals, radio-communication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;

Note. See paragraphs 2 to 6.

(f) intercept control units and intercepting aircraft are provided with radiotelephony equipment so as to enable them to communicate with intercepted aircraft on the emergency frequency 121,5 MHz,

(g) secondary surveillance radar and/or ADS-B facilities are made available to the extent possible to permit intercept control units to identify civil aircraft in areas where they might otherwise be intercepted. Such facilities should permit recognition of aircraft identity and immediate recognition of any emergency or urgency conditions.

2. Interception manoeuvres

2.1 A standard method should be established for the manoeuvring of aircraft intercepting a civil aircraft in order to avoid any hazard for the intercepted aircraft. Such method should take due account of the performance limitations of civil aircraft, the need to avoid flying in such proximity to the intercepted aircraft that a collision hazard may be created, and the need to avoid crossing the aircraft's flight path or to perform any other manoeuvre in such a manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.

2.2 An aircraft equipped with an ACAS, which is being intercepted, may perceive the interceptor as a collision threat and thus initiate an avoidance manoeuvre in response to an ACAS RA. Such a manoeuvre might be misinterpreted by the interceptor as an indication of unfriendly intentions. It is important therefore that pilots of intercepting

aircraft equipped with a secondary surveillance radar (SSR) transponder suppress the transmission of pressure-altitude information (in Mode C replies or in the AC field of Mode S replies) within a range of at least 37 km (20 NM) of the aircraft being intercepted. This prevents the ACAS in the intercepted aircraft from using RAs in respect of the interceptor, while the ACAS traffic advisory information will remain available.

2.3 Manoeuvres for visual identification

The following method is recommended for the manoeuvring of intercepting aircraft for the purpose of visually identifying a civil aircraft:

Phase I

The intercepting aircraft should approach the intercepted aircraft from astern. The element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, within the field of view of the pilot of the intercepted aircraft, and initially not closer to the aircraft than 300 m. Any other participating aircraft should stay well clear of the intercepted aircraft, preferably above and behind. After speed and position have been established, the aircraft should, if necessary, proceed with Phase II of the procedure.

Phase II

The element leader, or the single intercepting aircraft, should begin closing in gently on the intercepted aircraft, at the same level, until no closer than absolutely necessary to obtain the information needed. The element leader, or the single intercepting aircraft, should use caution to avoid startling the flight crew or the passengers of the intercepted aircraft, keeping constantly in mind the fact that manoeuvres considered normal to an intercepting aircraft may be considered hazardous to passengers and crews of civil aircraft. Any other participating aircraft should continue to stay well clear of the intercepted aircraft. Upon completion of identification, the intercepting aircraft should withdraw from the vicinity of the intercepted aircraft as outlined in Phase III.

Phase III

The element leader, or the single intercepting aircraft, should break gently away from the intercepted aircraft in a shallow dive. Any other participating aircraft should stay well clear of the intercepted aircraft and re-join their leader.

2.4 Manoeuvres for navigational guidance

2.4.1 If, following the identification manoeuvres in Phase I and Phase II above, it is considered necessary to intervene in the navigation of the intercepted aircraft, the element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, to enable the pilot-in-command of the latter aircraft to see the visual signals given.

2.4.2 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in Table S11-1, are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the reheat/afterburner, provided that no hazard is created for the intercepted aircraft.

2.5 It is recognised that meteorological conditions or terrain may occasionally make it necessary for the element leader, or the single intercepting aircraft, to take up a position on the right (starboard) side, slightly above and ahead of the intercepted aircraft. In such case, the pilot-in-command of the intercepting aircraft must take particular care that the intercepting aircraft is clearly visible at all times to the pilot-in-command of the intercepted aircraft.

3. Guidance of an intercepted aircraft

3.1 Navigational guidance and related information should be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.

3.2 When navigational guidance is given to an intercepted aircraft, care must be taken that the aircraft is not led into conditions where the visibility may be reduced below that required to maintain flight in visual meteorological conditions and that the manoeuvres demanded of the intercepted aircraft do not add to already existing hazards in the event that the operating efficiency of the aircraft is impaired.

3.3 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflown, care must also be taken that:

(a) the designated aerodrome is suitable for the safe landing of the aircraft type concerned, especially if the aerodrome is not normally used for civil air transport operations;

(b) the surrounding terrain is suitable for circling, approach and missed approach manoeuvres;

(c) the intercepted aircraft has sufficient fuel remaining to reach the aerodrome;

(d) if the intercepted aircraft is a civil transport aircraft, the designated aerodrome has a runway with a length equivalent to at least 2 500 m at MSL and a bearing strength sufficient to support the aircraft; and

(e) whenever possible, the designated aerodrome is one that is described in detail in the relevant AIP.

3.4 When requiring a civil aircraft to land at an unfamiliar aerodrome, it is essential that sufficient time be allowed for it to prepare for a landing, bearing in mind that only the pilot-in-command of the civil aircraft can judge the safety of the landing operation in relation to runway length and aircraft mass at the time.

3.5 It is particularly important that all information necessary to facilitate a safe approach and landing be given to the intercepted aircraft by radiotelephony.

4. Air-to-air visual signals

The visual signals to be used by intercepting and intercepted aircraft are those set forth in Tables S11-1 and S11-2. It is essential that intercepting and intercepted aircraft adhere strictly to those signals and interpret correctly the signals given by the other aircraft, and that the intercepting aircraft pay particular attention to any signals given by the intercepted aircraft to indicate that it is in a state of distress or urgency.

5. Radio communication between the intercept control unit or the intercepting aircraft and the intercepted aircraft

5.1 When an interception is being made, the intercept control unit and the intercepting aircraft should:

(a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121,5 MHz, using the call signs 'INTERCEPT CONTROL', 'INTERCEPTOR (call sign)' and 'INTERCEPTED AIRCRAFT' respectively, and

(b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the competent authority, or to establish contact through the appropriate ATS unit(s).

5.2 If radio contact is established during interception, but communication in a common language is not possible, attempts must 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.

6. Refraining from the use of weapons

The use of tracer bullets to attract attention is hazardous, and it is expected that measures will be taken to avoid their use so that the lives of persons on board and the safety of aircraft will not be endangered.

7. Coordination between intercept control units and ATS units

It is essential that close coordination be maintained between an intercept control unit and the appropriate ATS unit during all phases of an interception of an aircraft which is, or might be, a civil aircraft, in order for the ATS unit to be kept fully informed of the developments and of the action required of the intercepted aircraft.

AMC1 SERA.11015(a) Interception

ED Decision 2013/013/R

REGULATIONS AND ADMINISTRATIVE DIRECTIVES ISSUED BY MEMBER STATES GOVERNING INTERCEPTION OF CIVIL AIRCRAFT

(a) In accordance with the provisions on interception of civil aircraft in Annex 2 to the Convention on the International Civil Aviation, the national provisions put in place under SERA.11015(a) should ensure that:

(1) interception of civil aircraft is undertaken only as a last resort;

(2) an interception is limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or congested areas, or instruct it to effect a landing at a designated aerodrome;

(3) practice interception of civil aircraft is not undertaken, unless it has been previously agreed with the pilot-in-command of the aircraft to be intercepted and ATC has been informed accordingly that the interception is to take place;

(4) navigational guidance and related information is given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and

(5) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is suitable for the safe landing of the aircraft type concerned.

(b) Member States should publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method should be designed to avoid any hazard for the intercepted aircraft.

(c) Member States should ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.

GM1 SERA.11015(a) Interception

ED Decision 2013/013/R

REGULATIONS AND ADMINISTRATIVE DIRECTIVES ISSUED BY MEMBER STATES GOVERNING INTERCEPTION OF CIVIL AIRCRAFT

Member States that comply with an alternative means of compliance different from AMC1 SERA.11015(a) Interception over the territory and territorial waters of the State are required to notify ICAO of a difference to ICAO Annex 2. Over the high seas ICAO Annex 2 is to be applied without exception in accordance with the Chicago Convention and SERA.1001(a).

SECTION 12 SERVICES RELATED TO METEOROLOGY — AIRCRAFT OBSERVATIONS AND REPORTS BY VOICE COMMUNICATIONS

SERA.12001 Types of aircraft observations

Regulation (EU) No 923/2012

(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

Regulation (EU) 2020/1177

(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; or

(9) the runway braking action encountered is not as good as reported.

(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 as set out in point A of Appendix 5. Those reports shall comply with the detailed instructions for reporting, as provided in point 2 of Appendix 5.

(1) The detailed instructions, including the formats of messages and the phraseologies provided in Appendix 5, shall be used by flight crews when transmitting air-reports and by ATS 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 set out in point B of Appendix 5 shall be provided for flight crews operating on routes which could be affected by volcanic ash clouds.

GM1 SERA.12005(c) Special aircraft observations

ED Decision 2016/023/R

In a busy environment where the transmission of complete special aircraft observations would have a negative impact on the frequency occupancy, ATC may instruct the aircraft to make the complete report on an alternative frequency.

SERA.12010 Other non-routine aircraft observations

Regulation (EU) No 923/2012

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

Regulation (EU) No 923/2012

(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

Regulation (EU) No 923/2012

(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 point 3 of 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.

AMC1 SERA.12020 Exchange of air-reports

ED Decision 2016/023/R

SPECIAL AIR-REPORTS

Special air-reports should be transmitted with the least possible delay to aircraft likely to be affected and should cover the portion of the route up to one hour's flying time ahead of the aircraft.

GM1 SERA.12020(a)(2) Exchange of air-reports

ED Decision 2020/007/R

SPECIAL AND NON-ROUTINE AIR-REPORTS TO THE ASSOCIATED METEOROLOGICAL WATCH OFFICE (MWO)

The transmission of special and non-routine air-reports to their associated MWO is to be intended with the exceptions of runway braking action encountered and wind shear air-reports.

GM1 SERA.12020(a)(3) Exchange of air-reports

ED Decision 2013/013/R

OTHER ATS UNITS CONCERNED

Other ATS units concerned are those that have flights under their jurisdiction which are expected to enter the airspace concerned at a later stage of flight. Those flights could, for instance, require rerouting before entering the airspace concerned. As an example, a special air-report concerning volcanic ash or volcanic eruption could be necessary to transmit to aircraft by ATS units in the FIR adjacent to that affected by the air-report.

SECTION 13 SSR TRANSPONDER

SERA.13001 Operation of an SSR transponder

Regulation (EU) 2016/1185

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

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

(c) Except for flight in airspace designated by the competent authority for mandatory operation of transponder, aircraft without sufficient electrical power supply are exempted from the requirement to operate the transponder at all times.

GM1 SERA.13001 Operation of an SSR transponder

ED Decision 2016/023/R

Pilots of aircraft engaged in formation join-ups are expected to continue operating the transponder until established in formation. Once established in formation, all except the lead aircraft should be instructed to 'squawk standby'.

GM1 SERA.13001(c) Operation of an SSR transponder

ED Decision 2016/023/R

Pilots of non-powered aircraft are also encouraged to operate the transponder during flight outside airspace where carriage and operation of SSR transponder is mandatory.

SERA.13005 SSR transponder Mode A code setting

Regulation (EU) 2016/1185

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

(1) select Code 7700 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 7700 whenever there is a specific reason to believe that this would be the best course of action;

(2) select Code 7600 to indicate a state of radio-communication failure;

(3) attempt to select Code 7500 to indicate a state of unlawful interference. If circumstances so warrant, Code 7700 should be used instead.

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

(1) select codes as instructed by the ATS unit; or

(2) in the absence of ATS instructions related to code setting, select code 2000 or another code as prescribed by the competent authority; or

(3) when not receiving air traffic services, select code 7000 in order to improve the detection of suitably equipped aircraft unless otherwise prescribed by the competent authority.

(c) When it is observed that the code shown on the situation display is different from 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; and

(2) if the discrepancy between assigned and displayed 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 and/or multilateration (MLAT) in the provision of ATS shall be informed accordingly.

GM1 SERA.13005(a) SSR transponder Mode A code setting

ED Decision 2016/023/R

If a pilot has selected Mode A Code 7500 and has been requested to confirm this code by ATC, the pilot should, according to circumstances, either confirm this or not reply at all. If the pilot does not reply, ATC should take this as confirmation that the use of Code 7500 is not an inadvertent false code selection.

AMC1 SERA.13005(c) SSR transponder Mode A code setting

ED Decision 2016/023/R

When requested by ATC to confirm the code selected, the pilot should:

(a) verify the Mode A code setting on the transponder;

(b) reselect the assigned code if necessary; and

(c) confirm to ATC the setting displayed on the controls of the transponder.

SERA.13010 Pressure-altitude-derived information

Regulation (EU) 2020/469 (EU) 2020/469

(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 shall be effected at least once by each suitably equipped ATS unit on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter.

GM1 SERA.13010(b) Pressure-altitude-derived information

ED Decision 2020/007/R

ERRONEOUS LEVEL INFORMATION IN AIR TRAFFIC CONTROL SERVICE PROVISION

(a) If the displayed level information is not within the approved tolerance value or when a discrepancy in excess of the approved tolerance value is detected subsequent to verification, the pilot should be advised accordingly and requested to check the pressure setting and confirm the aircraft's level.

(b) If, following confirmation of the correct pressure setting, the discrepancy continues to exist, the following action should be taken by ATC according to circumstances:

(1) request the pilot to select and operate an alternative transponder, if available, and re-verify that the displayed level information is within the approved tolerance; or

(2) request the pilot to stop Mode C or ADS-B altitude data transmission, provided this does not cause the loss of position and identity information, and notify the next control positions or ATC unit concerned with the aircraft of the action taken; or

(3) inform the pilot of the discrepancy and request that the relevant operation continue in order to prevent loss of position and identity information of the aircraft and, when so prescribed by the local instructions, override the label-displayed level information with the reported level. In addition, the ATC unit should notify the next control position or ATC unit concerned with the aircraft of the action taken.

(c) It should be highlighted that ACAS will accept mode C replies that are erroneous, and it is possible to issue an RA based on these inputs. When the measures described in (b)(1) cannot be implemented, the controller should take into account the likelihood of generating ACAS RA in the provision of ATS.

GM2 SERA.13010(b) Pressure-altitude-derived information

ED Decision 2020/007/R

ERRONEOUS LEVEL INFORMATION IN FLIGHT INFORMATION SERVICE PROVISION

The procedures for the verification of pressure-altitude-derived displayed information in the provision of flight information service should be established by the competent authority taking into consideration GM1 ATS.TR.155(f) in EASA ED Decision 2020/008/R.

SERA.13015 SSR transponder Mode S aircraft identification setting

Regulation (EU) 2016/1185

(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 controller shall take the following actions:

(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

Regulation (EU) 2016/1185

(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, be expected 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; and

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

GM1 SERA.13020(a) SSR transponder failure when the carriage of a functioning transponder is mandatory

ED Decision 2016/023/R

TRANSPONDER FAILURE AFTER DEPARTURE

When an aircraft experiencing transponder failure after departure is operating or expected to operate in an area where the carriage of a functioning transponder with specified capabilities is mandatory, the ATC units concerned should endeavour to provide for continuation of the flight to the aerodrome of first intended landing in accordance with the flight plan. However, in certain traffic situations, either in terminal areas or en-route, continuation of the flight may not be possible, particularly when failure is detected shortly after take-off. The aircraft may then be required to return to the departure aerodrome or to land at the nearest suitable aerodrome acceptable to the operator concerned and to ATC.

GM1 SERA.13020(b) SSR transponder failure when the carriage of a functioning transponder is mandatory

ED Decision 2016/023/R

TRANSPONDER FAILURE BEFORE DEPARTURE

In case of a transponder failure which is detected before departure from an aerodrome where it is not practicable to effect a repair, the aircraft concerned should be permitted to proceed, as directly as possible, to the nearest suitable aerodrome where repair can be made. When granting clearance to such aircraft, ATC should take into consideration the existing or anticipated traffic situation and may have to modify the time of departure, flight level or route of the intended flight. Subsequent adjustments may become necessary during the course of the flight. Note that Article 4(4) of Commission Implementing Regulation (EU) No 1207/2011[1] also addresses this issue.

[1] Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky (OJ L 305, 23.11.2011, p. 35).

SECTION 14 VOICE COMMUNICATION PROCEDURES

SERA.14001 General

Regulation (EU) 2016/1185

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.

AMC1 SERA.14001 General

ED Decision 2016/023/R

For standardised phraseology, refer to the Appendix 1.

Appendix 1 to AMC1 SERA.14001 General

ED Decision 2022/020/R

1. ATS PHRASEOLOGIES

1.1 General

Section	*Circumstances*	*Phraseologies*	*Applicable to* ATC	FIS
1.1.1	Description of levels (subsequently referred to as '(*level*)')	a) FLIGHT LEVEL *(number)*; *or*	☑	☑
		b) [HEIGHT] *(number)* FEET/METRES; *or*	☑	☑
		c) [ALTITUDE] *(number)* FEET/METRES.	☑	☑
	Note. — In circumstances where clarification is required, the word 'ALTITUDE' or 'HEIGHT' may be included, e.g. 'DESCEND TO ALTITUDE TWO THOUSAND FEET'.			
	when passing level information in form of vertical distance from the other traffic	d) *(number)* FEET/METRES ABOVE (*or* BELOW*)*	☑	☑
1.1.2	Level changes, reports and rates	a) CLIMB (*or* DESCEND);	☑	☐
		followed as necessary by:		
		1) TO *(level)*	☑	☐
	...instruction that a climb (or descent) to a level within the vertical range defined is to commence	2) TO AND MAINTAIN BLOCK *(level)* TO *(level)*;	☑	☐

	3) TO REACH *(level)* AT (*or* BY) *(time or significant point)*;	☑	☐
	4) REPORT LEAVING (*or* REACHING, *or* PASSING) *(level)*;	☑	☐
	5) AT *(number)* METRES PER SECOND (*or* FEET PER MINUTE) [OR GREATER (*or* OR LESS)];	☑	☐
...for SST aircraft only	6) REPORT STARTING ACCELERATION (*or* DECELERATION).	☑	☐
	b) MAINTAIN AT LEAST *(number)* METRES (*or* FEET) ABOVE (*or* BELOW) *(aircraft call sign)*;	☑	☐
	c) REQUEST LEVEL (*or* FLIGHT LEVEL *or* ALTITUDE) CHANGE FROM *(name of unit)* [AT *(time or significant point)*];	☑	☐
	d) STOP CLIMB (*or* DESCENT) AT *(level)*;	☑	☐
	e) CONTINUE CLIMB (*or* DESCENT) TO *(level)*;	☑	☐
	f) EXPEDITE CLIMB (*or* DESCENT) [UNTIL PASSING *(level)*];	☑	☐
	g) WHEN READY, CLIMB (*or* DESCEND) TO *(level)*;	☑	☐
	h) EXPECT CLIMB (*or* DESCENT) AT *(time or significant point)*;	☑	☐
	*i) REQUEST DESCENT AT *(time)*;	*	
...to require action at a specific time or place	j) IMMEDIATELY;	☑	☐
	k) AFTER PASSING *(significant point)*;	☑	☐
	l) AT *(time or significant point)*;	☑	☐
...to require action when convenient	m) WHEN READY *(instruction)*;	☑	☐
...to require an aircraft to climb or descend maintaining own separation and VMC	n) MAINTAIN OWN SEPARATION AND VMC [FROM *(level)*] [TO *(level)*];	☑	☐
	o) MAINTAIN OWN SEPARATION AND VMC ABOVE (*or* BELOW, *or* TO) *(level)*;	☑	☐

	...when there is doubt that an aircraft can comply with a clearance or instruction	p) IF UNABLE, *(alternative instructions)* AND ADVISE;	☑	☐
	...when a pilot is unable to comply with a clearance or instruction	*q) UNABLE;	*	
	...after a flight crew starts to deviate from any ATC clearance or instruction to comply with an ACAS resolution advisory (RA) (Pilot and controller interchange)	*r) TCAS RA;	*	
		s) ROGER;	☑	☐
	...after the response to an ACAS RA is completed and a return to the ATC clearance or instruction is initiated (Pilot and controller interchange)	*t) CLEAR OF CONFLICT, RETURNING TO *(assigned clearance)*;	*	
		u) ROGER *(or alternative instructions)*;	☑	☐
		*v) CLEAR OF CONFLICT *(assigned clearance)* RESUMED;	*	
		w) ROGER *(or alternative instructions)*;	☑	☐
	…after an ATC clearance or instruction contradictory to the ACAS RA is received, the flight crew will follow the RA and inform ATC directly (Pilot and controller interchange)	*x UNABLE, TCAS RA;	*	
		y) ROGER;	☑	☐
	…clearance to cancel level restriction(s) of the vertical profile of a SID during climb	z) CLIMB TO *(level)* [LEVEL RESTRICTION(S) (*SID designator*) CANCELLED *(or)* LEVEL RESTRICTION(S) *(SID designator)* AT *(point)* CANCELLED];	☑	☐
	…clearance to cancel level restriction(s) of the vertical profile of a STAR during descent	aa) DESCEND TO *(level)* [LEVEL RESTRICTION(S) *(STAR designator)* CANCELLED *(or)* LEVEL RESTRICTION(S) *(STAR designator)* AT *(point)* CANCELLED].	☑	☐
		'*' denotes pilot transmission.		
1.1.3	Minimum fuel	*a) MINIMUM FUEL:	*	
	…indication of minimum fuel	b) ROGER [NO DELAY EXPECTED or EXPECT *(delay information)*].	☑	☐
	Note. — A flight information service (FIS) unit will not provide information on delay.	'*' denotes pilot transmission.		

1.1.4	Transfer of control and/or frequency change	a) CONTACT *(unit call sign) (frequency)* [NOW];	☑	☐
		b) AT (*or* OVER) *(time or place)* [*or* WHEN] [PASSING/LEAVING/REACHING *(level)*] CONTACT *(unit call sign) (frequency)*;	☑	☐
		c) IF NO CONTACT *(instructions)*;	☑	☐
	Note. — An aircraft may be requested to 'STAND BY' on a frequency when it is intended that the ATS unit will initiate communications soon.	d) STAND BY FOR *(unit call sign) (frequency)*;	☑	☐
		*e) REQUEST CHANGE TO *(frequency)*;	*	
		f) FREQUENCY CHANGE APPROVED;	☑	☐
	Note. — An aircraft may be requested to 'MONITOR' a frequency when information is being broadcast thereon.	g) MONITOR *(unit call sign) (frequency)*;	☑	☐
		*h) MONITORING *(frequency)*;	*	
		i) WHEN READY, CONTACT *(unit call sign) (frequency)*;	☑	☐
		j) REMAIN THIS FREQUENCY.	☑	☐
		'*' denotes pilot transmission.		
1.1.5	8.33 kHz channel spacing *Note.— In this paragraph, the term 'point' is used only in the context of naming the 8.33 kHz channel spacing concept and does not constitute any change to existing ICAO provisions or phraseology regarding the use of the term 'decimal'.*			
	...to request confirmation of 8.33 kHz capability	a) CONFIRM EIGHT POINT THREE THREE;	☑	☑
	...to indicate 8.33 kHz capability	*b) AFFIRM EIGHT POINT THREE THREE;	*	

	...to indicate lack of 8.33 kHz capability	*c) NEGATIVE EIGHT POINT THREE THREE;	*	
	...to request UHF capability	d) CONFIRM UHF;	☑	☑
	...to indicate UHF capability	*e) AFFIRM UHF;	*	
	...to indicate lack of UHF capability	*f) NEGATIVE UHF;	*	
	...to request status in respect of 8.33 kHz exemption	g) CONFIRM EIGHT POINT THREE THREE EXEMPTED;	☑	☑
	...to indicate 8.33 kHz exempted status	*h) AFFIRM EIGHT POINT THREE THREE EXEMPTED;	*	
	...to indicate 8.33 kHz non-exempted status	*i) NEGATIVE EIGHT POINT THREE THREE EXEMPTED;	*	
	...to indicate that a certain clearance is given because otherwise a non-equipped and/or non-exempted aircraft would enter airspace of mandatory carriage	j) DUE EIGHT POINT THREE THREE REQUIREMENT.	☑	☐
		'*' denotes pilot transmission.		
1.1.6	Change of call sign			
	...to instruct an aircraft to change its type of call sign	a) CHANGE YOUR CALL SIGN TO *(new call sign)* [UNTIL FURTHER ADVISED];	☑	☐
	...to advise an aircraft to revert to the call sign indicated in the flight plan	b) REVERT TO FLIGHT PLAN CALL SIGN *(call sign)* [AT *(significant point)*].	☑	☐
1.1.7	Traffic information	a) TRAFFIC *(information)*;	☑	☑
	...to pass traffic information	b) NO REPORTED TRAFFIC;	☑	☑
	...to acknowledge traffic information	*c) LOOKING OUT;	*	
		*d) TRAFFIC IN SIGHT;	*	
		*e) NEGATIVE CONTACT *[reasons]*;	*	

		f) [ADDITIONAL] TRAFFIC *(direction)* BOUND *(type of aircraft) (level)* ESTIMATED (*or* OVER) *(significant point)* AT *(time)*;	☑	☑
		g) TRAFFIC IS *(classification)* UNMANNED FREE BALLOON(S) WAS [*or* ESTIMATED] OVER (*place*) AT (*time*) REPORTED *level(s)*) [*or* LEVEL UNKNOWN] MOVING *(direction) (other pertinent information, if any).* '*' denotes pilot transmission.	☑	☑
1.1.8	Meteorological conditions	a) [SURFACE] WIND *(number)* DEGREES *(speed) (units)*;	☑	☑
		b) WIND AT *(level) (number)* DEGREES *(number)* KILOMETRES PER HOUR (*or* KNOTS); *Note. — Wind is always expressed by giving the mean direction and speed and any significant variations thereof.*	☑	☑
		c) VISIBILITY *(distance) (units) [direction]*;	☑	☑
		d) RUNWAY VISUAL RANGE (*or* RVR) [RUNWAY *(number)*] *(distance) (units)*;	☑	☑
		e) RUNWAY VISUAL RANGE (*or* RVR) RUNWAY *(number)* NOT AVAILABLE (*or* NOT REPORTED);	☑	☑
	...for multiple RVR observations	f) RUNWAY VISUAL RANGE (*or* RVR) [RUNWAY *(number)*] *(first position) (distance) (units), (second position) (distance) (units), (third position) (distance) (units)*; *Note 1. — Multiple RVR observations are always representative of the touchdown zone, midpoint zone and the roll-out/stop-end zone respectively.* *Note 2. — Where reports for three locations are given, the indication of these locations may be omitted, provided that the reports are passed in the order of touchdown zone, followed by the midpoint zone and ending with the roll-out/stop-end zone report.*	☑	☑
	...in the event that RVR information on any one position is not available, this information will	g) RUNWAY VISUAL RANGE (*or* RVR) [RUNWAY *(number)*] *(first position) (distance) (units), (second position)* NOT AVAILABLE*, (third position) (distance) (units)*;	☑	☑

	be included in the appropriate sequence			
		h) PRESENT WEATHER (details);	☑	☑
		i) CLOUD *(amount, [(type)] and height of base) (units)* (*or* SKY CLEAR);	☑	☑
		j) CAVOK; *Note. — 'CAVOK' pronounced 'CAV-O-KAY'.*	☑	☑
		k) TEMPERATURE [MINUS] *(number)* (*and/or* DEWPOINT [MINUS] *(number)*);	☑	☑
		l) QNH (number) *[units]*;	☑	☑
		m) QFE *(number)* [(units)];	☑	☑
		n) *(aircraft type)* REPORTED *(description)* ICING (*or* TURBULENCE) [IN CLOUD] *(area) (time)*;	☑	☑
		o) REPORT FLIGHT CONDITIONS;	☑	☑
	...information to a pilot changing from IFR flight to VFR flight where it is likely that flight in VMC cannot be maintained	p) INSTRUMENT METEOROLOGICAL CONDITIONS REPORTED (*or forecast*) IN THE VICINITY OF (*location*)	☑	☑
1.1.9	Position reporting	a) NEXT REPORT AT *(significant point)*;	☑	☐
	...to omit position reports until a specified position	b) OMIT POSITION REPORTS [UNTIL *(specify)*];	☑	☐
		c) RESUME POSITION REPORTING.	☑	☐
1.1.10	Additional reports	a) REPORT PASSING *(significant point)*;	☑	☑
	...to request a report at a specified place or distance	b) REPORT *(distance)* MILES (GNSS *or* DME) FROM *(name of DME station) (or significant point)*;	☑	☑
	...to report at a specified place or distance	*c) *(distance)* MILES (GNSS *or* DME) FROM *(name of DME station) (or significant point)*;		
		d) REPORT PASSING *(three digits)* RADIAL *(name of VOR)* VOR;	☑	☑
	...to request a report of present position	e) REPORT (GNSS *or* DME) DISTANCE FROM *(significant point) or (name of DME station)*;	☑	☑

	…to report present position	*f) *(distance)* MILES (GNSS *or* DME) FROM *(name of DME station) (or significant point)*. '*' denotes pilot transmission.		
1.1.11	Aerodrome information *Note. — This information is provided for runway thirds or the full runway, as applicable. (Applicable from 12 August 2021)*	a) [*(location)* RUNWAY *(number)* SURFACE CONDITION [CODE *(three-digit number)*]; *followed as necessary by:* 1. ISSUED AT *(date and time UTC)*; 2. DRY, or WET ICE, or WATER ON TOP OF COMPACTED SNOW, or DRY SNOW, or DRY SNOW ON TOP OF ICE, or WET SNOW ON TOP OF ICE, or ICE, or SLUSH, or STANDING WATER, or COMPACTED SNOW, or WET SNOW, or DRY SNOW ON TOP OF COMPACTED SNOW, or WET SNOW ON TOP OF COMPACTED SNOW, or WET, or SLIPPERY WET, OR SPECIALLY PREPARED WINTER RUNWAY, or FROST; 3. DEPTH (*(depth of deposit)* MILLIMETRES or NOT REPORTED); 4. COVERAGE (*(number)* PER CENT or NOT REPORTED); 5. AVAILABLE WIDTH *(number)* METRES; 6. LENGTH REDUCED TO *(number)* METRES; 7. DRIFTING SNOW; 8. LOOSE SAND; 9. CHEMICALLY TREATED; 10. SNOWBANK *(number)* METRES [LEFT, or RIGHT or LEFT AND RIGHT] [OF or FROM] CENTRE LINE; 11. TAXIWAY *(identification of taxiway)* SNOWBANK *(number)* METRES [LEFT, or RIGHT or LEFT AND RIGHT] [OF or FROM] CENTRE LINE; 12. ADJACENT SNOWBANKS; 13. TAXIWAY *(identification of taxiway)* POOR; 14. APRON *(identification of apron)* POOR; 15. Plain-language remarks	☑	☑
		b) [*(location)*] RUNWAY SURFACE CONDITION RUNWAY *(number)* NOT CURRENT;	☑	☑
		c) LANDING SURFACE *(condition)*;	☑	☑

		d) CAUTION CONSTRUCTION WORK *(location)*;	☑	☑
		e) CAUTION *(specify reasons)* RIGHT (*or* LEFT), (*or* BOTH SIDES) OF RUNWAY [*(number)*];	☑	☑
		f) CAUTION WORK IN PROGRESS (*or* OBSTRUCTION) *(position and any necessary advice)*;	☑	☑
		g) BRAKING ACTION REPORTED BY *(aircraft type)* AT *(time)* GOOD (*or* GOOD TO MEDIUM, *or* MEDIUM, *or* MEDIUM TO POOR, *or* POOR);	☑	☑
		h) TAXIWAY *(identification of taxiway)* WET [*or* STANDING WATER, *or* SNOW REMOVED *(length and width as applicable), or* CHEMICALLY TREATED, *or* COVERED WITH PATCHES OF DRY SNOW (*or* WET SNOW, *or* COMPACTED SNOW, *or* SLUSH, *or* FROZEN SLUSH, *or* ICE, *or* WET ICE, *or* ICE UNDERNEATH, *or* ICE AND SNOW, *or* SNOWDRIFTS, *or* FROZEN RUTS AND RIDGES *or* LOOSE SAND)];	☑	☑
		i) *(ATS unit call sign)* OBSERVES (weather information);	☑	☑
		j) PILOT REPORTS *(weather information)*.	☑	☑
1.1.12	Operational status of visual and non-visual aids	a) *(specify visual or non-visual aid)* RUNWAY *(number)* *(description of deficiency)*;	☑	☑
		b) *(type)* LIGHTING *(unserviceability)*;	☑	☑
		c) GBAS/SBAS/MLS/ILS CATEGORY *(category) (serviceability state)*;	☑	☑
		d) TAXIWAY LIGHTING *(description of deficiency)*;	☑	☑
		e) *(type of visual approach slope indicator)* RUNWAY *(number) (description of deficiency)*.	☑	☑
1.1.13	Reduced vertical separation minimum (RVSM) operations			
	...to ascertain RVSM approval status of an aircraft	a) CONFIRM RVSM APPROVED;	☑	☐
	...to report RVSM approved status	*b) AFFIRM RVSM;	*	

	...to report RVSM non-approved status followed by supplementary information	*c) NEGATIVE RVSM *[(supplementary information, e.g. State aircraft)]*;	*	
	...to deny ATC clearance into RVSM airspace	d) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [*or* DESCEND TO, *or* CLIMB TO] *(level)*;	☑	☐
	...to report when severe turbulence affects the capability of an aircraft to maintain height-keeping requirements for RVSM	*e) UNABLE RVSM DUE TURBULENCE;	*	
	...to report that the equipment of an aircraft has degraded below minimum aviation system performance standards	*f) UNABLE RVSM DUE EQUIPMENT;	*	
	...to request an aircraft to provide information as soon as RVSM-approved status has been regained or the pilot is ready to resume RVSM operations	g) REPORT WHEN ABLE TO RESUME RVSM;	☑	☐
	...to request confirmation that an aircraft has regained RVSM-approved status or a pilot is ready to resume RVSM operations	h) CONFIRM ABLE TO RESUME RVSM;	☑	☐
	...to report ability to resume RVSM operations after an equipment or weather-related contingency	*i) READY TO RESUME RVSM. '*' denotes pilot transmission.	*	
1.1.14	GNSS service status	a) GNSS REPORTED UNRELIABLE (*or* GNSS MAY NOT BE AVAILABLE [DUE TO INTERFERENCE]); 1) IN THE VICINITY OF *(location) (radius)* [BETWEEN *(levels)*]; or 2) IN THE AREA OF *(description)* (*or* IN (name) FIR) [BETWEEN *(levels)*];	☑	☑
		b) BASIC GNSS (*or* SBAS, *or* GBAS) UNAVAILABLE FOR *(specify operation)* [FROM *(time)* TO *(time)* (*or* UNTIL FURTHER NOTICE)];	☑	☑

		*c) BASIC GNSS UNAVAILABLE [DUE TO (*reason, e.g.* LOSS OF RAIM *or* RAIM ALERT)]; *d) GBAS (*or* SBAS) UNAVAILABLE ; e) CONFIRM GNSS NAVIGATION; *f) AFFIRM GNSS NAVIGATION. '*' denotes pilot transmission.	* * ☑ *	☑
1.1.15	RNAV			
	…RNAV arrival or departure procedure cannot be accepted by the pilot	*UNABLE (*designator*) DEPARTURE [*or* ARRIVAL] DUE RNAV TYPE;	*	
	…pilot is unable to comply with an assigned terminal area procedure	*UNABLE (*designator*) DEPARTURE [*or* ARRIVAL] (*reasons*);	*	
	…ATC unable to assign an RNAV arrival or departure procedure requested by the pilot due to the type of on-board RNAV equipment	UNABLE TO ISSUE (*designator*) DEPARTURE [*or* ARRIVAL] DUE RNAV TYPE;	☑	☐
	…ATC unable to assign an arrival or departure procedure requested by the pilot	UNABLE TO ISSUE (*designator*) DEPARTURE [*or* ARRIVAL] (*reasons*);	☑	☐
	…confirmation whether a specific RNAV arrival or departure procedure can be accepted	ADVISE IF ABLE (*designator*) DEPARTURE [*or* ARRIVAL];	☑	☐
	…informing ATC of RNAV degradation or failure	*(aircraft call sign) UNABLE RNAV DUE EQUIPMENT;	*	
	…informing ATC of no RNAV capability	*(aircraft call sign) NEGATIVE RNAV; '*' denotes pilot transmission	*	
1.1.16	Degradation of aircraft navigation performance	'*' UNABLE RNP *(specify type)* (*or* RNAV) [DUE TO (*reason, e.g.* LOSS OF RAIM *or* RAIM ALERT)].	*	

1.2 En-route air traffic services

Section	Circumstances	Phraseologies	Applicable to ATC	Applicable to FIS
1.2.1	Issuance of a clearance	a) *(name of unit)* CLEARS *(aircraft call sign)*;	☑	☐
		b) *(aircraft call sign)* CLEARED TO;	☑	☐
		c) RECLEARED *(amended clearance details)* [REST OF CLEARANCE UNCHANGED];	☑	☐
		d) RECLEARED *(amended route portion)* TO *(significant point of original route)* [REST OF CLEARANCE UNCHANGED];	☑	☐
		e) ENTER CONTROLLED AIRSPACE (*or* CONTROL ZONE) [VIA *(significant point or route)*] AT *(level)* [AT *(time)*];	☑	☐
		f) LEAVE CONTROLLED AIRSPACE (*or* CONTROL ZONE) [VIA *(significant point or route)*] AT *(level)* (*or* CLIMBING, *or* DESCENDING);	☑	☐
		g) JOIN (specify) AT *(significant point)* AT *(level)* [AT *(time)*].	☑	☐
1.2.2	Indication of route and clearance limit	a) FROM *(location)* TO *(location)*;	☑	☐
		b) TO *(location)*,	☑	☐
		followed as necessary by:		
		1) DIRECT;	☑	☐
		2) VIA *(route and/or significant points)*;	☑	☐
		3) VIA FLIGHT PLANNED ROUTE;	☑	☐
		4) VIA *(distance)* DME ARC *(direction)* OF *(name of DME station)*;	☑	☐
		c) *(route)* NOT AVAILABLE DUE *(reason)* ALTERNATIVE[S] IS/ARE *(routes)* ADVISE.	☑	☐
1.2.3	Maintenance of specified levels	a) MAINTAIN *(level)* [TO *(significant point)*];	☑	☐
		b) MAINTAIN *(level)* UNTIL PASSING *(significant point)*;	☑	☐

		c) MAINTAIN *(level)* UNTIL *(minutes)* AFTER PASSING *(significant point)*;	☑	☐
		d) MAINTAIN *(level)* UNTIL *(time)*;	☑	☐
		e) MAINTAIN *(level)* UNTIL ADVISED BY *(name of unit)*;	☑	☐
		f) MAINTAIN *(level)* UNTIL FURTHER ADVISED;	☑	☐
		g) MAINTAIN *(level)* WHILE IN CONTROLLED AIRSPACE;	☑	☐
		h) MAINTAIN BLOCK *(level)* TO *(level)*. *Note. — The term 'MAINTAIN' is not to be used in lieu of 'DESCEND' or 'CLIMB' when instructing an aircraft to change level.*	☑	☐
1.2.4	Specification of cruising levels	a) CROSS *(significant point)* AT (*or* ABOVE, *or* BELOW) *(level)*;	☑	☐
		b) CROSS *(significant point)* AT *(time)* OR LATER (*or* BEFORE) AT *(level)*;	☑	☐
		c) CRUISE CLIMB BETWEEN *(levels)* (*or* ABOVE *(level)*);	☑	☐
		d) CROSS *(distance)* MILES, (GNSS *or* DME) *[(direction)]* OF *(name of DME station)* OR *(distance) [(direction)]* OF *(significant point)* AT (*or* ABOVE *or* BELOW) *(level)*.	☑	☐
1.2.5	Emergency descent *Note. — FIC and AFIS units are entitled only to provide information, and to relay clearances and instructions on behalf of ATC units.*	*a) EMERGENCY DESCENT *(intentions)*;	*	
		b) ATTENTION ALL AIRCRAFT IN THE VICINITY OF [*or* AT] *(significant point or location)* EMERGENCY DESCENT IN PROGRESS FROM *(level)* (followed as necessary by specific instructions, clearances, traffic information, etc.). '*' denotes pilot transmission.	☑	☑
1.2.6	If clearance cannot be issued immediately upon request	EXPECT CLEARANCE *(or type of clearance)* AT *(time)*.	☑	☐

1.2.7	When clearance for deviation cannot be issued	UNABLE, TRAFFIC *(direction)* BOUND *(type of aircraft) (level)* ESTIMATED (*or* OVER) *(significant point)* AT *(time)* CALL SIGN *(call sign)* ADVISE INTENTIONS.	☑	☐
1.2.8	Separation instructions	a) CROSS *(significant point)* AT *(time)* [OR LATER (*or* OR BEFORE)];	☑	☐
		b) ADVISE IF ABLE TO CROSS *(significant point)* AT *(time or level)*;	☑	☐
		c) MAINTAIN MACH *(number)* [OR GREATER (*or* OR LESS)] [UNTIL *(significant point)*];	☑	☐
		d) DO NOT EXCEED MACH *(number)*;	☑	☐
		e) CONFIRM ESTABLISHED ON THE TRACK BETWEEN *(significant point)* AND *(significant point)* [WITH ZERO OFFSET];	☑	☐
		*f) ESTABLISHED ON THE TRACK BETWEEN *(significant point)* AND *(significant point)* [WITH ZERO OFFSET];	*	
		g) MAINTAIN TRACK BETWEEN *(significant point)* AND *(significant point)*. REPORT ESTABLISHED ON THE TRACK;	☑	☐
		*h) ESTABLISHED ON THE TRACK;	*	
	Note. — When used to apply a lateral VOR/GNSS separation, confirmation of zero offset is required.	i) CONFIRM ZERO OFFSET;	☑	☐
		*j) AFFIRM ZERO OFFSET.	*	
		'*' denotes pilot transmission		
1.2.9	Instructions associated with flying a track (offset), parallel to the cleared route	a) ADVISE IF ABLE TO PROCEED PARALLEL OFFSET;	☑	☐
		b) PROCEED OFFSET *(distance)* RIGHT/LEFT OF *(route) (track)* [CENTRE LINE] [AT *(significant point or time)*] [UNTIL (*significant point or time)*];	☑	☐

		c) CANCEL OFFSET *(instructions to rejoin cleared flight route or other information)*.	☑	☐
1.2.10	Relaying clearances, instructions, and information	a) *(ATC unit)* CLEARS (or INSTRUCTS) (or INFORMS) *(details of the clearance, instructions, or information)*;	☑	☑
	…confirmation or otherwise of the readback of clearance or instruction	b) [THAT IS] CORRECT (or NEGATIVE) [I SAY AGAIN (*ATC unit)* CLEARS (or INSTRUCTS) (*details of the clearance or the instruction)*]	☑	☑

1.3 Arrival and departure air traffic services

Section	*Circumstances*	*Phraseologies*	*Applicable to* *ATC*	*FIS*
1.3.1	Departure instructions	a) [AFTER DEPARTURE] TURN RIGHT (or LEFT) HEADING *(three digits)* (or CONTINUE RUNWAY HEADING) (or TRACK EXTENDED CENTRE LINE) TO *(level or significant point)* [*(other instructions as required)*];	☑	☐
		b) AFTER REACHING (or PASSING) *(level or significant point) (instructions)*;	☑	☐
		c) TURN RIGHT (or LEFT) HEADING *(three digits)* TO *(level)* [TO INTERCEPT *(track, route, airway, etc.)*];	☑	☐
		d) *(standard departure name and number)* DEPARTURE;	☑	☐
		e) TRACK *(three digits)* DEGREES [MAGNETIC (or TRUE)] TO (or FROM) *(significant point)* UNTIL (*time*, or REACHING *(fix or significant point or level)*) [BEFORE PROCEEDING ON COURSE];	☑	☐
		f) CLEARED VIA *(designation)*.	☑	☐
1.3.2	Approach instructions	a) CLEARED (or PROCEED) VIA *(designation)*;	☑	☐
		b) CLEARED TO *(clearance limit)* VIA *(designation)*;	☑	☐
		c) CLEARED (or PROCEED) VIA *(details of route to be followed)*;	☑	☐

	d) CLEARED *(type of approach)* APPROACH [RUNWAY *(number)*];	☑	☐
Note: The instrument approach procedure identification in the aeronautical chart is used to specify the type of approach. Where the identification uses a parenthetical suffix to include exceptional conditions, e.g. '(LNAV/VNAV only)' or '(AR)', etc., the text in the parentheses does not form part of the ATC clearance.	e) CLEARED *(type of approach)* RUNWAY *(number)* FOLLOWED BY CIRCLING TO RUNWAY *(number)*;	☑	☐
	f) CLEARED APPROACH [RUNWAY *(number)*];	☑	☐
	g) COMMENCE APPROACH AT *(time)*;	☑	☐
	*h) REQUEST STRAIGHT-IN [(type of approach)] APPROACH [RUNWAY *(number)*];	*	
	i) CLEARED STRAIGHT-IN [*(type of approach)*] APPROACH [RUNWAY *(number)*];	☑	☐
	j) REPORT VISUAL;	☑	☐
	k) REPORT RUNWAY [LIGHTS] IN SIGHT;	☑	☐
…when a pilot requests a visual approach	*l) REQUEST VISUAL APPROACH;	*	
	m) CLEARED VISUAL APPROACH RUNWAY *(number)*;	☑	☐
…to request if a pilot is able to accept a visual approach	n) ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY *(number)*;	☑	☐
…in case of successive visual approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight	o) CLEARED VISUAL APPROACH RUNWAY (number), MAINTAIN OWN SEPARATION FROM PRECEDING *(aircraft type and wake turbulence category as appropriate)* [CAUTION WAKE TURBULENCE];	☑	☐
	p) REPORT *(significant point)*; [OUTBOUND, or INBOUND];	☑	☐
	q) REPORT COMMENCING PROCEDURE TURN;	☑	☐
	*r) REQUEST VMC DESCENT;	*	
	s) MAINTAIN OWN SEPARATION;	☑	☐
	t) MAINTAIN VMC;	☑	☐
	u) ARE YOU FAMILIAR WITH *(name)* APPROACH PROCEDURE;	☑	☐

		*v) REQUEST *(type of approach)* APPROACH [RUNWAY number)]; '*' denotes pilot transmission.	*	
1.3.3	Holding clearances			
	...visual	a) HOLD VISUAL [OVER] (*position*), (*or* BETWEEN *(two prominent landmarks)*);	☑	☐
	...published holding procedure over a facility or fix	b) CLEARED (or PROCEED) TO *(significant point, name of facility or fix)* [MAINTAIN (or CLIMB or DESCEND TO) *(level)*] HOLD [*(direction)*] AS PUBLISHED EXPECT APPROACH CLEARANCE (or FURTHER CLEARANCE) AT *(time)*;	☑	☐
		*c) REQUEST HOLDING INSTRUCTIONS;	*	
	...when a detailed holding clearance is required	d) CLEARED (or PROCEED) TO *(significant point, name of facility or fix)* [MAINTAIN (*or* CLIMB or DESCEND TO) *(level)*] HOLD [*(direction)*] [*(specified)* RADIAL, COURSE, INBOUND TRACK *(three digits)* DEGREES] [RIGHT (*or* LEFT) HAND PATTERN] [OUTBOUND TIME *(number)* MINUTES] EXPECT APPROACH CLEARANCE (*or* FURTHER CLEARANCE) AT *(time) (additional instructions, if necessary)*;	☑	☐
		e) CLEARED TO THE *(three digits)* RADIAL OF THE *(name)* VOR AT *(distance)* DME FIX [MAINTAIN (*or* CLIMB *or* DESCEND TO) *(level)*] HOLD [*(direction)*] [RIGHT (or LEFT) HAND PATTERN] [OUTBOUND TIME *(number)* MINUTES] EXPECT APPROACH CLEARANCE (*or* FURTHER CLEARANCE) AT *(time) (additional instructions, if necessary)*;	☑	☐
		f) CLEARED TO THE *(three digits)* RADIAL OF THE *(name)* VOR AT *(distance)* DME FIX [MAINTAIN (*or* CLIMB *or* DESCEND TO) *(level)*] HOLD BETWEEN *(distance)* AND *(distance)* DME [RIGHT (*or* LEFT) HAND PATTERN] EXPECT APPROACH CLEARANCE (*or* FURTHER CLEARANCE) AT *(time) (additional instructions, if necessary)*. '*' denotes pilot transmission.	☑	☐
1.3.4	Expected approach time	a) NO DELAY EXPECTED;	☑	☐

b) EXPECTED APPROACH TIME *(time)*;	☑	☐
c) REVISED EXPECTED APPROACH TIME *(time)*;	☑	☐
d) DELAY NOT DETERMINED *(reasons)*.	☑	☐

1.4 Phraseologies for use on and in the vicinity of the aerodrome

Section	*Circumstances*	*Phraseologies*	*Applicable to ATC*	*FIS*
1.4.1	Identification of aircraft	SHOW LANDING LIGHTS.	☑	☑
1.4.2	Acknowledgement by visual means	a) ACKNOWLEDGE BY MOVING AILERONS (*or* RUDDER);	☑	☑
		b) ACKNOWLEDGE BY ROCKING WINGS;	☑	☑
		c) ACKNOWLEDGE BY FLASHING LANDING LIGHTS.	☑	☑
1.4.3	Starting procedures			
	...to request permission to start engines	*a) [*aircraft location*] REQUEST START-UP;	*	
		*b) [*aircraft location*] REQUEST START-UP, INFORMATION (ATIS *identification*);	*	
	... ATC response	c) START-UP APPROVED;	☑	☐
		d) START-UP AT *(time)*;	☑	☐
		e) EXPECT START-UP AT *(time)*;	☑	☐
		f) START-UP AT OWN DISCRETION;	☑	☐
		g) EXPECT DEPARTURE *(time)* START-UP AT OWN DISCRETION.	☑	☐
		'*' denotes pilot transmission.		
1.4.4	Pushback procedures			
	...aircraft/ATC	*a) [*aircraft location*] REQUEST PUSHBACK;	*	

		b) PUSHBACK APPROVED;	☑	☐
		c) STAND BY;	☑	☐
		d) PUSHBACK AT OWN DISCRETION;	☑	☐
		e) EXPECT *(number)* MINUTES DELAY DUE *(reason)*.	☑	☐
		'*' denotes pilot transmission.		
1.4.5	Towing procedures	†a) REQUEST TOW [*company name*] *(aircraft type)* FROM *(location)* TO *(location)*;	†	
	...ATC response	b) TOW APPROVED VIA *(specific routing to be followed)*;	☑	☐
		c) HOLD POSITION;	☑	☐
		d) STAND BY.	☑	☐
		'†' denotes transmission from aircraft/tow vehicle combination.		
1.4.6	To request time check and/or aerodrome data for departure	*a) REQUEST TIME CHECK;	*	
		b) TIME *(time)*;	☑	☑
	...when no ATIS broadcast is available	*c) REQUEST DEPARTURE INFORMATION;	*	
		d) RUNWAY *(number)*, WIND *(direction and speed) (units)* QNH (or QFE) *(number)* [*(units)*] TEMPERATURE [MINUS] *(number)*, [VISIBILITY *(distance) (units)* (*or* RUNWAY VISUAL RANGE (or RVR) *(distance) (units))*] [TIME *(time)*].	☑	☑
		Note. — If multiple visibility and RVR observations are available, those that represent the roll-out/stop-end zone should be used for take-off.		
		'*' denotes pilot transmission.		
1.4.7	Taxi procedures			

...for departure	*a) *[aircraft type] [wake turbulence category if 'super' or 'heavy'] [aircraft location]* REQUEST TAXI *[intentions]*;	☑	☐
	*b) *[aircraft type] [wake turbulence category if 'super' or 'heavy'] [aircraft location] (flight rules)* TO *(aerodrome of destination)* REQUEST TAXI *[intentions]*;	☑	☐
	c) TAXI TO HOLDING POINT *[number]* [RUNWAY *(number)*] [HOLD SHORT OF RUNWAY *(number)* (or CROSS RUNWAY *(number))*] [TIME *(time)*];	☑	☐
...where detailed taxi instructions are required	*d) *[aircraft type] [wake turbulence category if 'super' or 'heavy']* REQUEST DETAILED TAXI INSTRUCTIONS;	*	
	e) TAXI TO HOLDING POINT [*number*] [RUNWAY (*number*)] VIA (*specific route to be followed*) [TIME (*time*)] [HOLD SHORT OF RUNWAY *number*) (or CROSS RUNWAY *number*))];	☑	☐
...where aerodrome information is not available from an alternative source such as ATIS	f) TAXI TO HOLDING POINT *[number] (followed by aerodrome information as applicable)* [TIME *(time)*];	☑	☐
	g) TAKE (*or* TURN) FIRST *or* SECOND) LEFT *or* RIGHT);		
	h) TAXI VIA *(identification of taxiway)*;	☑	☐
	i) TAXI VIA RUNWAY *(number)*;	☑	☐
	j) TAXI TO TERMINAL *(or other location, e.g.* GENERAL AVIATION AREA) [STAND *(number)*];	☑	☐
...for helicopter operations	*k) REQUEST AIR-TAXIING FROM (or VIA) TO *(location or routing as appropriate)*;	*	
	l) AIR-TAXI TO (*or* VIA) *(location or routing as appropriate)* [CAUTION *(dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)*];	☑	☐
	m) AIR-TAXI VIA *(direct, as requested, or specified route)* TO *(location, heliport, operating or movement area, active or inactive runway)*. AVOID *(aircraft or vehicles or personnel)*;	☑	☐
...after landing	*n) REQUEST BACKTRACK;	*	
	o) BACKTRACK APPROVED;	☑	☐
	p) BACKTRACK RUNWAY *(number)*;	☑	☐

	...general	*q) [*(aircraft location)*] REQUEST TAXI TO *(destination on aerodrome)*;	*	
		r) TAXI STRAIGHT AHEAD;	☑	☐
		s) TAXI WITH CAUTION;	☑	☐
		t) GIVE WAY TO *(description and position of other aircraft)*;	☑	☐
		*u) GIVING WAY TO *(traffic)*;	*	
		*v) TRAFFIC *(or type of aircraft)* IN SIGHT;	*	
		w) TAXI INTO HOLDING BAY;	☑	☐
		x) FOLLOW *(description of other aircraft or vehicle)*;	☑	☐
		y) VACATE RUNWAY;	☑	☐
		*z) RUNWAY VACATED;	*	
		aa) EXPEDITE TAXI [*(reason)*];	☑	☐
		*bb) EXPEDITING;	*	
		cc) [CAUTION] TAXI SLOWER [*reason*];	☑	☐
		*dd) SLOWING DOWN.	*	
		'*' denotes pilot transmission.	*	
1.4.8	Holding	‡a) HOLD *(direction)* OF *(position, runway number, etc.)*;	☑	☐
		‡b) HOLD POSITION;	☑	☐
		‡c) HOLD *(distance)* FROM *(position)*;	☑	☐
	...to hold not closer to a runway than specified	‡d) HOLD SHORT OF (position);	☑	☐
		*e) HOLDING;	*	
		*f) HOLDING SHORT.	*	
		'‡' requires specific acknowledgement from the pilot.		
		'*' denotes pilot transmission. The procedure words 'ROGER' and 'WILCO' are insufficient		

		acknowledgement of the instructions 'HOLD, HOLD POSITION and HOLD SHORT OF (position)'. In each case, the acknowledgement is to be by the phraseology 'HOLDING' or 'HOLDING SHORT', as appropriate.		
1.4.9	To cross a runway	*a) REQUEST CROSS RUNWAY *(number)*; *Note. — If the control tower is unable to see the crossing aircraft (e.g. night, low visibility), the instruction should always be accompanied by a request to report when the aircraft has vacated the runway.*	*	
		b) CROSS RUNWAY *(number)* [REPORT VACATED];	☑	☐
		c) EXPEDITE CROSSING RUNWAY *(number)* TRAFFIC *(aircraft type) (distance)* KILOMETRES *or* MILES) FINAL;	☑	☐
		d) TAXI TO HOLDING POINT *[number]* [RUNWAY *(number)*] VIA *(specific route to be followed)*, [HOLD SHORT OF RUNWAY *(number)*] or [CROSS RUNWAY *(number)*];	☑	☐
		e) REPORT RUNWAY *(number)* VACATED;	☑	☑
	Note. — The pilot will, when requested, report 'RUNWAY VACATED' when the entire aircraft is beyond the relevant runway-holding position.	*f) RUNWAY VACATED. '*' denotes pilot transmission.	*	
1.4.10	Preparation for take-off	a) UNABLE TO ISSUE *(designator)* DEPARTURE *(reasons)*;	☑	☐
		b) REPORT WHEN READY [FOR DEPARTURE];	☑	☐
		c) ARE YOU READY [FOR DEPARTURE]?;	☑	☐
		d) ARE YOU READY FOR IMMEDIATE DEPARTURE?;	☑	☐
		*e) READY;	*	
	...clearance to enter runway and await take-off clearance	f) LINE UP [AND WAIT];	☑	☐

	†g) LINE UP RUNWAY *(number)*;	☑	☐
	h) LINE UP. BE READY FOR IMMEDIATE DEPARTURE;	☑	☐
...conditional clearances	‡i) *(condition)* LINE UP *(brief reiteration of the condition)*;	☑	☐
...acknowledgement of a conditional clearance	*j) *(condition)* LINING UP *(brief reiteration of the condition)*;	*	
...confirmation or otherwise of the readback of a conditional clearance	k) [THAT IS] CORRECT (*or* NEGATIVE) [I SAY AGAIN] *(as appropriate)*;	☑	☐
…request for departure from an intersection take-off position	*l) REQUEST DEPARTURE FROM RUNWAY *(number)*, INTERSECTION *(designation or name of intersection);*	*	
…approval of requested departure from an intersection take-off position	m) APPROVED, TAXI TO HOLDING POINT RUNWAY *(number)*, INTERSECTION *(designation or name of intersection);*	☑	☐
…denial of requested departure from an intersection take-off position	n) NEGATIVE, TAXI TO HOLDING POINT RUNWAY *(number)*, INTERSECTION *(designation or name of intersection);*	☑	☐
…ATC-initiated intersection take-off	o) ADVISE ABLE TO DEPART FROM RUNWAY *(number)*, INTERSECTION *(designation or name of intersection);*	☑	☐
…advising take-off run available from an intersection take-off position	p) TORA RUNWAY *(number)*, FROM INTERSECTION *(designation or name of intersection)*, *(distance)* METRES;	☑	☐
…issuing multiple line-up instruction	q) LINE UP AND WAIT RUNWAY *(number)*, INTERSECTION *(name of intersection), (essential local traffic information);*	☑	☐
…request for a visual departure	*r) REQUEST VISUAL DEPARTURE [DIRECT] TO/UNTIL *(navaid, waypoint, altitude);*	*	
…ATS-initiated visual departure	s) ADVISE ABLE TO ACCEPT VISUAL DEPARTURE [DIRECT] TO/UNTIL *(navaid, waypoint/altitude);*	☑	☐
…clearance for visual departure	t) VISUAL DEPARTURE RUNWAY *(number)* APPROVED, TURN LEFT/RIGHT [DIRECT] TO *(navaid, heading, waypoint)* [MAINTAIN VISUAL REFERENCE UNTIL *(altitude)*];	☑	☐
…read-back of visual departure clearance	*u) VISUAL DEPARTURE TO/UNTIL *(navaid, waypoint/altitude);*	*	

		'*' denotes pilot transmission. 'ŧ' When there is the possibility of confusion during multiple runway operations. '‡' Provisions concerning the use of conditional clearances are contained in SERA.8015(ec). *Note. — 'TORA' is pronounced 'TOR-AH'.*		
1.4.11	Take-off clearance	a) RUNWAY *(number)* CLEARED FOR TAKE-OFF [REPORT AIRBORNE];	☑	☐
	...when reduced runway separation is used	b) *(traffic information)* RUNWAY *(number)* CLEARED FOR TAKE-OFF;	☑	☐
	...when take-off clearance has not been complied with	c) TAKE OFF IMMEDIATELY OR VACATE RUNWAY [*(instructions)*];	☑	☐
		d) TAKE OFF IMMEDIATELY OR HOLD SHORT OF RUNWAY;	☑	☐
	...to cancel a take-off clearance	e) HOLD POSITION, CANCEL TAKE-OFF I SAY AGAIN CANCEL TAKE-OFF *(reasons)*;	☑	☐
		*f) HOLDING;	*	
	...to stop a take-off after an aircraft has commenced take-off roll	g) STOP IMMEDIATELY [*(repeat aircraft call sign)* STOP IMMEDIATELY];	☑	☐
		*h) STOPPING;	*	
	...for helicopter operations	i) CLEARED FOR TAKE-OFF [FROM *(location)*] *(present position, taxiway, final approach and take-off area, runway and number)*;	☑	☐
		*j) REQUEST DEPARTURE INSTRUCTIONS;	*	
		k) AFTER DEPARTURE TURN RIGHT (*or* LEFT, *or* CLIMB) *(instructions as appropriate)*. '*' denotes pilot transmission; 'HOLDING' and 'STOPPING' are the procedural responses to e) and g) respectively.	☑	☐
1.4.12	Turn or climb instructions after take-off	*a) REQUEST RIGHT (*or* LEFT) TURN;	*	

		b) RIGHT (*or* LEFT) TURN APPROVED;	☑	☐
		c) WILL ADVISE LATER FOR RIGHT (*or* LEFT) TURN;	☑	☐
	...to request airborne time	d) REPORT AIRBORNE;	☑	☑
		e) AIRBORNE *(time)*;	☑	☑
		f) AFTER PASSING *(level) (instructions)*;	☑	☐
	...heading to be followed	g) CONTINUE RUNWAY HEADING *(instructions)*;	☑	☐
	...when a specific track is to be followed	h) TRACK EXTENDED CENTRE LINE *(instructions)*;	☑	☐
		i) CLIMB STRAIGHT AHEAD *(instructions)*.	☑	☐
		'*' denotes pilot transmission.		
1.4.13	Entering an aerodrome traffic circuit	*a) *[aircraft type] (position) (level)* FOR LANDING;	*	
		b) JOIN [*(direction of circuit)*] *(position in circuit)* RUNWAY *(number)* [SURFACE] WIND *(direction and speed) (units)* [TEMPERATURE [MINUS] *(number)*] QNH (or QFE) *(number) [units)*] [TRAFFIC *(detail)*];	☑	☐
		c) [*(direction of circuit*)] RUNWAY *(number)* [SURFACE] WIND *(direction and speed) (units)* [TEMPERATURE [MINUS] *(number)]* QNH (or QFE) *(number) [units)*] [TRAFFIC *(detail)*];	☐	☑
		d) MAKE STRAIGHT-IN APPROACH, RUNWAY *(number)* [SURFACE] WIND *(direction and speed) (units)* [TEMPERATURE [MINUS] *(number)*] QNH (*or* QFE) *(number)* [*(units)*] [TRAFFIC *(detail)*];	☑	☐
	...when ATIS information is available	*e) *(aircraft type) (position) (level)* INFORMATION *(ATIS identification)* FOR LANDING;	*	
		f) JOIN *(position in circuit)* [RUNWAY *(number)*] QNH (*or* QFE) *(number)* [*(units)*] [TRAFFIC *(detail)*];	☑	☐
		g) *(direction of circuit)* [RUNWAY *(number)*] QNH (*or* QFE) *(number) [(units)*] [TRAFFIC *(detail)*].	☐	☑
		'*' denotes pilot transmission.		

1.4.14	In the circuit	*a) *(position in circuit, e.g. DOWNWIND/FINAL)*;	*	
		b) NUMBER ... FOLLOW *(aircraft type and position) [additional instructions if required]*;	☑	☐
		c) TRAFFIC *(detail)* [additional information if required];	☑	☑
		d) REPORT *(position in circuit).*	☑	☑
		'*' denotes pilot transmission.		
1.4.15	Approach instructions *Note. — The report 'LONG FINAL' is made when an aircraft turns on to final approach at a distance greater than 7 km (4 NM) from touchdown or when an aircraft on a straight-in approach is 15 km (8 NM) from touchdown. In both cases, a report 'FINAL' is required at 7 km (4 NM) from touchdown.*	a) MAKE SHORT APPROACH;	☑	☐
		b) MAKE LONG APPROACH (*or* EXTEND DOWNWIND);	☑	☐
		c) REPORT BASE (*or* FINAL, *or* LONG FINAL);	☑	☑
		d) CONTINUE APPROACH [PREPARE FOR POSSIBLE GO-AROUND].	☑	☐
1.4.16	Landing clearance	a) RUNWAY *(number)* CLEARED TO LAND;	☑	☐
	...when reduced runway separation is used	b) *(traffic information)* RUNWAY *(number)* CLEARED TO LAND;	☑	☐
	...special operations	c) CLEARED TOUCH AND GO;	☑	☐
		d) MAKE FULL STOP;	☑	☐
	...to make an approach along, or parallel to, a runway, descending to an agreed minimum level	*e) REQUEST LOW APPROACH *(reasons)*;	*	
		f) CLEARED LOW APPROACH [RUNWAY *(number)*] [*(altitude restriction if required) (go-around instructions)*];	☑	☐
	...to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground	*g) REQUEST LOW PASS *(reasons)*;	*	
		h) CLEARED LOW PASS [*as in f)*];	☑	☐

	...for helicopter operations	*i) REQUEST STRAIGHT-IN (*or* CIRCLING APPROACH, LEFT *or* RIGHT) TURN TO *(location)*);	*	
		j) MAKE STRAIGHT-IN (*or* CIRCLING APPROACH, LEFT (*or* RIGHT) TURN TO *(location, runway, taxiway, final approach and take-off area)*) [ARRIVAL *or* ARRIVAL ROUTE) *(number, name, or code)*]. [HOLD SHORT OF *(active runway, extended runway centre line, other)*]. [REMAIN *(direction or distance)* FROM *(runway, runway centre line, other helicopter or aircraft)*]. [CAUTION *(power lines, unlighted obstructions, wake turbulence, etc.)*]. CLEARED TO LAND. '*' denotes pilot transmission.	☑	☐
1.4.17	Delaying aircraft	a) CIRCLE THE AERODROME;	☑	☐
		b) ORBIT (RIGHT, *or* LEFT) [FROM PRESENT POSITION];	☑	☐
		c) MAKE ANOTHER CIRCUIT.	☑	☐
1.4.18	Missed approach	a) GO AROUND;	☑	☐
		b) GOING AROUND. '' denotes pilot transmission.	*	
1.4.19	Information to aircraft			
	...when pilot requested visual inspection of landing gear	a) LANDING GEAR APPEARS DOWN;	☑	☑
		b) RIGHT (*or* LEFT, *or* NOSE) WHEEL APPEARS UP (or DOWN);		
		c) WHEELS APPEAR UP;	☑	☑
		d) RIGHT (*or* LEFT, *or* NOSE) WHEEL DOES NOT APPEAR UP (*or* DOWN);	☑	☑
	...wake turbulence	e) CAUTION WAKE TURBULENCE [FROM ARRIVING (*or* DEPARTING) (type of aircraft)] *[additional information as required]*;	☑	☑
	...jet blast on apron or taxiway	f) CAUTION JET BLAST;	☑	☑

	...propeller-driven aircraft slipstream	g) CAUTION SLIPSTREAM;	☑	☑
	…other traffic	h) TRAFFIC *(details);*	☑	☑
	Information on the actual use of the runway *Note. — Information on the actual use of the runway in points i) and j) may be provided to aircraft at any phase of the flight, in particular in the circuit and during the preparation for departure.*	i) NO REPORTED TRAFFIC RUNWAY *(number);*	☐	☑
		j) RUNWAY *(number)* OCCUPIED *[or* BLOCKED BY*] (details) [*REPORT INTENTIONS*].*	☑	☑
1.4.20	Runway vacating and communications after landing	a) CONTACT GROUND *(frequency)*;	☑	☐
		b) WHEN VACATED CONTACT GROUND *(frequency)*;	☑	☐
		c) EXPEDITE VACATING;	☑	☐
		d) YOUR STAND (*or* GATE) *(designation)*;	☑	☑
		e) TAKE (*or* TURN) FIRST (*or* SECOND, *or* CONVENIENT) LEFT (*or* RIGHT) AND CONTACT GROUND *(frequency)*;	☑	☐
	...for helicopter operations	f) AIR-TAXI TO HELICOPTER STAND / HELICOPTER PARKING POSITION *(area)*;	☑	☐
		g) AIR-TAXI TO (*or* VIA) *(location or routing as appropriate)* [CAUTION *(dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)*];	☑	☐
		h) AIR-TAXI VIA *(direct, as requested, or specified route)* TO *(location, heliport, operating or movement area, active or inactive runway)*. AVOID *(aircraft or vehicles or personnel)*.	☑	☐

1.5 Phraseologies to be used related to controller–pilot data link communications (CPDLC)

Section	*Circumstances*	*Phraseologies*	*Applicable to* ATC	FIS
1.5.1	Operational status			
	...failure of CPDLC	a) [ALL STATIONS] CPDLC FAILURE *(instructions)*;	☑	☐
	...failure of a single CPDLC message	b) CPDLC MESSAGE FAILURE *(appropriate clearance, instruction, information or request)*;	☑	☐
	...to correct CPDLC clearances, instructions, information or requests	c) DISREGARD CPDLC *(message type)* MESSAGE, BREAK *(correct clearance, instruction, information or request)*;	☑	☐
	...to instruct all stations or a specific flight to avoid sending CPDLC requests for a limited period of time	d) [ALL STATIONS] STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [*(reason)*];	☑	☐
	...to resume normal use of CPDLC	e) [ALL STATIONS] RESUME NORMAL CPDLC OPERATIONS.	☑	☐

2. ATS SURVEILLANCE SERVICE PHRASEOLOGIES

Note. — The following comprise phraseologies specifically applicable when an ATS surveillance system is used in the provision of air traffic services. The phraseologies detailed in the sections above for use in the provision of air traffic services are also applicable, as appropriate, when an ATS surveillance system is used.

2.1 General ATS surveillance service phraseologies

Section	*Circumstances*	*Phraseologies*	*Applicable to* ATC	FIS
2.1.1	Identification of aircraft	a) REPORT HEADING [AND FLIGHT LEVEL (*or* ALTITUDE)];	☑	☑
		b) FOR IDENTIFICATION TURN LEFT (*or* RIGHT) HEADING *(three digits)*;	☑	☐
		c) TRANSMIT FOR IDENTIFICATION AND REPORT HEADING;	☑	☑
		d) RADAR CONTACT *[position]*;	☑	☑
		e) IDENTIFIED *[position]*;	☑	☑

		f) NOT IDENTIFIED *[reason]*, [RESUME (*or* CONTINUE) OWN NAVIGATION];	☑	☐
		g) NOT IDENTIFIED *[reason]*.	☑	☑
2.1.2	Position information	POSITION *(distance) (direction)* OF *(significant point)* (*or* OVER *or* ABEAM *(significant point)*).	☑	☑
2.1.3	Vectoring instructions	a) LEAVE *(significant point)* HEADING *(three digits)*;	☑	☐
		b) CONTINUE HEADING *(three digits)*;	☑	☐
		c) CONTINUE PRESENT HEADING;	☑	☐
		d) FLY HEADING *(three digits)*;	☑	☐
		e) TURN LEFT (*or* RIGHT) HEADING *(three digits) [reason]*;	☑	☐
		f) TURN LEFT (*or* RIGHT) *(number of degrees)* DEGREES *[reason]*;	☑	☐
		g) STOP TURN HEADING *(three digits)*;	☑	☐
		h) FLY HEADING *(three digits)*, WHEN ABLE PROCEED DIRECT *(name) (significant point)*;	☑	☐
		i) HEADING IS GOOD.	☑	☐
2.1.4	Termination of vectoring	a) RESUME OWN NAVIGATION *(position of aircraft) (specific instructions)*;	☑	☐
		b) RESUME OWN NAVIGATION [DIRECT] *(significant point)* [MAGNETIC TRACK *(three digits)* DISTANCE *(number)* KILOMETRES (*or* MILES)].	☑	☐
2.1.5	Manoeuvres	a) MAKE A THREE SIXTY TURN LEFT (*or* RIGHT) *[reason]*;	☑	☐
		b) ORBIT LEFT (*or* RIGHT) *[reason]*;	☑	☐
	...(in case of unreliable directional instruments on board aircraft)	c) MAKE ALL TURNS RATE ONE (*or* RATE HALF, *or (number)* DEGREES PER SECOND) START AND STOP ALL TURNS ON THE COMMAND 'NOW';	☑	☐

		d) TURN LEFT (*or* RIGHT) NOW;	☑	☐
		e) STOP TURN NOW.	☑	☐
		Note. — When it is necessary to specify a reason for vectoring or for the above-mentioned manoeuvres, the following phraseologies should be used: *a) DUE TRAFFIC;* *b) FOR SPACING;* *c) FOR DELAY;* *d) FOR DOWNWIND (or BASE, or FINAL).*		
2.1.6	Speed control	a) REPORT SPEED;	☑	☐
		*b) SPEED *(number)* KILOMETRES PER HOUR (*or* KNOTS);	*	
		c) MAINTAIN *(number)* KILOMETRES PER HOUR (*or* KNOTS) [OR GREATER (*or* OR LESS)] [UNTIL *(significant point)*];	☑	☐
		d) DO NOT EXCEED *(number)* KILOMETRES PER HOUR (*or* KNOTS);	☑	☐
		e) MAINTAIN PRESENT SPEED;	☑	☐
		f) INCREASE (*or* REDUCE) SPEED TO *(number)* KILOMETRES PER HOUR (*or* KNOTS) [OR GREATER (*or* OR LESS)];	☑	☐
		g) INCREASE (*or* REDUCE) SPEED BY *(number)* KILOMETRES PER HOUR (*or* KNOTS);	☑	☐
		h) RESUME NORMAL SPEED;	☑	☐
		i) REDUCE TO MINIMUM APPROACH SPEED;	☑	☐
		j) REDUCE TO MINIMUM CLEAN SPEED;	☑	☐
		k) NO [ATC] SPEED RESTRICTIONS.	☑	☐
		'*' denotes pilot transmission. *Note. — An arriving aircraft may be instructed to maintain its 'maximum speed', 'minimum clean speed', 'minimum speed', or a specified speed. 'Minimum clean speed' signifies the minimum speed at which an aircraft can be flown in a clean*		

		configuration, i.e. without deployment of lift-augmentation devices, speed brakes or landing gear.		
2.1.7	Position reporting			
	...to omit position reports	a) OMIT POSITION REPORTS [UNTIL *(specify)*];	☑	☐
		b) NEXT REPORT AT *(significant point)*;	☑	☐
		c) REPORTS REQUIRED ONLY AT *(significant point(s))*;	☑	☐
		d) RESUME POSITION REPORTING.	☑	☐
2.1.8	Traffic information and avoiding action	a) TRAFFIC *(number)* O'CLOCK *(distance) (direction of flight) [any other pertinent information]*:	☑	☑
		1) UNKNOWN;	☑	☑
		2) SLOW MOVING;	☑	☑
		3) FAST MOVING;	☑	☑
		4) CLOSING;	☑	☑
		5) OPPOSITE (*or* SAME) DIRECTION;	☑	☑
		6) OVERTAKING;	☑	☑
		7) CROSSING LEFT TO RIGHT (*or* RIGHT TO LEFT);	☑	☑
	...(if known)	8) *(aircraft type)*;	☑	☑
		9) *(level)*;	☑	☑
	...when passing level information on to aircraft climbing or descending, in the form of vertical distance from other traffic	10) [YOUR CLEARED LEVEL]	☑	☐
		11) CLIMBING (*or* DESCENDING);	☑	☑
	...to request avoiding action	*b) REQUEST VECTORS;	*	
		c) DO YOU WANT VECTORS?;	☑	☐
	...when passing unknown traffic	d) CLEAR OF TRAFFIC *[appropriate instructions]*;	☑	☑

	...for avoiding action	e) TURN LEFT (*or* RIGHT) IMMEDIATELY HEADING *(three digits)* TO AVOID [UNIDENTIFIED] TRAFFIC *(bearing by clock-reference and distance)*;	☑	☐
		f) TURN LEFT (*or* RIGHT) *(number of degrees)* DEGREES IMMEDIATELY TO AVOID [UNIDENTIFIED] TRAFFIC AT *(bearing by clock-reference and distance)*. '*' denotes pilot transmission.	☑	☐
2.1.9	Communications and loss of communications	a) [IF] RADIO CONTACT LOST *(instructions)*;	☑	☑
		b) IF NO TRANSMISSIONS RECEIVED FOR *(number)* MINUTES (*or* SECONDS) *(instructions)*;	☑	☐
		c) REPLY NOT RECEIVED *(instructions)*;	☑	☑
	...if loss of communications suspected	d) IF YOU READ *(manoeuvre instructions)*;	☑	☐
		e) IF YOU READ *[SQUAWK (code) or IDENT)]*;	☑	☑
		f) (*manoeuvre,* SQUAWK *or* IDENT) OBSERVED. POSITION *(position of aircraft) [(instructions)]*.	☑	☑
2.1.10	Termination of radar and/or ADS-B service	a) RADAR SERVICE (*or* IDENTIFICATION) TERMINATED [DUE *(reason)*] *(instructions)*;	☑	☑
		b) WILL SHORTLY LOSE IDENTIFICATION *(appropriate instructions or information)*;	☑	☑
		c) IDENTIFICATION LOST *[reasons] (instructions)*.	☑	☑
2.1.11	Radar and/or ADS-B equipment degradation	a) SECONDARY RADAR OUT OF SERVICE *(appropriate information as necessary)*;	☑	☑
		b) PRIMARY RADAR OUT OF SERVICE *(appropriate information as necessary)*;	☑	☑
		c) ADS-B OUT OF SERVICE *(appropriate information as necessary)*.	☑	☑

2.2 Radar in approach control service

Section	Circumstances	Phraseologies	Applicable to ATC	Applicable to FIS
2.2.1	Vectoring for approach	a) VECTORING FOR *(type of approach)* APPROACH RUNWAY *(number)*;	☑	☐
		b) VECTORING FOR VISUAL APPROACH RUNWAY *(number)* REPORT FIELD (*or* RUNWAY) IN SIGHT;	☑	☐
		c) VECTORING FOR *(positioning in the circuit)*;	☑	☐
		d) VECTORING FOR SURVEILLANCE RADAR APPROACH RUNWAY *(number)*;	☑	☐
		e) VECTORING FOR PRECISION APPROACH RUNWAY *(number)*;	☑	☐
		f) *(type)* APPROACH NOT AVAILABLE DUE *(reason) (alternative instructions)*.	☑	☐
2.2.2	Vectoring for ILS and other approach procedures	a) POSITION *(number)* KILOMETRES (*or* MILES) from x). TURN LEFT (*or* RIGHT) HEADING *(three digits)*;	☑	☐
		b) YOU WILL INTERCEPT (FINAL APPROACH COURSE or *radio aid*) *(distance)* FROM (*significant point or* TOUCHDOWN);	☑	☐
	...when a pilot wishes to be positioned at a specific distance from touchdown	*c) REQUEST *(distance)* FINAL;	*	
		d) CLEARED FOR *(type of approach)* APPROACH RUNWAY *(number)*;	☑	☐
	...instructions and information	e) REPORT ESTABLISHED ON LOCALISER (*or* ON [GLS/RNP/MLS] [FINAL] APPROACH [COURSE]);	☑	☐
		f) CLOSING FROM LEFT (*or* RIGHT) [REPORT ESTABLISHED];	☑	☐
		g) TURN LEFT (*or* RIGHT) HEADING *(three digits)* [TO INTERCEPT] *or* [REPORT ESTABLISHED];	☑	☐
		h) EXPECT VECTOR ACROSS THE (LOCALISER *or* [GLS/RNP/MLS] FINAL APPROACH COURSE *or radio aid*) *(reason)*;	☑	☐

		i) THIS TURN WILL TAKE YOU THROUGH THE (LOCALIZER *or* [GLS/RNP/MLS] FINAL APPROACH COURSE *or radio aid*) [*(reason)*];	☑	☐
		j) TAKING YOU THROUGH THE (LOCALISER *or* [GLS/RNP/MLS] FINAL APPROACH COURSE *or radio aid*) [*(reason)*];	☑	☐
		k) MAINTAIN (*altitude)* UNTIL GLIDE PATH INTERCEPTION;	☑	☐
		l) REPORT ESTABLISHED ON GLIDE PATH;	☑	☐
		m) INTERCEPT (LOCALISER *or* [GLS/RNP/MLS] [FINAL] APPROACH [COURSE] *or radio aid*) [RUNWAY (*number*)] [REPORT ESTABLISHED]. '*' denotes pilot transmission.	☑	☐
2.2.3	Manoeuvre during independent and dependent parallel approaches	a) CLEARED FOR *(type of approach)* APPROACH RUNWAY *(number)* LEFT (*or* RIGHT);	☑	☐
		b) YOU HAVE CROSSED THE LOCALISER (*or* GLS/RNP/MLS FINAL APPROACH COURSE). TURN LEFT (*or* RIGHT) IMMEDIATELY AND RETURN TO THE LOCALISER (*or* GLS/RNP/MLS FINAL APPROACH COURSE) [RUNWAY *(number)*];	☑	☐
		c) ILS (*or* MLS) RUNWAY *(number)* LEFT (*or* RIGHT) LOCALISER (*or* MLS) FREQUENCY IS *(frequency)*;	☑	☐
	...for avoidance action when an aircraft is observed penetrating the NTZ	d) TURN LEFT (*or* RIGHT) *(number)* DEGREES (*or* HEADING) *(three digits)* IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH], CLIMB TO *(altitude)*;	☑	☐
	...for avoidance action below 120 m (400 ft) above the runway threshold elevation where parallel approach obstacle assessment surfaces (PAOAS) criteria are being applied	e) CLIMB TO *(altitude)* IMMEDIATELY TO AVOID TRAFFIC [DEVIATING FROM ADJACENT APPROACH] *(other instructions)*.	☑	☐
2.2.4	Surveillance radar approach			
2.2.4.1	Provision of service	a) THIS WILL BE A SURVEILLANCE RADAR APPROACH RUNWAY *(number)* TERMINATING AT *(distance)*	☑	☐

		FROM TOUCHDOWN, OBSTACLE CLEARANCE ALTITUDE (*or* HEIGHT) *(number)* METRES (*or* FEET) CHECK YOUR MINIMA [IN CASE OF GO-AROUND *(instructions)*];		
		b) APPROACH INSTRUCTIONS WILL BE TERMINATED AT *(distance)* FROM TOUCHDOWN.	☑	☐
2.2.4.2	Elevation	a) COMMENCE DESCENT NOW [TO MAINTAIN A *(number)* DEGREE GLIDE PATH];	☑	☐
		b) *(distance)* FROM TOUCHDOWN ALTITUDE (*or* HEIGHT) SHOULD BE *(numbers and units)*.	☑	☐
2.2.4.3	Position	*(distance)* FROM TOUCHDOWN.	☑	☐
2.2.4.4	Checks	a) CHECK GEAR DOWN [AND LOCKED];	☑	☐
		b) OVER THRESHOLD.	☑	☐
2.2.4.5	Completion of approach	a) REPORT VISUAL;	☑	☐
		b) REPORT RUNWAY [LIGHTS] IN SIGHT;	☑	☐
		c) APPROACH COMPLETED [CONTACT *(unit)*].	☑	☐

2.3 Secondary surveillance radar (SSR) and ADS-B phraseologies

Section	*Circumstances*	*Phraseologies*	*Applicable to ATC*	*FIS*
2.3.1	To request the capability of the SSR equipment	a) ADVISE TRANSPONDER CAPABILITY;	☑	☑
		*b) TRANSPONDER *(as shown in the flight plan)*;	*	
		*c) NEGATIVE TRANSPONDER.	*	
		'*' denotes pilot transmission.		
2.3.2	To request the capability of the ADS-B equipment	a) ADVISE ADS-B CAPABILITY;	☑	☑
		*b) ADS-B TRANSMITTER *(data link)*;	*	
		*c) ADS-B RECEIVER *(data link)*;	*	
		*d) NEGATIVE ADS-B.	*	
		'*' denotes pilot transmission.		

2.3.3	To instruct setting of transponder	a) FOR DEPARTURE SQUAWK *(code)*; b) SQUAWK *(code)*.	☑ ☑	☑ ☑
2.3.4	To request the pilot to reselect the assigned mode and code	a) RESET SQUAWK *[(mode)] (code)*; *b) RESETTING *[(mode)] (code)*. '*' denotes pilot transmission.	☑ *	☑
2.3.5	To request reselection of aircraft identification	RE-ENTER [ADS-B *or* MODE S] AIRCRAFT IDENTIFICATION.	☑	☑
2.3.6	To request the pilot to confirm the code selected on the aircraft's transponder	a) CONFIRM SQUAWK *(code)*; *b) SQUAWKING *(code)*. '*' denotes pilot transmission.	☑ *	☑
2.3.7	To request the operation of the IDENT feature	a) SQUAWK *[(code)]* [AND] IDENT; b) SQUAWK LOW; c) SQUAWK NORMAL; d) TRANSMIT ADS-B IDENT.	☑ ☑ ☑ ☑	☑ ☑ ☑ ☑
2.3.8	To request temporary suspension of transponder operation	SQUAWK STANDBY.	☑	☑
2.3.9	To request emergency code	SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].	☑	☑
2.3.10	To request termination of transponder and/or ADS-B transmitter operation	a) STOP SQUAWK [TRANSMIT ADS-B ONLY];	☑	☑

		b) STOP ADS-B TRANSMISSION [SQUAWK *(code)* ONLY].	☑	☑

Note. — Independent operations of Mode S transponder and ADS-B may not be possible in all aircraft (e.g. where ADS-B is solely provided by 1 090 MHz extended squitter emitted from the transponder). In such cases, aircraft may not be able to comply with ATC instructions related to ADS-B operation.

2.3.11	To request transmission of pressure-altitude	a) SQUAWK CHARLIE;	☑	☑
		b) TRANSMIT ADS-B ALTITUDE.	☑	☑
2.3.12	To request pressure setting check and confirmation of level	a) CHECK ALTIMETER SETTING AND CONFIRM *(level)*.	☑	☑
2.3.13	To request termination of pressure-altitude transmission because of faulty operation	a) STOP SQUAWK CHARLIE WRONG INDICATION;	☑	☑
		b) STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, *or reason*)].	☑	☑
2.3.14	To request level check	CONFIRM *(level)*.	☑	☑
2.3.15	Controller queries a discrepancy between the displayed 'Selected Level' and the cleared level *Note. — The controller will not state on radiotelephony the value of the 'Selected Level' observed on the situation display.*	CHECK SELECTED LEVEL. CLEARED LEVEL IS (*level*);	☑	☐
		CHECK SELECTED LEVEL. CONFIRM CLIMBING (*or* DESCENDING) TO (*or* MAINTAINING) (*level*);	☑	☐
		*CLIMBING (*or* DESCENDING) TO (*or* MAINTAINING) (*level*) (*appropriate information on selected level).* '*' denotes pilot transmission.	*	

3. AUTOMATIC DEPENDENT SURVEILLANCE — CONTRACT (ADS-C) PHRASEOLOGIES

3.1 General ADS-C phraseologies

Section	Circumstances	Phraseologies	Applicable to ATC	Applicable to FIS
3.1.1	ADS-C degradation	ADS-C (*or* ADS-CONTRACT) OUT OF SERVICE *(appropriate information as necessary)*.	☑	☐

4. ALERTING PHRASEOLOGIES

4.1 Alerting phraseologies

Section	Circumstances	Phraseologies	Applicable to ATC	Applicable to FIS
4.1.1	Low-altitude warning	*(aircraft call sign)* LOW-ALTITUDE WARNING, CHECK YOUR ALTITUDE IMMEDIATELY, QNH IS *(number) [(units)]*. [THE MINIMUM FLIGHT ALTITUDE IS *(altitude)*].	☑	☑
4.1.2	Terrain alert	*(aircraft call sign)* TERRAIN ALERT, *(suggested pilot action, if possible)*.	☑	☑

5. GROUND CREW/FLIGHT CREW PHRASEOLOGIES

5.1 Ground crew/flight crew phraseologies

Section	Circumstances	Phraseologies	Applicable to ATC	Applicable to FIS
5.1.1	Starting procedures (ground crew/cockpit)	a) [ARE YOU] READY TO START UP?; *b) STARTING NUMBER *(engine number(s))*. *Note 1. — The ground crew should follow this exchange by either a reply on the intercom or a distinct visual signal to indicate that all is clear and that the start-up as indicated may proceed.* *Note 2. — Unambiguous identification of the parties concerned is essential in any communications between ground crew and pilots.* '*' denotes pilot transmission.		
5.1.2	Pushback procedures			

...(ground crew/cockpit)	a) ARE YOU READY FOR PUSHBACK?; *b) READY FOR PUSHBACK; c) CONFIRM BRAKES RELEASED; *d) BRAKES RELEASED; e) COMMENCING PUSHBACK; f) PUSHBACK COMPLETED; *g) STOP PUSHBACK; h) CONFIRM BRAKES SET; *i) BRAKES SET; *j) DISCONNECT; k) DISCONNECTING STAND BY FOR VISUAL AT YOUR LEFT (*or* RIGHT). *Note. — This exchange is followed by a visual signal to the pilot to indicate that disconnect is completed and all is clear for taxiing.* '*' denotes pilot transmission.		

6. AIR TRAFFIC FLOW MANAGEMENT (ATFM)

6.1 ATFM			
Calculated take-off time (CTOT) delivery resulting from a slot allocation message (SAM).	a) SLOT *(time);*	☑	☑
Change to CTOT resulting from a slot revision message (SRM).	b) REVISED SLOT *(time);*	☑	☑
CTOT cancellation resulting from a slot cancellation message (SLC).	c) SLOT CANCELLED, REPORT READY;	☑	☑
Flight suspension until further notice (resulting from flight suspension message (FLS)).	d) FLIGHT SUSPENDED UNTIL FURTHER NOTICE, DUE *(reason);*	☑	☑
Flight de-suspension resulting from a de-suspension message (DES).	e) SUSPENSION CANCELLED, REPORT READY;	☑	☑

Denial of start-up when requested too late to comply with the given CTOT.	f) UNABLE TO APPROVE START-UP CLEARANCE DUE SLOT EXPIRED, REQUEST A NEW SLOT;	☑	☐
Denial of start-up when requested too early to comply with the given CTOT.	g) UNABLE TO APPROVE START-UP CLEARANCE DUE SLOT *(time)*, REQUEST START-UP AT *(time).*	☑	☐

GM1 Appendix 1 to AMC1 SERA.14001 General

ED Decision 2021/014/R

The phraseology in AMC1 SERA.14001 does not include phrases and regular radiotelephony procedure words contained in SERA Section 14.

Words in parentheses indicate that specific information, such as a level, a place or a time, etc., must be inserted to complete the phrase, or alternatively that optional phrases may be used. Words in square parentheses indicate optional additional words or information that may be necessary in specific instances.

GM2 Appendix 1 to AMC1 SERA.14001 General

ED Decision 2021/014/R

The phraseologies listed in Appendix 1 to AMC1 SERA.14001 are organised per phases of flight or per use of specific communication, navigation and surveillance technologies that require the exchange of specific communication between ATS personnel or ground crew and flight crews.

With regard to the communications between flight crews and ATS personnel, the tables specify the ATS phraseologies to be used to perform ATC service or FIS functions respectively. Consequently, the two rightmost columns indicate which of the ATS phraseologies are to be used for ATC functions, for FIS functions, or for both ATC and FIS functions.

In general, the subject SERA phraseologies constitute a standardised core content of identified phrases for usual situations; they do not constitute an exhaustive list. When circumstances differ, pilots, ATS personnel and other ground crew will be expected to use plain language which should be as clear and concise as possible and, when applicable, in the level specified in the relevant rules on language proficiency.

GM1 SERA.14001 General

ED Decision 2016/023/R

Messages concerning acts of unlawful interference constitute a case of exceptional circumstances which may preclude the use of recognised communication procedures used to determine message category and priority.

GM2 SERA.14001 General

ED Decision 2016/023/R

When a general call ‘ALL STATIONS’ has been made, meaning that the call is addressed to all stations likely to intercept, no reply is expected unless individual stations are subsequently called to acknowledge receipt.

SERA.14005 Categories of messages

Regulation (EU) 2016/1185

(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 point 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 point SERA.14095.

SERA.14010 Flight safety messages

Regulation (EU) 2016/1185

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 in air-ground communication

Regulation (EU) 2016/1185

(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 of any aircraft, at all stations on the ground serving designated aerodromes and routes used by international air services. Unless otherwise prescribed by the competent authority for specific cases, the English language shall be used for communications between the ATS unit and aircraft, at aerodromes with more than 50000 international IFR movements per year. Member States, where at the date of entry into force of this Regulation, the English language is not the only language used for communications between the ATS unit and aircraft at such aerodromes, may decide not to apply the requirement to use the English language and inform the Commission accordingly. In that case, those Member States shall, by 31 December 2017 at the latest, conduct a study on the possibility to require the use of the English language for communications between the ATS unit and aircraft at those

aerodromes for reasons of safety, so as to avoid incursions of aircraft on an occupied runway or other safety risks, while taking into account the applicable provisions of Union and national law on the use of languages. They shall make that study public and communicate its conclusions to the Agency and the Commission.

(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.

AMC1 SERA.14015 Language to be used in air-ground communication

ED Decision 2016/023/R

The competent authority should only prescribe other conditions for the use of English language at aerodromes with more than 50 000 international IFR movements per year for specific cases, based on an individual assessment of the local arrangements. In any case, deviation from the requirement should be limited to exceptional cases and should be accompanied with a safety assessment.

In States which decide not to apply the requirement to use the English language, the study referred to in SERA.14015 should include an independent and comprehensive assessment of the impact of not using English for air-ground radio communications. Such an assessment should in particular take into account:

(a) Any available accident and incident investigation reports at least at EU level, where the use of language has been identified as a contributing factor. For this purpose, the central repository created in accordance with Commission Regulations (EC) Nos 1321/2007 and 996/2010 for such reports should also be consulted.

(b) The proportion of pilots frequenting that airport, with English language proficiency endorsement.

(c) The proportion of pilots frequenting that airport, lacking language proficiency endorsement in the alternative language to be used.

(d) A consultation of flight crews operating at the airport in question, on their preferences and ability to use the languages in question.

(e) A consultation of the safety investigation authority.

GM1 SERA.14015 Language to be used in air-ground communication

ED Decision 2016/023/R

In addition to the requirement in SERA.14015, positive consideration should be given by competent authorities to the benefits of situational awareness which could improve safety on airports and relevant surrounding airspace sectors by extending the use of the English language on some safety critical frequencies at aerodromes and relevant surrounding airspace sectors also with less than 50 000 commercial IFR movements per year, but with international traffic, and a large majority of qualified pilots with acceptable level of English. This consideration would in particular encompass:

(a) use of a single frequency for all the safety-critical operations on a runway or a set of runways;

(b) the need to and feasibility of applying the requirement for English-only communications also to communications with vehicles in order to enhance situational awareness; and

(c) where this consideration could lead to a change in current communication arrangements, it should be based on the outcome of a local safety assessment.

GM2 SERA.14015 Language to be used in air-ground communication

ED Decision 2016/023/R

The competent authority should also consider extending the requirement for the use of English language to aerodromes with less than 50 000 international IFR movements per year based on local needs, such as seasonally high levels of international air traffic.

SERA.14020 Word spelling in radiotelephony

Regulation (EU) 2016/1185

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.

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

Regulation (EU) 2016/1185

(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:

(i) K — KOPTER

(ii) U — UPPER

(iii) 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.

AMC1 SERA.14025 Principles governing the identification of ATS routes other than standard departure and arrival routes

ED Decision 2016/023/R

LETTERS 'F' AND 'G'

Where letters 'F' or 'G' are added after the basic designator of the ATS route in question, in order to indicate the type of service provided:

(a) letter 'F' indicates that on the route or portion thereof advisory service only is provided; and

(b) letter 'G' indicates that on the route or portion thereof flight information service only is provided,

(c) the flight crew are not required to use them in voice communications.

SERA.14026 Significant points

Regulation (EU) 2016/1185

Normally the plain language name for significant points marked by the site of a radio navigation aid, or the unique five-letter pronounceable 'name-code' for significant points not marked by the site of a radio navigation aid, shall be used to refer to the significant point in voice communications. If the plain language name for the site of a radio navigation aid is not used, it shall be replaced by the coded designator which, in voice communications, shall be spoken in accordance with the spelling alphabet.

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

Regulation (EU) 2016/1185

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

GM1 SERA.14030 Use of designators for standard instrument departure and arrival routes

ED Decision 2016/023/R

For the purpose of identification of routes, the words 'departure', 'arrival', and 'visual' are considered to be an integral element of the plain language designator.

SERA.14035 Transmission of numbers in radiotelephony

Regulation (EU) 2016/1185

(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 1000 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 point (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 the 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 point (a)(1) with the decimal point in appropriate sequence, indicated by the word 'DECIMAL'.

(6) All six digits of the numerical designator shall be used to identify the transmitting channel in very high frequency (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.

GM1 SERA.14035(a)(1) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

CALL SIGN, HEADING, RUNWAY AND WIND

The following examples illustrate the application.

aircraft call signs	transmitted as
CCA 238	Air China **two three eight**
OAL 242	Olympic **two four two**

headings	transmitted as
100 degrees	heading **one zero zero**
080 degrees	heading **zero eight zero**

runway	transmitted as
27	runway **two seven**
30	runway **three zero**
wind direction and speed	**transmitted as**
200 degrees 70 knots	wind **two zero zero** degrees **seven zero** knots
160 degrees 18 knots gusting 30 knots	wind **one six zero** degrees **one eight** knots gusting **three zero knots**

GM2 SERA.14035(a)(1)(i) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

FLIGHT LEVELS

The following examples illustrate the application.

flight levels	transmitted as
FL 180	flight level one eight zero
FL 200	flight level two hundred

GM3 SERA.14035(a)(1)(ii) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

ALTIMETER SETTING

The following examples illustrate the application.

altimeter setting	transmitted as
1009 hPa	QNH one zero zero nine
1000 hPa	QNH one thousand
993 hPa	QNH nine nine three

GM4 SERA.14035(a)(1)(iii) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

TRANSPONDER CODES

The following examples illustrate the application.

transponder codes	transmitted as
2400	squawk two four zero zero
1000	squawk one thousand
2000	squawk two thousand

GM1 SERA.14035(a)(2) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

ALTITUDE

The following examples illustrate the application.

altitude	transmitted as
800	eight hundred
3 400	three thousand four hundred
12 000	one two thousand

GM2 SERA.14035(a)(2) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

CLOUD HEIGHT

The following examples illustrate the application.

cloud height	transmitted as
2 200	two thousand two hundred
4 300	four thousand three hundred

GM3 SERA.14035(a)(2) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

VISIBILITY

The following examples illustrate the application.

visibility	transmitted as
1 000	visibility one thousand
700	visibility seven hundred

GM4 SERA.14035(a)(2) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

RUNWAY VISUAL RANGE

The following examples illustrate the application.

runway visual range	transmitted as
600	RVR six hundred
1 700	RVR one thousand seven hundred

GM5 SERA.14035(a)(5) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

DECIMALS

The following examples illustrate the application.

number	transmitted as
100.3	ONE ZERO ZERO DECIMAL THREE
38 143.9	THREE EIGHT ONE FOUR THREE DECIMAL NINE

GM1 SERA.14035(a)(6) Transmission of numbers in radiotelephony

ED Decision 2016/023/R

TRANSMISSION OF NUMBERS FOR RADIOTELEPHONY CHANNEL FREQUENCIES

(a) The following examples illustrate the application of the procedure.

Channel	Transmitted as
118.000	ONE ONE EIGHT DECIMAL ZERO
118.005	ONE ONE EIGHT DECIMAL ZERO ZERO FIVE
118.010	ONE ONE EIGHT DECIMAL ZERO ONE ZERO
118.025	ONE ONE EIGHT DECIMAL ZERO TWO FIVE
118.050	ONE ONE EIGHT DECIMAL ZERO FIVE ZERO
118.100	ONE ONE EIGHT DECIMAL ONE

(b) Caution must be exercised with respect to the indication of transmitting channels in VHF radiotelephony communications when all six digits of the numerical designator are used in airspace where communication channels are separated by 25 kHz, because on aircraft installations with a channel separation capability of 25 kHz or more, it is only possible to select the first five digits of the numerical designator on the radio management panel.

SERA.14040 Pronunciation of numbers

Regulation (EU) 2016/1185

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
10	TEN
11	EE-LE-VEN
12	TWELF
Decimal	DAY-SEE-MAL
Hundred	HUN-dred
Thousand	TOU-SAND

SERA.14045 Transmitting technique

Regulation (EU) 2016/1185

(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.'

Table S14-4	
Phrase	**Meaning**
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 point 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.'

GM1 SERA.14045 Transmitting technique

ED Decision 2016/023/R

BREAK

'BREAK' is to be used where there is no clear distinction between the text and other portions of the message.

GM2 SERA.14045 Transmitting technique

ED Decision 2016/023/R

CHECK

'CHECK' is not to be used in any other context than 'examine a system or procedure'. No answer is normally expected.

GM3 SERA.14045 Transmitting technique

ED Decision 2016/023/R

MAINTAIN

For example, 'Maintain VFR'.

GM4 SERA.14045 Transmitting technique

ED Decision 2016/023/R

OVER

'OVER' is not normally used in VHF communications.

GM5 SERA.14045 Transmitting technique

ED Decision 2016/023/R

OUT

'OUT' is not normally used in VHF communications.

GM6 SERA.14045 Transmitting technique

ED Decision 2016/023/R

ROGER

'ROGER' is under no circumstances to be used in reply to a question requiring 'READ BACK' or a direct answer in the affirmative (AFFIRM) or negative (NEGATIVE).

GM7 SERA.14045 Transmitting technique

ED Decision 2016/023/R

STANDBY

The caller would normally re-establish contact if the delay is lengthy. 'STANDBY' is not an approval or denial.

GM8 SERA.14045 Transmitting technique

ED Decision 2016/023/R

UNABLE

'UNABLE' is normally followed by a reason.

SERA.14050 Radiotelephony call signs for aircraft

Regulation (EU) 2016/1185

(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 point (a), with the exception of Type (c), may be abbreviated under the circumstances prescribed in point SERA.14055(c). 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.

GM1 SERA.14050 Radiotelephony call signs for aircraft

ED Decision 2016/023/R

PREFIX TO CALL SIGNS

The name of the aircraft manufacturer or of the aircraft model may be used as a radiotelephony prefix to the Type (a) call sign.

GM2 SERA.14050 Radiotelephony call signs for aircraft

ED Decision 2016/023/R

EXAMPLES OF FULL AND ABBREVIATED CALL SIGNS

	Type a)			Type b)	Type c)
Full call sign	N57826	*CESSNA FABCD	*CITATION FABCD	VARIG PVMA	SCANDINAVIAN 937
Abbreviated call sign	N26 *or* N826	CESSNA CD *or* CESSNA BCD	CITATION CD *or* CITATION BCD	VARIG MA *or* VARIG VMA	(no abbreviated form)

*The examples illustrate the application of GM1 SERA.14050.

SERA.14055 Radiotelephony procedures

Regulation (EU) 2016/1185

(a) An aircraft shall not change the type of its radiotelephony call sign during flight, except temporarily on the instruction of an ATC 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. When establishing communication, aircraft shall start their call by the designation of the station called, followed by the designation of the station calling.

(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. For transfers of communication within one ATS unit, the call sign of the ATS unit may be omitted, when so authorised by the competent authority.

(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.

(c) Subsequent radiotelephony communications

(1) Abbreviated radiotelephony call signs, as prescribed in point 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) 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. For other than those occasions, continuous two-way communication after contact has been established shall be permitted without further identification or call until termination of the contact.

GM1 SERA.14055(b) Radiotelephony procedures

ED Decision 2016/023/R

RADIOTELEPHONY CALLING PROCEDURE*

	Type a)	Type b)	Type c)
Designation of the station called	NEW YORK RADIO	NEW YORK RADIO	NEW YORK RADIO
Designation of the station calling	GABCD**	SPEEDBIRD ABCD**	AEROFLOT 321**

* In certain cases where the call is initiated by the aeronautical station, the call may be effected by transmission of coded tone signals.

** With the exception of the telephony designators and the type of aircraft, each character in the call sign is to be spoken separately. When individual letters are spelled out, the radiotelephony spelling alphabet prescribed in SERA.14020 is to be used. Numbers are to be spoken in accordance with SERA.14040.

RADIOTELEPHONY REPLY PROCEDURE

	Type a)	Type b)	Type c)
Designation of the station called	GABCD*	SPEEDBIRD ABCD*	AEROFLOT 321*
Designation of the answering station	NEW YORK RADIO	NEW YORK RADIO	NEW YORK RADIO

* With the exception of the telephony designator and the type of aircraft, each character in the call sign is to be spoken separately. When individual letters are spelled out, the radiotelephony spelling alphabet prescribed in SERA.14020 is to be used. Numbers are to be spoken in accordance with SERA.14040.

AMC1 SERA.14055(b)(2) Radiotelephony procedures

ED Decision 2016/023/R

Where authorised by the competent authority, after the initial establishment of radiotelephony contact between an aircraft and an ATS unit, for subsequent transfers of communication within the same ATS unit, the ATS position being called need not reply with its call sign. Such authorisation will be agreed with the ATS provider and duly promulgated.

SERA.14060 Transfer of VHF communications

Regulation (EU) 2016/1185

(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 provision of services and approved by the competent authority.

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

Regulation (EU) 2016/1185

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

(1) the designation of the ATS unit being called;

(2) call sign and, for aircraft in the heavy wake turbulence category, the word ‘Heavy’ or ‘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 provision of services and approved by the competent authority.

(b) Pilots shall provide level information at 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) the designation of the ATS unit being called;

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

(3) position; and

(4) additional elements, as required by the ANSP responsible for the provision of services and approved by the competent authority.

SERA.14070 Test procedures

Regulation (EU) 2016/1185

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

(1) the identification of the station being called;

(2) the identification of the station calling;

(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 station requesting the test;

(2) the identification of the station replying;

(3) information regarding the readability of the station requesting the test 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

Regulation (EU) 2016/1185

(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 the 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 read-back, incorrect items are noticed, the words 'NEGATIVE I SAY AGAIN' shall be transmitted at the conclusion of the read-back followed by the correct version of the items concerned.

GM1 SERA.14075(c)(4) Exchange of communications

ED Decision 2016/023/R

REPETITIONS

Specific items are to be requested, as appropriate, such as 'SAY AGAIN ALTIMETER', 'SAY AGAIN WIND'.

SERA.14080 Communications watch/Hours of service

Regulation (EU) 2016/1185

(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 carry 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 exists, 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. Where two or more such stations are co-located, provision of 121,5 MHz listening watch at one of them shall meet that requirement.

(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.

AMC1 SERA.14080 Communications watch/Hours of service

ED Decision 2016/023/R

GUARD ON FREQUENCY 121,5 MHZ

Aircraft on flights other than those specified should guard the emergency frequency 121,5 MHz to the extent possible.

SERA.14085 Use of blind transmission

Regulation (EU) 2016/1185

(a) When an aircraft fails to establish contact on the designated channel, on the previous channel used or on another channel appropriate to the route, and fails to establish communication with the appropriate ATS unit, other ATS unit or other aircraft using all available means, 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.

(b) 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:

(1) transmit the intended message, following this by a complete repetition;

(2) advise the time of its next intended transmission;

(3) when provided with ATS, transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight.

SERA.14087 Use of relay communication technique

Regulation (EU) 2016/1185

(a) 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:

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

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

(b) The provisions of point (a) shall also be applied:

(1) at request of the ATS unit concerned;

(2) 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 communication procedures

Regulation (EU) 2016/1185

(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 communications using the urgency call 'PAN PAN' (preferably spoken three times).

SERA.14095 Distress and urgency radiotelephony communication procedures

Regulation (EU) 2020/469

(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 shall render assistance as prescribed in points (b)(2) and (b)(3) 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 point (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) the name of the ATS unit addressed (time and circumstances permitting);

(B) the identification of the aircraft;

(C) the nature of the distress condition;

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

(E) present position, level and heading.

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

The ATS unit addressed by an aircraft in distress, or the first ATS unit 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; and

(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.

(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 the circumstances. In either case, it shall use:

(A) 'STOP TRANSMITTING';

(B) the radiotelephony distress signal 'MAYDAY'.

(ii) The use of the signals specified in point (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 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 units 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 point (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 point (c)(4)

In addition to being preceded by the radiotelephony urgency signal 'PAN PAN' in accordance with point (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 ATS unit acknowledging the urgency message

The ATS unit addressed by an aircraft reporting an urgency condition or the first ATS unit 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 communications 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 point (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 'medical'. 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 the 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 points (c)(2) and (c)(3) shall apply as appropriate to ATS units receiving a medical transports message.

(d) As laid down in Article 4a the VHF emergency frequency (121,500 MHz) shall be used for genuine emergency purposes including any of the following:

(1) to provide a clear channel between aircraft in distress or emergency and a ground station when the normal channels are being utilised for other aircraft;

(2) to provide a VHF communication channel between aircraft and aerodromes, not normally used by international air services, in case of an emergency condition arising;

(3) to provide a common VHF communication channel between aircraft, either civil or military, and between such aircraft and surface services, involved in common search and rescue operations, prior to changing when necessary to the appropriate frequency;

(4) to provide air–ground communication with aircraft when airborne equipment failure prevents the use of the regular channels;

(5) to provide a channel for the operation of emergency locator transmitters, and for communication between survival craft and aircraft engaged in search and rescue operations;

(6) to provide a common VHF channel for communication between civil aircraft and intercepting aircraft or intercept control units and between civil or intercepting aircraft and air traffic services units in the event of interception of the civil aircraft.

GM1 SERA.14095(b)(1) Distress and urgency radiotelephony communication procedures

ED Decision 2016/023/R

ACTION BY THE AIRCRAFT IN DISTRESS

(a) The provisions may be supplemented by the following measures:

(1) the distress message of an aircraft in distress being made on the emergency frequency 121,5 MHz or another aeronautical mobile frequency, if considered necessary or desirable. Not all aeronautical stations maintain a continuous guard on the emergency frequency,

(2) the distress message of an aircraft in distress being broadcast if time and circumstances render this course preferable;

(3) the aircraft transmitting on the maritime mobile service radiotelephony calling frequencies;

(4) the aircraft using any means at its disposal to attract attention and make known its conditions (including the activation of the appropriate SSR mode and code);

(5) any station taking any means at its disposal to assist an aircraft in distress;

(6) any variation on the elements listed, when the transmitting station is not itself in distress, provided that such circumstance is clearly stated in the distress message.

(b) The ATS unit addressed will normally be that ATS unit communicating with the aircraft or in whose area of responsibility the aircraft is operating.

GM1 SERA.14095(b)(2)(iii)(B) Distress and urgency radiotelephony communication procedures

ED Decision 2016/023/R

ACTION BY THE ATS UNIT

The requirement to inform the aircraft operator concerned does not have priority over any other action which involves the safety of the flight in distress, or of any other flight in the area, or which might affect the progress of expected flights in the area.

GM1 SERA.14095(c)(1) Distress and urgency radiotelephony communication procedures

ED Decision 2016/023/R

ACTION BY AIRCRAFT REPORTING AN URGENCY CONDITION

(a) These provisions are not intended to prevent an aircraft from broadcasting an urgency message if time and circumstances render this course preferable.

(b) The ATS unit addressed will normally be that ATS unit communicating with the aircraft or in whose area of responsibility the aircraft is operating.

GM1 SERA.14095(c)(1)(ii)(F) Distress and urgency radiotelephony communication procedures

ED Decision 2016/023/R

Any other useful information may consist of information such as but not limited to remaining aircraft endurance/fuel, number of persons on board, possible presence of hazardous materials and the nature thereof, aircraft colour/markings, survival aids, etc. and may also be transmitted in situation of distress.

GM1 SERA.14095(c)(2) Distress and urgency radiotelephony communication procedures

ED Decision 2016/023/R

ACTION BY ATS WHEN AN URGENCY CONDITION IS REPORTED

The requirement to inform the aircraft operating agency concerned does not have priority over any other action which involves the safety of the flight in distress, or of any other flight in the area, or which might affect the progress of expected flights in the area.

GM1 SERA.14095(d)(3) Distress and urgency radiotelephony communication procedures

ED Decision 2020/007/R

USE OF VHF EMERGENCY FREQUENCY IN CASE OF HANDLING OF DISTRESS TRAFFIC

The use of the frequency 121.500 MHz for the purpose outlined in point (d)(3) is to be avoided if it interferes in any way with the efficient handling of distress traffic.

APPENDIX 1 SIGNALS

Regulation (EU) 2016/1185

1. DISTRESS AND URGENCY SIGNALS

1.1. General

1.1.1. Notwithstanding the provisions in 1.2 and 1.3, an aircraft in distress shall use any means at its disposal to attract attention, make known its position and obtain help.

1.1.2. The telecommunication transmission procedures for the distress and urgency signals shall be in accordance with Section 14.

1.2. Distress signals

1.2.1. The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

(a) a signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (.. .— — — . .. in the Morse Code);

(b) a radiotelephony distress signal consisting of the spoken word MAYDAY;

(c) a distress message sent via data link which transmits the intent of the word MAYDAY;

(d) rockets or shells throwing red lights, fired one at a time at short intervals;

(e) a parachute flare showing a red light;

(f) setting of the transponder to Mode A Code 7700.

1.3. Urgency signals

1.3.1. The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:

(a) the repeated switching on and off of the landing lights; or

(b) the repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.

1.3.2. The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:

(a) a signal made by radiotelegraphy or by any other signalling method consisting of the group XXX (—..— —..— —..— in the Morse Code);

(b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN;

(c) an urgency message sent via data link which transmits the intent of the words PAN, PAN.

2. VISUAL SIGNALS USED TO WARN AN UNAUTHORISED AIRCRAFT FLYING IN OR ABOUT TO ENTER A RESTRICTED, PROHIBITED OR DANGER AREA

2.1. When visual signals are used to warn unauthorised aircraft flying in or about to enter a restricted, prohibited or danger area by day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars shall indicate to an unauthorised aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

3. SIGNALS FOR AERODROME TRAFFIC

3.1. Light and pyrotechnic signals

3.1.1. Instructions

Table AP 1-1

Light		From Aerodrome Control to:	
		Aircraft in flight	Aircraft on the ground
Directed towards aircraft concerned (see Figure A1-1).	Steady green	Cleared to land	Cleared for take-off
	Steady red	Give way to other aircraft and continue circling	Stop
	Series of green flashes	Return for landing[1]	Cleared to taxi
	Series of red flashes	Aerodrome unsafe, do not land	Taxi clear of landing area in use
	Series of white flashes	Land at this aerodrome and proceed to apron[2]	Return to starting point on the aerodrome
Red pyrotechnic		Notwithstanding any previous instructions, do not land for the time being	

[1] Clearances to land and to taxi will be given in due course.

[2] Clearances to land and to taxi will be given in due course.

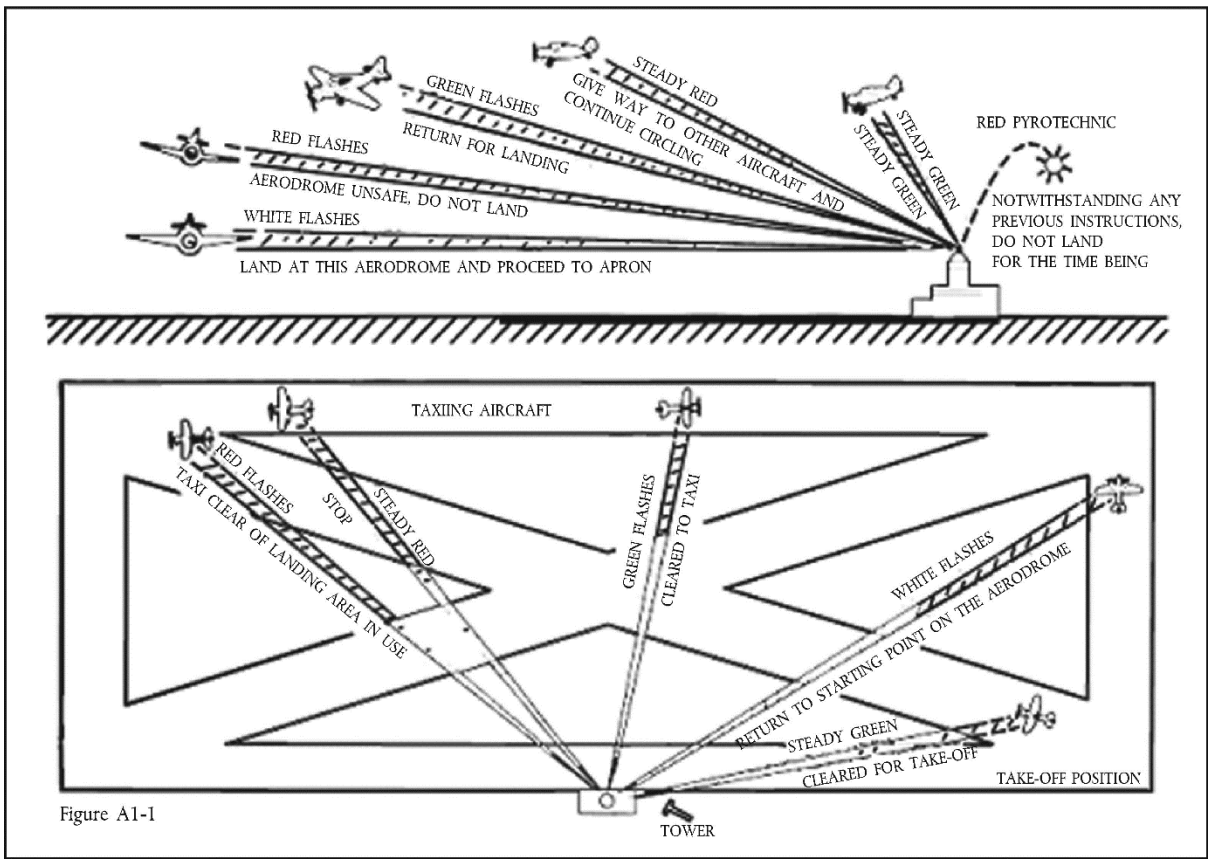


Figure A1-1

3.1.2. Acknowledgement by an aircraft

(a) When in flight:

(1) during the hours of daylight:

— by rocking the aircraft's wings, except for the base and final legs of the approach;

(2) during the hours of darkness:

— by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

(b) When on the ground:

(1) during the hours of daylight:

— by moving the aircraft's ailerons or rudder;

(2) during the hours of darkness:

— by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

3.2. Visual ground signals

3.2.1. Prohibition of landing

3.2.1.1. A horizontal red square panel with yellow diagonals (Figure A1-2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.

Figure A1-2

3.2.2. Need for special precautions while approaching or landing

3.2.2.1. A horizontal red square panel with one yellow diagonal (Figure A1-3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.

Figure A1-3

3.2.3. Use of runways and taxiways

3.2.3.1. A horizontal white dumb-bell (Figure A1-4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

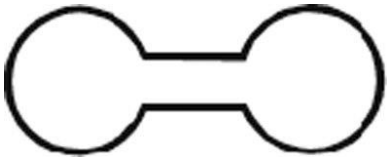


Figure A1-4

3.2.3.2. The same horizontal white dumb-bell as in 3.2.3.1 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure A1-5) when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.

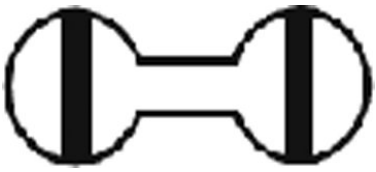


Figure A1-5

3.2.4. Closed runways or taxiways

3.2.4.1. Crosses of a single contrasting colour, 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

3.2.5. Directions for landing or take-off

3.2.5.1. A horizontal white or orange landing T (Figure A1-7) indicates the direction to be used by aircraft for landing and take-off, which shall be in a direction parallel to the shaft of the T towards the cross arm. When used at night, the landing T shall be either illuminated or outlined in white lights.

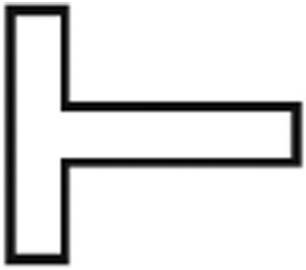


Figure A1-7

3.2.5.2. A set of two digits (Figure A1-8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.

Figure A1-8

3.2.6. Right-hand traffic

3.2.6.1. When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure A1-9) indicates that turns are to be made to the right before landing and after take-off.

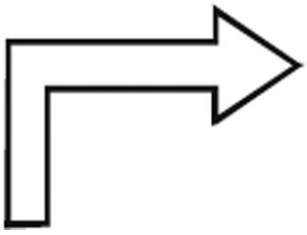


Figure A1-9

3.2.7. Air traffic services reporting office

3.2.7.1. The letter C displayed vertically in black against a yellow background (Figure A1-10) indicates the location of the air traffic services reporting office.

Figure A1-10

3.2.8. Sailplane flights in operation

3.2.8.1. A double white cross displayed horizontally (Figure A1-11) in the signal area indicates that the aerodrome is being used by sailplanes and that sailplane flights are being performed.

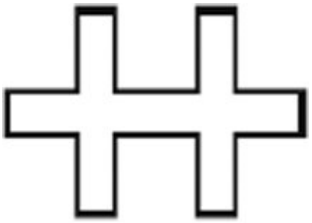


Figure A1-11

4. MARSHALLING SIGNALS

4.1. From a signalman/marshaller to an aircraft

4.1.1. The signals for use by the signalman/marshaller, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position shall be:

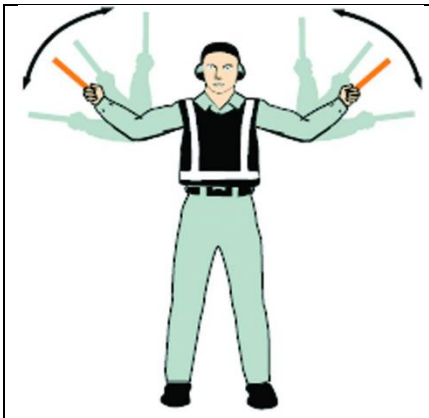
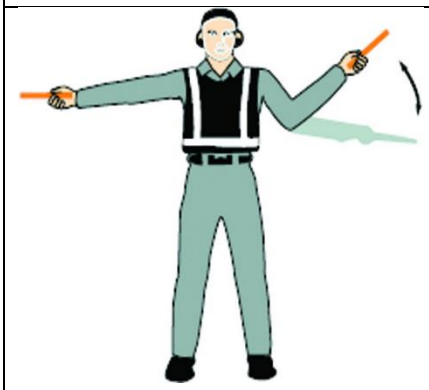
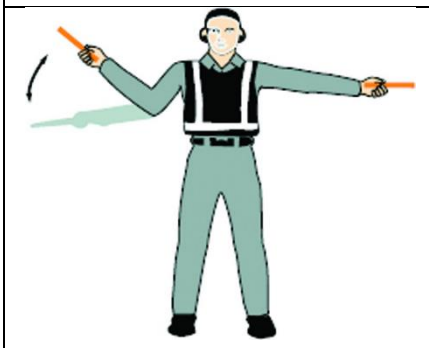
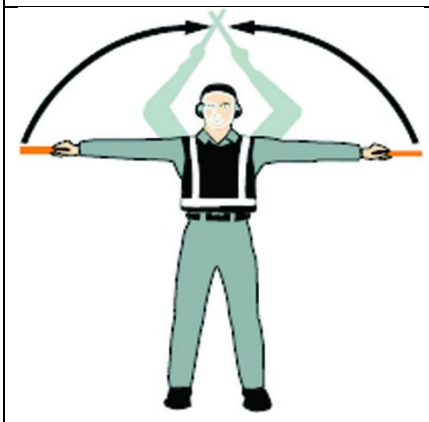
(a) for fixed-wing aircraft, on left side of aircraft, where best seen by the pilot; and

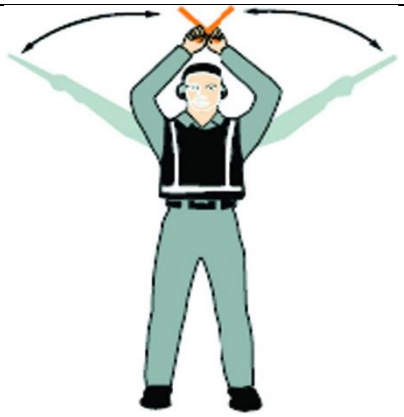
(b) for helicopters, where the signalman/marshaller can best be seen by the pilot.

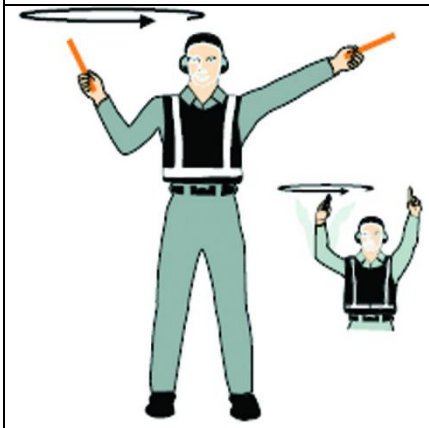
4.1.2. Prior to using the following signals, the signalman/marshaller shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with SERA.3301(a), might otherwise strike.

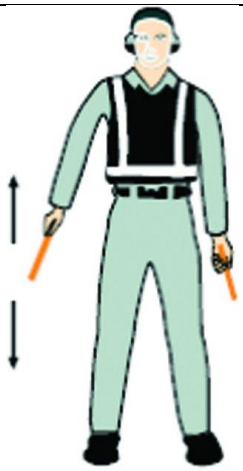
	**1. Wingwalker/guide**[1] Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.
	**2. Identify gate** Raise fully extended arms straight above head with wands pointing up.
	**3. Proceed to next signalman/marshaller or as directed by tower/ground control** Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman/marshaller or taxi area.

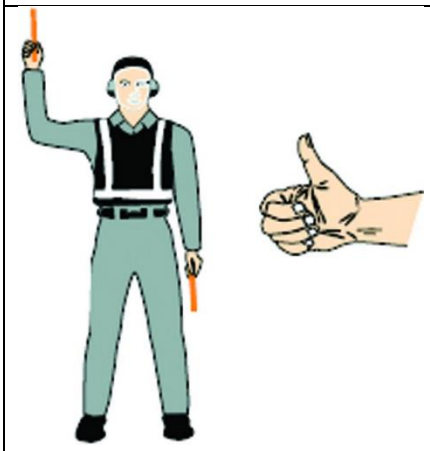
[1] This signal provides an indication by a person positioned at the aircraft wing tip, to the pilot/marshaller/push-back operator, that the aircraft movement on/off a parking position would be unobstructed.

	**4. Straight ahead** Bend extended arms at elbows and move wands up and down from chest height to head.
	**5(a) Turn left (from pilot's point of view)** With right arm and wand extended at a 90-degree angle to body, make 'come ahead' signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.
	**5(b) Turn right (from pilot's point of view)** With left arm and wand extended at a 90-degree angle to body, make 'come ahead' signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.
	**6(a) Normal stop** Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.

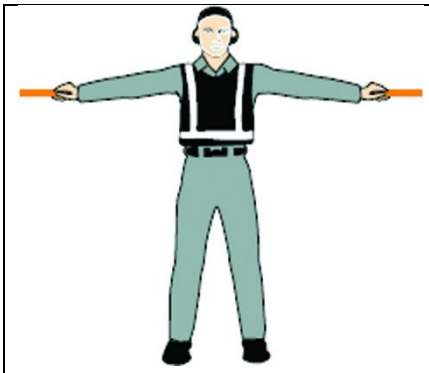
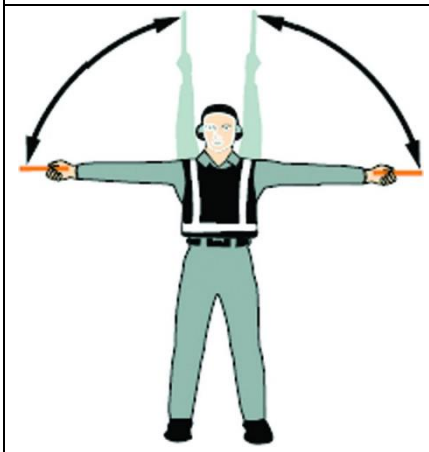
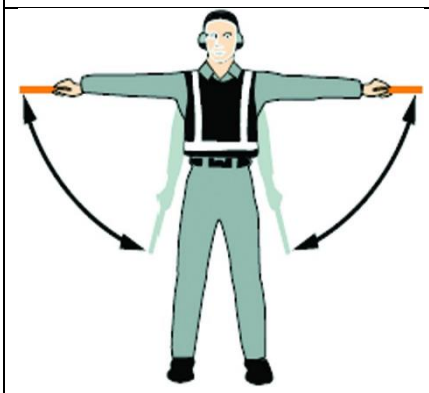
	**6(b) Emergency stop** Abruptly extend arms and wands to top of head, crossing wands.
	**7(a) Set brakes** Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. *Do not* move until receipt of 'thumbs up' acknowledgement from flight crew.
	**7(b) Release brakes** Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. *Do not* move until receipt of 'thumbs up' acknowledgement from flight crew.
	**8(a) Chocks inserted** With arms and wands fully extended above head, move wands inward in a 'jabbing' motion until wands touch. *Ensure* acknowledgement is received from flight crew.

	**8(b) Chocks removed** With arms and wands fully extended above head, move wands outward in a 'jabbing' motion. *Do not* remove chocks until authorised by flight crew.
	**9. Start engine(s)** Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.
	**10. Cut engines** Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

	**11. Slow down** Move extended arms downwards in a 'patting' gesture, moving wands up and down from waist to knees.
	**12. Slow down engine(s) on indicated side** With arms down and wands toward ground, wave either *right* or *left* wand up and down indicating engine(s) on *left* or *right* side respectively should be slowed down.
	**13. Move back** With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6(a) or 6(b).

	**14(a) Turns while backing (for tail to starboard)** Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.
	**14(b) Turns while backing (for tail to port)** Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.
	**15. Affirmative/all clear**[1] Raise right arm to head level with wand pointing up or display hand with 'thumbs up'; left arm remains at side by knee.

[1] This signal is also used as a technical/servicing communication signal.

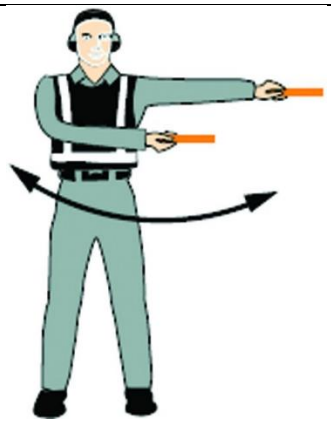
	**16. *Hover***[1] Fully extend arms and wands at a 90-degree angle to sides.
	**17. Move upwards**[2] Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upwards. Speed of movement indicates rate of ascent.
	**18. Move downwards**[3] Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downwards. Speed of movement indicates rate of descent.

[1] For use to hovering helicopters

[2] For use to hovering helicopters.

[3] For use to hovering helicopters.

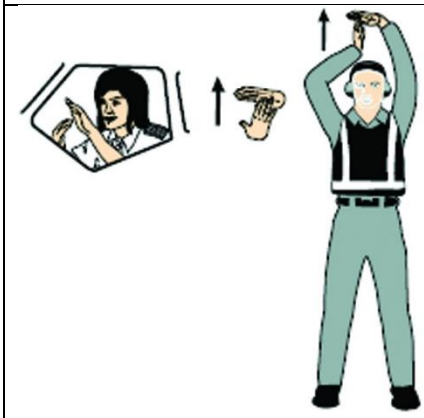
	**19(a) Move horizontally left (from pilot's point of view)**[1] Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.

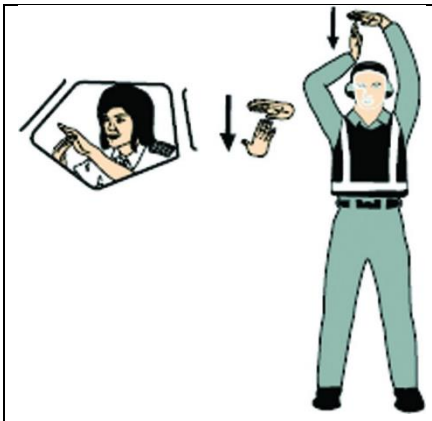
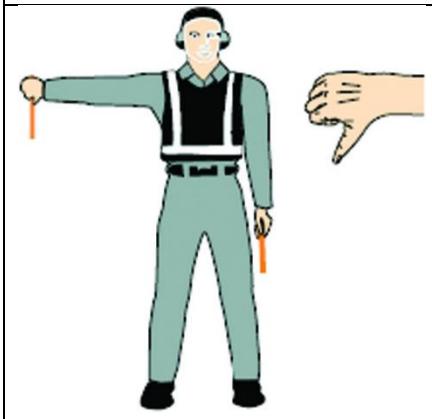
	**19(b) Move horizontally right (from pilot's point of view)**[2] Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.
	**20. *Land***[3] Cross arms with wands downwards and in front of body.

[1] For use to hovering helicopters.

[2] For use to hovering helicopters.

[3] For use to hovering helicopters.

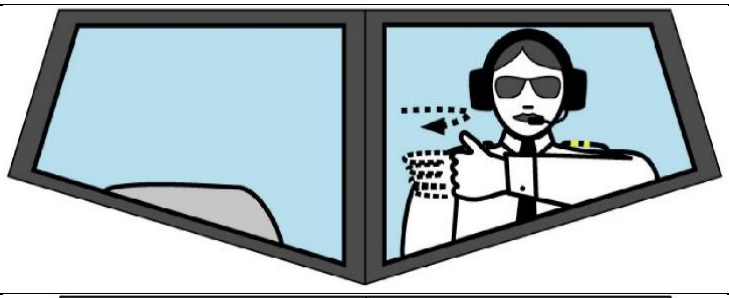
	**21. Hold position/stand by** Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.
	**22. Dispatch aircraft** Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.
	**23. Do not touch controls (technical/servicing communication signal)** Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.
	**24. Connect ground power (technical/servicing communication signal)** Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a 'T'). At night, illuminated wands can also be used to form the 'T' above head.

	**25. Disconnect power (technical/servicing communication signal)** Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a 'T'); then move right hand away from the left. *Do not* disconnect power until authorised by flight crew. At night, illuminated wands can also be used to form the 'T' above head.
	**26. Negative (technical/servicing communication signal)** Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with 'thumbs down'; left hand remains at side by knee.
	**27. Establish communication via interphone (technical/servicing communication signal)** Extend both arms at 90 degrees from body and move hands to cup both ears.

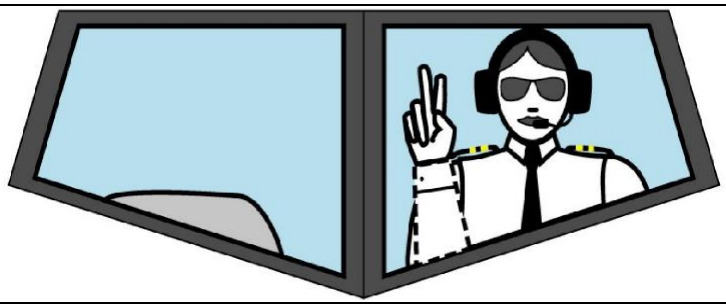
	**28. Open/close stairs (technical/servicing communication signal)**[1] With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

4.2. From the pilot of an aircraft to a signalman/marshaller

4.2.1. These signals shall be used by a pilot in the cockpit with hands plainly visible to the signalman/marshaller, and illuminated as necessary to facilitate observation by the signalman/marshaller.

	(a) Brakes engaged: raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
	(b) Brakes released: raise arm, with fist clenched, horizontally in front of face, then extend fingers.
	(c) Insert chocks: arms extended, palms outwards, move hands inwards to cross in front of face.

[1] This signal is intended mainly for aircraft with the set of integral stairs at the front.

	(d) Remove chocks: hands crossed in front of face, palms outwards, move arms outwards.
	(e) Ready to start engine(s): Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

4.3. Technical/servicing communication signals

4.3.1. Manual signals shall only be used when verbal communication is not possible with respect to technical/servicing communication signals.

4.3.2. Signalmen/marshallers shall ensure that an acknowledgement is received from the flight crew with respect to technical/servicing communication signals.

5. STANDARD EMERGENCY HAND SIGNALS

5.1. The following hand signals are established as the minimum required for emergency communication between the ARFF incident commander/ARFF firefighters and the cockpit and/or cabin crews of the incident aircraft. ARFF emergency hand signals should be given from the left front side of the aircraft for the cockpit crew.

	**1. Recommend evacuation** Evacuation recommended based on aircraft rescue and fire-fighting and Incident Commander's assessment of external situation. Arm extended from body, and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body. Night — same with wands.
	**2. Recommend stop** Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress. Arms in front of head — Crossed at wrists Night — same with wands.
	**3. Emergency contained** No outside evidence of dangerous conditions or 'all-clear.' Arms extended outward and down at a 45 degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting position. Night — same with wands.

	**4. Fire** Move right-hand in a 'fanning' motion from shoulder to knee, while at the same time pointing with left hand to area of fire. Night — same with wands.

GM1 to Appendix 1(4.1) MARSHALLING SIGNALS

ED Decision 2013/013/R

FROM A SIGNALMAN/MARSHALLER TO AN AIRCRAFT — GENERAL

(a) The meaning of the relevant signals remains the same if bats, illuminated wands or torch lights are held rather than the signalman's hands being illuminated.

(b) The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No 1 engine being the port outer engine).

(c) References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).

(d) References to the signalman may also be read to refer to marshaller.

(e) The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.

GM1 to Appendix 1(4.2.1.1) MARSHALLING SIGNALS

ED Decision 2013/013/R

FROM THE PILOT OF AN AIRCRAFT TO A SIGNALMAN/MARSHALLER — BRAKES

When providing the signal for 'brakes engaged' the moment the fist is clenched indicates the moment of brake engagement. When providing the signal for 'brakes released' the moment the fingers are extended indicates the moment of brake release.

GM1 to Appendix 1(5.1) STANDARD EMERGENCY HAND SIGNALS

ED Decision 2013/013/R

GENERAL

In order to communicate more effectively with the cabin crew, emergency hand signals may be given by ARFF firefighters from positions other than those that would be used by a signalman to provide marshalling signals.

APPENDIX 2 UNMANNED FREE BALLOONS

Regulation (EU) 2016/1185

1. CLASSIFICATION OF UNMANNED FREE BALLOONS

1.1. Unmanned free balloons shall be classified as (see Figure AP2-1):

(a) *light*: an unmanned free balloon which carries a payload of one or more packages with a combined mass of less than 4 kg, unless qualifying as a heavy balloon in accordance with (c)(2),(3) or (4); or

(b) *medium*: an unmanned free balloon which carries a payload of two or more packages with a combined mass of 4 kg or more, but less than 6 kg, unless qualifying as a heavy balloon in accordance with (c)(2), (3) or (4) below; or

(c) *heavy*: an unmanned free balloon which carries a payload which:

(1) has a combined mass of 6 kg or more; or

(2) includes a package of 3 kg or more; or

(3) includes a package of 2 kg or more with an area density of more than 13 g per square centimetre, determined by dividing the total mass in grams of the payload package by the area in square centimetres of its smallest surface; or

(4) uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon.

2. GENERAL OPERATING RULES

2.1. An unmanned free balloon shall not be operated without authorisation from the State from which the launch is made.

2.2. An unmanned free balloon, other than a light balloon used exclusively for meteorological purposes and operated in the manner prescribed by the competent authority, shall not be operated across the territory of another State without authorisation from the other State concerned.

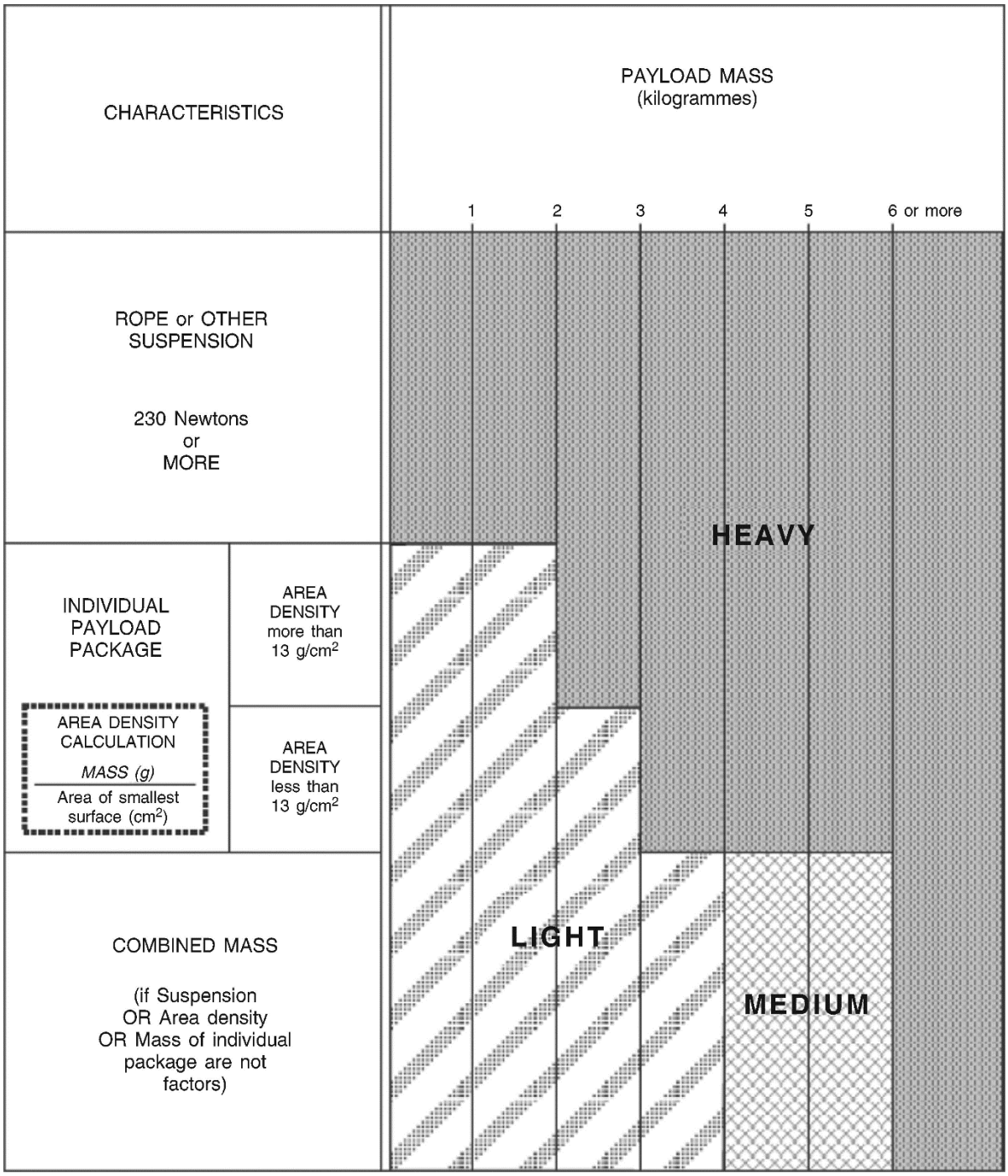
2.3. The authorisation referred to in 2.2 shall be obtained prior to the launching of the balloon if there is reasonable expectation, when planning the operation, that the balloon may drift into airspace over the territory of another State. Such authorisation may be obtained for a series of balloon flights or for a particular type of recurring flight, e.g. atmospheric research balloon flights.

2.4. An unmanned free balloon shall be operated in accordance with conditions specified by the State of Registry and the State(s) expected to be overflown.

2.5. An unmanned free balloon shall not be operated in such a manner that impact of the balloon, or any part thereof, including its payload, with the surface of the earth, creates a hazard to persons or property.

2.6. A heavy unmanned free balloon shall not be operated over the high seas without prior coordination with the ANSP(s).

Figure AP2-1


CHARACTERISTICS
PAYLOAD MASS
(kilogrammes)
1
2
3
4
5
6 or more
ROPE or OTHER SUSPENSION
230 Newtons
or
MORE
INDIVIDUAL PAYLOAD PACKAGE
AREA DENSITY CALCULATION
MASS (g)
Area of smallest surface (cm²)
AREA DENSITY more than 13 g/cm²
AREA DENSITY less than 13 g/cm²
COMBINED MASS
(if Suspension OR Area density OR Mass of individual package are not factors)
HEAVY
LIGHT
MEDIUM

3. OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS

3.1. A heavy unmanned free balloon shall not be operated without authorisation from the ANSP(s) at or through any level below 18 000 m (60 000 ft) pressure-altitude at which:

(a) there are clouds or obscuring phenomena of more than four oktas coverage; or

(b) the horizontal visibility is less than 8 km.

3.2. A heavy or medium unmanned free balloon shall not be released in a manner that will cause it to fly lower than 300 m (1 000 ft) over the congested areas of cities, towns or settlements or an open-air assembly of persons not associated with the operation.

3.3. A heavy unmanned free balloon shall not be operated unless:

(a) it is equipped with at least two payload flight-termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;

(b) for polyethylene zero-pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other are employed for terminating the flight of the balloon envelope;

(c) the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.

3.4. A heavy unmanned free balloon shall not be operated under the following conditions:

(a) in an area where ground-based SSR equipment is in use, unless it is equipped with a secondary surveillance radar transponder, with pressure-altitude reporting capability, which is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; or

(b) in an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, which is continuously operating or which can be turned on when necessary by the tracking station.

3.5. An unmanned free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point shall not be operated unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.

3.6. A heavy unmanned free balloon shall not be operated below 18 000 m (60 000 ft) pressure-altitude at night or during any other period prescribed by the competent authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted.

3.7. A heavy unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long shall not be operated during night below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.

4. TERMINATION

4.1. The operator of a heavy unmanned free balloon shall activate the appropriate termination devices required by 3.3(a) and (b):

(a) when it becomes known that weather conditions are less than those prescribed for the operation;

(b) if a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or

(c) prior to unauthorised entry into the airspace over another State's territory.

5. FLIGHT NOTIFICATION

5.1. Pre-flight notification

5.1.1. Early notification of the intended flight of an unmanned free balloon in the medium or heavy category shall be made to the appropriate air traffic services unit not less than seven days before the date of the intended flight.

5.1.2. Notification of the intended flight shall include such of the following information as may be required by the appropriate air traffic services unit:

(a) balloon flight identification or project code name;

(b) balloon classification and description;

(c) SSR code, aircraft address or NDB frequency as applicable;

(d) operator's name and telephone number;

(e) launch site;

(f) estimated time of launch (or time of commencement and completion of multiple launches);

(g) number of balloons to be launched and the scheduled interval between launches (if multiple launches);

(h) expected direction of ascent;

(i) cruising level(s) (pressure-altitude);

(j) the estimated elapsed time to pass 18 000 m (60 000 ft) pressure-altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location. If the operation consists of continuous launchings, the time to be included shall be the estimated time at which the first and the last in the series will reach the appropriate level (e.g. 122136Z–130330Z);

(k) the estimated date and time of termination of the flight and the planned location of the impact/recovery area. In the case of balloons carrying out flights of long duration, as a result of which the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term 'long duration' shall be used. If there is to be more than one location of impact/recovery, each location shall be listed together with the appropriate estimated time of impact. If there is to be a series of continuous impacts, the time to be included shall be the estimated time of the first and the last in the series (e.g. 070330Z–072300Z).

5.1.3. Any changes in the pre-launch information notified in accordance with point 5.1.2 shall be forwarded to the ATS unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

5.2. Notification of launch

5.2.1. Immediately after a medium or heavy unmanned free balloon is launched the operator shall notify the appropriate air traffic services unit of the following:

(a) balloon flight identification;

(b) launch site;

(c) actual time of launch;

(d) estimated time at which 18 000 m (60 000 ft) pressure-altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and

(e) any changes to the information previously notified in accordance with 5.1.2(g) and (h).

5.3. Notification of cancellation

5.3.1. The operator shall notify the appropriate air traffic services unit immediately it is known that the intended flight of a medium or heavy unmanned free balloon, previously notified in accordance with paragraph 5.1, has been cancelled.

6. POSITION RECORDING AND REPORTS

6.1. The operator of a heavy unmanned free balloon operating at or below 18 000 m (60 000 ft) pressure-altitude shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 2 hours.

6.2. The operator of a heavy unmanned free balloon operating above 18 000 m (60 000 ft) pressure-altitude shall monitor the flight progress of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 24 hours.

6.3. If a position cannot be recorded in accordance with 6.1 and 6.2, the operator shall immediately notify the appropriate air traffic services unit. This notification shall include the last recorded position. The appropriate air traffic services unit shall be notified immediately when tracking of the balloon is re-established.

6.4. One hour before the beginning of planned descent of a heavy unmanned free balloon, the operator shall forward to the appropriate ATS unit the following information regarding the balloon:

(a) the current geographical position;

(b) the current level (pressure-altitude);

(c) the forecast time of penetration of 18 000 m (60 000 ft) pressure-altitude, if applicable;

(d) the forecast time and location of ground impact.

6.5. The operator of a heavy or medium unmanned free balloon shall notify the appropriate air traffic services unit when the operation is ended.

GM1 to Appendix 2(3.3b)) OPERATING LIMITATIONS AND EQUIPMENT REQUIREMENTS

ED Decision 2013/013/R

SUPER-PRESSURE BALLOONS

Super-pressure balloons do not require flight termination devices as they quickly rise after payload discharge and burst without the need for a device or system designed to puncture the balloon envelope. In this context a super-pressure balloon is a simple non-extensible envelope capable of withstanding a differential of pressure, higher inside than out. It is inflated so that the smaller night-time pressure of the gas still fully extends the envelope. Such a super-pressure balloon will keep essentially constant level until too much gas diffuses out of it.

APPENDIX 3 TABLE OF CRUISING LEVELS

Regulation (EU) No 923/2012

1.1. The cruising levels to be observed are as follows:

TRACK[1]											
From 000 degrees to 179 degrees						From 180 degrees to 359 degrees					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1000	300	—	—	—	020	2000	600	—	—	—
030	3000	900	035	3500	1050	040	4000	1200	045	4500	1350
050	5000	1500	055	5500	1700	060	6000	1850	065	6500	2000
070	7000	2150	075	7500	2300	080	8000	2450	085	8500	2600
090	9000	2750	095	9500	2900	100	10000	3050	105	10500	3200
110	11000	3350	115	11500	3500	120	12000	3650	125	12500	3800
130	13000	3950	135	13500	4100	140	14000	4250	145	14500	4400
150	15000	4550	155	15500	4700	160	16000	4900	165	16500	5050
170	17000	5200	175	17500	5350	180	18000	5500	185	18500	5650
190	19000	5800	195	19500	5950	200	20000	6100	205	20500	6250
210	21000	6400	215	21500	6550	220	22000	6700	225	22500	6850
230	23000	7000	235	23500	7150	240	24000	7300	245	24500	7450
250	25000	7600	255	25500	7750	260	26000	7900	265	26500	8100
270	27000	8250	275	27500	8400	280	28000	8550	285	28500	8700
290	29000	8850				300	30000	9150			
310	31000	9450				320	32000	9750			
330	33000	10050				340	34000	10350			
350	35000	10650				360	36000	10950			
370	37000	11300				380	38000	11600			
390	39000	11900				400	40000	12200			
410	41000	12500				430	43000	13100			
450	45000	13700				470	47000	14350			
490	49000	14950				510	51000	15550			
etc.	etc.	etc. etc.				etc.	etc.	etc.			

[1] Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the competent authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

APPENDIX 4 ATS AIRSPACE CLASSES — SERVICES PROVIDED AND FLIGHT REQUIREMENTS

Regulation (EU) 2016/1185

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

Class	Type of flight	Separation provided	Service provided	Speed limitation[1]	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
	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

[1] 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. Competent authority may also exempt aircraft types, which for technical or safety reasons, cannot maintain this speed.

Class	Type of flight	Separation provided	Service provided	Speed limitation[1]	Radio communication capability requirement	Continuous two-way air-ground voice communication required	Subject to an ATC clearance
	VFR	Nil	Traffic information as far as practical	250 kts IAS below 3 050 m (10 000 ft) AMSL	No[1]	No[1]	No
F	IFR	IFR from IFR as far as practical	Air traffic advisory service; flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes[2]	No[1]	No
	VFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	No[1]	No[1]	No
G	IFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	Yes[1]	No[1]	No
	VFR	Nil	Flight information service if requested	250 kts IAS below 3 050 m (10 000 ft) AMSL	No[1]	No[1]	No

[1] Pilots shall maintain continuous air-ground voice communication watch and establish two-way communication, as necessary, on the appropriate communication channel in RMZ.

[2] 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.

GM1 to Appendix 4 ATS airspace classes — services provided and flight requirements

ED Decision 2013/013/R

GENERAL

The purpose of this Appendix is to show the requirements related to each specific airspace class in a concise manner. Therefore, it does not provide any specifications additional to those already expressed in the implementing rule.

APPENDIX 5 TECHNICAL SPECIFICATIONS RELATED TO AIRCRAFT OBSERVATIONS AND REPORTS BY VOICE COMMUNICATIONS

Regulation (EU) 2016/1185

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 mountain wave — 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 MOUTAINWAVE 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 of the model set out in point A 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.

1.1.2. Condition prompting the issuance of a special air-report are to be selected from the list presented in point 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 using the volcanic activity reporting form (Model VAR) set out in point B. 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 issued as soon as practicable after a phenomenon calling for a special air-report has been observed.

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 point SERA.14050.

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 with '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 issuing 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 by 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', and

— 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 'MOUNTAIN WAVE 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 duststorm or sandstorm as 'DUSTSTORM HEAVY' 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 agreed upon between MET and ATS providers and the aircraft operator.

3. FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS

When receiving special air-reports, ATS 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 the 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 with '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 2

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 mountain wave 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.

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

4.1. Reporting of wind shear

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

4.1.2. 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 ATS unit as soon as practicable unless the pilot-in-command is aware that the appropriate ATS unit has already been so advised by a preceding aircraft.

4.2. Post-flight reporting of volcanic activity

4.2.1. 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 agreed upon between MET and ATS providers and the aircraft operator.

4.2.2. The completed report of volcanic activity received by an aerodrome 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 FEATURES OF ERUPTION	☐ (a) Lightning		☐ (b) Glow		☐ (c) Large rocks
	☐ (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.)					

GM1 to Appendix 5 (2 — Section 1) DETAILED REPORTING INSTRUCTIONS

ED Decision 2016/023/R

POSITION

Example:

'4620North07805West', '4620North07800West', '4600North07800West', LN ('LIMA NOVEMBER'), 'MAY', 'HADDY' or 'DUB 180 DEGREES 40 MILES'

GM1 to Appendix 5 (2 — Section 1) DETAILED REPORTING INSTRUCTIONS

ED Decision 2016/023/R

FLIGHT LEVEL OR ALTITUDE

Example:

'FLIGHT LEVEL 310'

GM1 to Appendix 5 (2 — Section 3) DETAILED REPORTING INSTRUCTIONS

ED Decision 2016/023/R

PHENOMENON PROMPTING A SPECIAL AIR-REPORT - VOLCANIC ASH CLOUD, PRE-ERUPTION VOLCANIC ACTIVITY, OR VOLCANIC ERUPTION

In case of volcanic ash cloud, pre-eruption volcanic activity, or volcanic eruption, in accordance with SERA.12005, a post-flight report should also be made on the special air-report of volcanic activity form (Model VAR).

GM1 to Appendix 5 (3) FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS

ED Decision 2016/023/R

AIRCRAFT IDENTIFICATION

Example:

'New Zealand 103' as 'ANZ103'

GM1 to Appendix 5 (3 — Section 1) FORWARDING OF METEOROLOGICAL INFORMATION RECEIVED BY VOICE COMMUNICATIONS

ED Decision 2016/023/R

POSITION

Example:

'4620N07805W', '4620N078W', '46N078W', 'LN', 'MAY', 'HADDY' or 'DUB180040'.

GM1 to Appendix 5 (1.1.4 and 2.1) SPECIAL AIR-REPORTS

ED Decision 2016/023/R

Examples of special air reports by voice communication

AS SPOKEN IN RADIOTELEPHONY	AS RECORDED BY THE AIR TRAFFIC SERVICES UNIT AND FORWARDED TO THE METEOROLOGICAL OFFICE CONCERNED
I.-[1] AIREP SPECIAL CLIPPER WUN ZERO WUN POSITION FIFE ZERO FOWer FIFE NORTH ZERO TOO ZERO WUN FIFE WEST WUN FIFE TREE SIX FLIGHT LEVEL TREE WUN ZERO CLIMBING TO FLIGHT LEVEL TREE FIFE ZERO THUNDERSTORMS WITH HAIL	I.- ARS PAA101 5045N02015W 1536 F310 ASC F350 TSGR
II.-[2] SPECIAL NIUGINI TOO SEVen TREE OVER MADANG ZERO AIT FOWer SIX WUN NINer TOUSAND FEET TURBULENCE SEVERE	II.- ARS ANG273 MD 0846 19000FT TURB SEV

[1] A special air-report which is required because of the occurrence of widespread thunderstorms with hail.

[2] A special air-report which is required because of severe turbulence. The aircraft is on QNH altimeter setting

SUPPLEMENT TO THE ANNEX

Regulation (EU) 2016/118

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

ICAO ANNEX 2

Differences between this Regulation and the International Standards contained in Annex 2 to the Convention on International Civil Aviation, as amended

Difference A2-01	
ICAO Annex 2 Chapter 3 3.2.2.	New Provision. Implementing Regulation (EU) No 923/2012, SERA.3210(b), specifies: '(b) An aircraft that is aware that the manoeuvrability of another aircraft is impaired shall give way to that aircraft.'
Difference A2-02	
ICAO Annex 2 Chapter 3 3.2.3.2(b)	Implementing Regulation (EU) No 923/2012, paragraph SERA.3215(b)(2), specifies (with the addition to ICAO Standard in Annex 2, 3.2.3.2(b) of the underlined text): '(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;'
Difference A2-03	
ICAO Annex 2 Chapter 3 3.2.5(c) and (d)	Implementing Regulation (EU) No 923/2012, paragraph SERA.3225 differs from ICAO Standard in Annex 2, 3.2.5(c) and 3.2.5(d) in that it specifies that subparagraphs (c) and (d) do not apply to balloons: '(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.'
Difference A2-04	
ICAO Annex 2 Chapter 3 3.3.1.2.	ICAO Annex 2, 3.3.1.2 is replaced with point SERA.4001(b) of Implementing Regulation (EU) No 923/2012. The differences between that ICAO Standard and that Union regulation are as follows: With regards to VFR flights planned to operate across international borders, the Union regulation (point 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, the following requirement is added to point SERA.4001(b)(6) of that Union regulation: '(6) any flight planned to operate at night, if leaving the vicinity of an aerodrome'
Difference A2-05	
ICAO Annex 2 Chapter 3 3.2.2.4.	New Provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.3210(c)(3)(i) differs from ICAO Standard in Annex 2, 3.2.2.4 by specifying that: '(i) Sailplanes overtaking. A sailplane overtaking another sailplane may alter its course to the right or to the left.'
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Difference A2-07	
ICAO Annex 2 Chapter 4 4.6.	ICAO Annex 2, 4.6, is replaced with Implementing Regulation (EU) No 923/2012 SERA.5005, introducing the obstacle clearance criteria in (f), as follows: '(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 (1000 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.'
Difference A2-08	
ICAO Annex 2 Chapter 3 3.8 and Appendix 2	The words 'in distress' of Chapter 3 Part 3.8, are not included in Union law, thus enlarging the scope of escort missions to any type of flight requesting such service. Furthermore the provisions contained in Appendix 2 Parts 1.1 to 1.3 inclusive as well as those found in Attachment A, are not contained in Union law.

ICAO ANNEX 3

Differences between this Regulation and the International Standards contained in Annex 3 to the Convention on International Civil Aviation, as amended.

Difference A3-01	
ICAO Annex 3 Chapter 5	New provision. Point SERA.12005 of Implementing Regulation (EU) No 923/2012 specifies: (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.

ICAO ANNEX 10

Differences between this Regulation and the International Standards contained in Annex 10 to the Convention on International Civil Aviation, as amended.

Difference A10-01	
ICAO Annex 10 Volume II Chapter 5 5.2.1.4.1	ICAO Annex 10, Volume II, Chapter 5.2.1.4.1 is transposed in point SERA.14035 of Implementing Regulation (EU) No 923/2012 with some differences. The differences between that ICAO Standard and that 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 1000 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 point (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 point (a)(1) with the decimal point in appropriate sequence indicated by the word 'DECIMAL'. (6) All six digits of the numerical designator shall be used to identify the transmitting channel in Very High Frequency (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.
Difference A10-02	
ICAO Annex 10 Volume II Chapter 5 5.2.1.7.3.2.3	ICAO Annex 10, Volume II, Chapter 5.2.1.7.3.2.3 is transposed in point SERA.14055 of Implementing Regulation (EU) No 923/2012 with a difference. The difference between that ICAO Standard and that EU Regulation is as follows: SERA.14055 Radiotelephony procedures (b) (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. For transfers of communication within one ATS unit, the call sign of the ATS unit may be omitted, when so authorised by the competent authority.

ICAO ANNEX 11

Differences between this Regulation and the International Standards contained in Annex 11 to the Convention on International Civil Aviation, as amended.

Difference A11-01	
ICAO Annex 11 Chapter 2 Paragraph 2.25.5	Implementing Regulation (EU) No 923/2012 SERA.3401(d)(1) differs from ICAO Annex 11, standard 2.25.5 by stating that 'Time checks shall be given at least to the nearest ~~half~~ minute'
Difference A11-02	
ICAO Annex 11 Chapter 2 Paragraph 2.6.1	Exemption possibility. Implementing Regulation (EU) No 923/2012 paragraph SERA.6001 allows aircraft to exceed the 250 knot speed limit where approved by the competent authority for aircraft types, which for technical or safety reasons, cannot maintain this speed
Difference A11-03	
ICAO Annex 11 Chapter 3	New provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.8005(b), specifies:

	(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 3050 m (10000 ft) during climb or descent, during day in visual meteorological conditions.
Difference A11-04	
ICAO Annex 11 Chapter 3	Implementing Regulation (EU) No 923/2012, paragraph SERA.8015, specifies (with the addition to ICAO Standard in Annex 11, 3.7.3.1 of the underlined text): (e) 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.
Difference A11-05	
ICAO Annex 11 Chapter 3	Implementing Regulation (EU) No 923/2012, paragraph SERA.8015(e)(2), specifies (with the addition to ICAO Standard in Annex 11, 3.7.3.1.1 of the underlined text): (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.
Difference A11-06	
ICAO Annex 11 Chapter 3	New provision. Point SERA.5010 of Implementing Regulation (EU) No 923/2012 specifies: 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, but not limited to, medical flights, search and rescue operations and fire-fighting, the following additional conditions shall be applied: (a) such flights may be conducted during day only, unless otherwise permitted by the competent authority; ~~(a)~~(b) by the pilot: (1) clear of cloud and with the surface in sight; (2) the flight visibility is not less than 1500 m or, for helicopters, not less than 800 m; (3) fly at a 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 (c) an air traffic control unit shall not issue a Special VFR clearance to aircraft to 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: ~~(b) by ATC:~~ ~~(1) during day only, unless otherwise permitted by the competent authority;~~ ~~(2)~~(1) the ground visibility is not less than 1500 m or, for helicopters, not less than 800 m; (2) the ceiling is less than 180 m (600 ft).
Difference A03-07	
ICAO Annex 3 Chapter 5	New provision. Implementing Regulation (EU) No 923/2012, paragraph SERA.12005, specifies: (b) Competent authorities shall prescribe as necessary other conditions which shall be reported by all aircraft when encountered or observed.