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PROPOSAL

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	7 December 2015
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	COM(2015) 613 final ANNEXES 1 to 10
Subject:	ANNEXES to the Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and repealing Regulation (EC) No 216/2008 of the European Parliament and of the Council

Delegations will find attached document COM(2015) 613 final ANNEXES 1 to 10.

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ANNEXES 1 to 10

ANNEXES

to the

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and repealing Regulation (EC) No 216/2008 of the European Parliament and of the Council

{SWD(2015) 262 final}
{SWD(2015) 263 final}

ANNEX I

Aircraft referred to in Article 2(3)(d)

Categories of aircraft to which the Regulation does not apply:

(a) historic aircraft meeting the following criteria:

(i) simple aircraft whose:

– initial design was established before 1 January 1955, and

– production has been stopped before 1 January 1975;

or

(ii) aircraft having a clear historical relevance, related to:

– a participation in a noteworthy historical event,

– a major step in the development of aviation, or

– a major role played into the armed forces of a Member State;

(b) aircraft specifically designed or modified for research, experimental or scientific purposes, and likely to be produced in very limited numbers;

(c) manned aircraft at least 51 % of which is built by an amateur, or a non-profit making association of amateurs, for their own purposes and without any commercial objective;

(d) aircraft that have been in the service of military forces, unless the aircraft is of a type for which a design standard has been adopted by the Agency;

(e) aeroplanes having the stall speed or the minimum steady flight speed in landing configuration not exceeding 35 knots calibrated air speed (CAS) and having no more than two seats, as well as helicopters and powered parachutes having no more than two seats, that have a maximum take-off mass (MTOM), as recorded by the Member States, of no more than:

(i) 300 kg for a land plane/helicopter, single-seater;

(ii) 450 kg for a land plane/helicopter, two-seater;

(iii) 330 kg for an amphibian or floatplane/helicopter single-seater;

(iv) 495 kg for an amphibian or floatplane/helicopter two-seater, provided that, where operating both as a floatplane/helicopter and as a land plane/helicopter, it falls below both MTOM limits, as appropriate;

(v) 472,5 kg for a land plane, two-seater equipped with an airframe mounted total recovery parachute system;

(vi) 540 kg for a land plane, two-seater equipped with an airframe mounted total recovery parachute system and equipped with electric propulsion system;

(vii) 315 kg for a land plane single-seater equipped with an airframe mounted total recovery parachute system;

(viii) 365 kg for a land plane single-seater equipped with an airframe mounted total recovery parachute system and equipped with electric propulsion system;

(f) single and two-seater gyroplanes with a MTOM not exceeding 560 kg;

(g) sailplanes and powered sailplanes with a MTOM , of no more than 250 kg when single-seater or 400 kg when two-seater, including those which are foot launched;

(h) replicas of aircraft meeting the criteria of points (a) or (d), for which the structural design is similar to the original aircraft;

(i) hot-air balloons having a single occupancy and a maximum design hot air volume of not more than 900 m^3;

(j) any other manned aircraft which has a maximum empty mass, including fuel, of no more than 70 kg.

ANNEX II

Essential requirements for airworthiness

1. PRODUCT INTEGRITY:

Product integrity must be assured for all anticipated flight conditions for the operational life of the aircraft. Compliance with all requirements must be shown by assessment or analysis, supported, where necessary, by tests.

1.1. Structures and materials:

1.1.1. The integrity of the structure must be ensured throughout, and sufficiently beyond, the operational envelope for the aircraft, including its propulsion system, and maintained for the operational life of the aircraft.

1.1.2. All parts of the aircraft, the failure of which could reduce the structural integrity, must comply with the following conditions without detrimental deformation or failure. This includes all items of significant mass and their means of restraint.

(a) All combinations of load reasonably expected to occur within and sufficiently beyond, the weights, centre of gravity range, operational envelope and life of the aircraft must be considered. This includes loads due to gusts, manoeuvres, pressurisation, movable surfaces, control and propulsion systems both in flight and on the ground.

(b) Consideration must be given to the loads and likely failures induced by emergency landings either on land or water.

(c) As appropriate to the type of operation, dynamic effects must be covered in the structural response to these loads, taking into account the size and configuration of the aircraft.

1.1.3. The aircraft must be free from any aeroelastic instability and excessive vibration.

1.1.4. The manufacturing processes and materials used in the construction of the aircraft must result in known and reproducible structural properties. Any changes in material performance related to the operational environment must be accounted for.

1.1.5. It must be ensured, to the extent practicable, that the effects of cyclic loading, environmental degradation, accidental and discrete source damage do not reduce the structural integrity below an acceptable residual strength level. All necessary instructions for ensuring continued airworthiness in this regard must be promulgated.

1.2. Propulsion:

1.2.1. The integrity of the propulsion system (i.e. engine and, where appropriate, propeller) must be demonstrated throughout and sufficiently beyond, the operational envelope of the propulsion system and must be maintained for the operational life of the

propulsion system, taking into account the role of the propulsion system in the overall safety concept of the aircraft.

1.2.2. The propulsion system must produce, within its stated limits, the thrust or power demanded of it at all required flight conditions, taking into account environmental effects and conditions.

1.2.3. The manufacturing process and materials used in the construction of the propulsion system must result in known and reproducible structural behaviour. Any changes in material performance related to the operational environment must be accounted for.

1.2.4. The effects of cyclic loading, environmental and operational degradation and likely subsequent part failures must not reduce the integrity of the propulsion system below acceptable levels. All necessary instructions for ensuring continued airworthiness in this regard must be promulgated.

1.2.5. All necessary instructions, information and requirements for the safe and correct interface between the propulsion system and the aircraft must be promulgated.

1.3. Systems and equipment (other than non-installed equipment):

1.3.1. The aircraft must not have design features or details that experience has shown to be hazardous.

1.3.2. The aircraft, including those systems, and equipment required for the assessment of the type design, or by operating rules, must function as intended under any foreseeable operating conditions, throughout and sufficiently beyond, the operational envelope of the aircraft, taking due account of the system or equipment operating environment. Other systems or equipment not required for type-certification, or by operating rules, whether functioning properly or improperly, must not reduce safety and must not adversely affect the proper functioning of any other system or equipment. Systems and equipment must be operable without needing exceptional skill or strength.

1.3.3. The aircraft systems and equipment, considered separately and in relation to each other, must be designed such that any catastrophic failure condition does not result from a single failure not shown to be extremely improbable and an inverse relationship must exist between the probability of a failure condition and the severity of its effect on the aircraft and its occupants. With respect to the single failure criterion above, it is accepted that due allowance must be made for the size and broad configuration of the aircraft and that this may prevent this single failure criterion from being met for some parts and some systems on helicopters and small aeroplanes.

1.3.4. Information needed for the safe conduct of the flight and information concerning unsafe conditions must be provided to the crew or maintenance personnel, as appropriate, in a clear, consistent and unambiguous manner. Systems, equipment and controls, including signs and announcements must be designed and located to minimise errors which could contribute to the creation of hazards.

1.3.5. Design precautions must be taken to minimise the hazards to the aircraft and occupants from reasonably probable threats, including information security threats,

both inside and external to the aircraft, including protecting against the possibility of a significant failure in, or disruption of, any non-installed equipment.

1.4. Non-installed equipment:

1.4.1. Non-installed equipment must perform its safety function or function relevant for safety as intended under any foreseeable operating conditions unless that function can also be performed by other means.

1.4.2. Non-installed equipment must be operable without needing exceptional skill or strength.

1.4.3. Non-installed equipment must be designed to minimise errors which could contribute to the creation of hazards.

1.4.4. Non-installed equipment, whether functioning properly or improperly, must not reduce safety and must not adversely affect the proper functioning of any other equipment, system or appliance.

1.5. Continuing airworthiness:

1.5.1. All necessary documents including instructions for continuing airworthiness must be established and made available to ensure that the airworthiness standard related to the aircraft type and any associated part is maintained throughout the operational life of the aircraft.

1.5.2. Means must be provided to allow inspection, adjustment, lubrication, removal or replacement of parts and non-installed equipment as necessary for continuing airworthiness.

1.5.3. The instructions for continuing airworthiness must be in the form of a manual, or manuals, as appropriate for the quantity of data to be provided. The manuals must cover maintenance and repair instructions, servicing information, trouble-shooting and inspection procedures, in a format that provides for a practical arrangement.

1.5.4. The instructions for continuing airworthiness must contain airworthiness limitations that set forth each mandatory replacement time, inspection interval and related inspection procedure.

2. AIRWORTHINESS ASPECTS OF PRODUCT OPERATION

2.1. The following must be shown to have been addressed to ensure a satisfactory level of safety for those on board or on the ground during the operation of the product:

(a) The kinds of operation for which the aircraft is approved must be established and limitations and information necessary for safe operation, including environmental limitations and performance, must be established.

(b) The aircraft must be safely controllable and manoeuvrable under all anticipated operating conditions including following the failure of one or, if appropriate, more propulsion systems, taking into account the size and configuration of the aircraft. Due account must be taken of pilot strength, flight deck environment,

pilot workload and other human-factor considerations and of the phase of flight and its duration.

(c) It must be possible to make a smooth transition from one flight phase to another without requiring exceptional piloting skill, alertness, strength or workload under any probable operating condition.

(d) The aircraft must have such stability as to ensure that the demands made on the pilot are not excessive taking into account the phase of flight and its duration.

(e) Procedures for normal operations, failure and emergency conditions must be established.

(f) Warnings or other deterrents intended to prevent exceedance of the normal flight envelope, must be provided, as appropriate to the aircraft type.

(g) The characteristics of the aircraft and its systems must allow a safe return from extremes of the flight envelope that may be encountered.

2.2. The operating limitations and other information necessary for safe operation must be made available to the crew members.

2.3. Product operations must be protected from hazards resulting from adverse external and internal conditions, including environmental conditions.

(a) In particular, and as appropriate to the type of operation, no unsafe condition must occur from exposure to phenomena such as, but not limited to, adverse weather, lightning, bird strike, high frequency radiated fields, ozone, etc., reasonably expected to occur during product operation, taking into account the size and configuration of the aircraft.

(b) Cabin compartments, as appropriate to the type of operations, must provide passengers with suitable transport conditions and adequate protection from any expected hazard arising in flight operations or resulting in emergency situations, including fire, smoke, toxic gases and rapid decompression hazards, taking into account the size and configuration of the aircraft. Provisions must be made to give occupants every reasonable chance of avoiding serious injury and quickly evacuating the aircraft and to protect them from the effect of the deceleration forces in the event of an emergency landing on land or water. Clear and unambiguous signs or announcements must be provided, as necessary, to instruct occupants in appropriate safe behaviour and the location and correct use of safety equipment. Required safety equipment must be readily accessible.

(c) Crew compartments, as appropriate to the type of operations, must be arranged in order to facilitate flight operations, including means providing situational awareness, and management of any expected situation and emergencies. The environment of crew compartments must not jeopardise the crew's ability to perform their tasks and its design must be such as to avoid interference during operation and misuse of the controls.

3. ORGANISATIONS (INCLUDING NATURAL PERSONS UNDERTAKING DESIGN, MANUFACTURE OR MAINTENANCE)

3.1. As appropriate to the type of activity, organisation approvals must be issued when the following conditions are met:

(a) the organisation must have all the means necessary for the scope of work. These means comprise, but are not limited to, the following: facilities, personnel, equipment, tools and material, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping.

(b) as appropriate for the type of activity undertaken and the size of the organisation, the organisation must implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system.

(c) the organisation shall establish arrangements with other relevant organisations, as necessary, to ensure continuing compliance with these essential requirements for airworthiness.

(d) the organisation shall establish an occurrence reporting system as part of the management system under point (b) and the arrangements under point (c), in order to contribute to the aim of continuous improvement of safety. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014.

3.2. In the case of maintenance training organisations, the conditions under points 3.1(c) and 3.1(d) do not apply.

ANNEX III

Essential requirements for environmental compatibility related to products

1. Products must be designed to be as quiet as possible, taking into account point 4.

2. Products must be designed to minimize emissions to the extent possible taking into account point 4.

3. Products must be designed to minimise the emissions arising from the evaporation or discharge of fluids, taking into account point 4.

4. Any trade-offs between design measures intended to minimise noise, the emission of different species and the discharge of fluids must be taken into account.

5. The total range of normal operating conditions and geographical areas where the aircraft noise and emissions are of concern, shall be considered when minimising noise and emissions.

6. The aircraft systems and equipment required for environmental protection reasons must be designed, produced and maintained to function as intended under any foreseeable operating condition. Their reliability must be adequate in relation to their intended effect on the environmental compatibility of the product.

7. Any instructions, procedures, means, manuals, limitations and inspections needed to ensure continuing compliance of an aviation product with these essential requirements must be established and provided to the intended users in a clear manner.

8. The organisations involved in the design, production and maintenance of aviation products must:

   (a) have all means necessary to ensure compliance of an aviation product with these essential requirements; and

   (b) establish arrangements with other relevant organisations as necessary to ensure compliance of an aviation product with these essential requirements.

ANNEX IV

Essential requirements for aircrew

1. PILOT TRAINING

1.1. General

A person undertaking training to fly an aircraft must be sufficiently mature educationally, physically and mentally to acquire, retain and demonstrate the relevant theoretical knowledge and practical skill.

1.2. Theoretical knowledge

A pilot must acquire and maintain a level of knowledge appropriate to the functions exercised on the aircraft and proportionate to the risks associated to the type of activity. Such knowledge must include at least the following:

(a) air law;

(b) aircraft general knowledge;

(c) technical matters related to the category of the aircraft;

(d) flight performance and planning;

(e) human performance and limitations;

(f) meteorology;

(g) navigation;

(h) operational procedures, including resource management;

(i) principles of flight;

(j) communications; and

(k) non-technical skills, including the recognition and management of threats and errors.

1.3. Demonstration and maintenance of theoretical knowledge

1.3.1. The acquisition and retention of theoretical knowledge must be demonstrated by continuous assessment during training and, where appropriate, by examinations.

1.3.2. An appropriate level of competence in theoretical knowledge must be maintained. Compliance must be demonstrated by regular assessments, examinations, tests or checks. The frequency of examinations, tests or checks must be proportionate to the level of risk associated with the activity.

1.4. Practical skill

A pilot must acquire and maintain the practical skills as appropriate to exercise his/her functions on the aircraft. Such skills must be proportionate to the risks associated to the type of activity and must cover, if appropriate to the functions exercised on the aircraft, the following:

(a) pre-flight and in-flight activities, including aircraft performance, mass and balance determination, aircraft inspection and servicing, fuel/energy planning, weather appreciation, route planning, airspace restrictions and runway availability;

(b) aerodrome and traffic-pattern operations;

(c) collision avoidance precautions and procedures;

(d) control of the aircraft by external visual reference;

(e) flight manoeuvres, including in critical situations, and associated 'upset' manoeuvres, as technically achievable;

(f) normal and cross-wind take-offs and landings;

(g) flight by reference solely to instruments, as appropriate to the type of activity;

(h) operational procedures, including team skills and resource management, as appropriate to the type of operation, whether single or multi-crew;

(i) navigation and implementation of rules of the air and related procedures, using as appropriate, visual reference or navigation aids;

(j) abnormal and emergency operations, including simulated aircraft equipment malfunctions;

(k) compliance with air traffic services and communications procedures;

(l) aircraft type or class specific aspects;

(m) additional practical skill training that may be required to mitigate risks associated with specific activities; and

(n) non-technical skills, including the recognition and management of threats and errors, using an adequate assessment methodology in conjunction with the technical skills assessment.

1.5. Demonstration and maintenance of practical skill

1.5.1. A pilot must demonstrate the ability to perform the procedures and manoeuvres with a degree of competence appropriate to the functions exercised on the aircraft, by:

(a) operating the aircraft within its limitations;

(b) exercising good judgement and airmanship;

(c) applying aeronautical knowledge;

(d) maintaining control of the aircraft at all times in such a manner that the successful outcome of a procedure or manoeuvre is assured; and

(e) non-technical skills, including the recognition and management of threats and errors, using an adequate assessment methodology in conjunction with the technical skills assessment.

1.5.2. An appropriate level of competence in practical skill must be maintained. Compliance must be demonstrated by regular assessments, examinations, tests or checks. The frequency of examinations, tests or checks must be proportionate to the level of risk associated with the activity.

1.6. Language Proficiency

A pilot must have demonstrated language proficiency to a degree appropriate to the functions exercised on the aircraft. Such demonstrated proficiency shall include:

(a) the ability to understand weather information documents;

(b) the use of aeronautical en-route, departure and approach charts and associated aeronautical information documents; and

(c) the ability to communicate with other flight crew and air navigation services during all phases of flight, including flight preparation.

1.7. Flight simulation training devices

When a flight simulation training device (FSTD) is used for training, or for demonstration that practical skill is acquired or maintained, this FSTD must be qualified to a given level of performance in those areas, which are relevant to completing the related task. In particular, the replication of configuration, handling qualities, aircraft performance, and systems behaviour must adequately represent the aircraft.

1.8. Training course

1.8.1. Training must be executed through a training course.

1.8.2. A training course must meet the following conditions:

(a) a syllabus must be developed for each type of course; and

(b) the training course must comprise a breakdown of theoretical knowledge and practical flight instruction (including synthetic training), if applicable.

1.9. Instructors

1.9.1. Theoretical instruction

Theoretical instruction must be given by appropriately qualified instructors. They must:

(a) have appropriate knowledge in the field where instruction is to be given; and

(b) be capable of using appropriate instructional techniques.

1.9.2. Flight and flight simulation instruction

Flight and flight simulation instruction must be given by appropriately qualified instructors, who have the following qualifications:

(a) meet the theoretical knowledge and the experience requirements appropriate for the instruction being given;

(b) be capable of using appropriate instructional techniques;

(c) have practised instructional techniques in those flight manoeuvres and procedures in which it is intended to provide flight instruction;

(d) have demonstrated the ability to instruct in those areas in which flight instruction is to be given, including pre-flight, post-flight and ground instruction; and

(e) receive regular refresher training to ensure that the instructional standards are maintained up to date.

Flight instructors must also be entitled to act as pilot in command on the aircraft for which instruction is being given, except for training on new aircraft types.

1.10. Examiners

Persons responsible for assessing the skill of pilots must:

(a) meet the requirements for flight or flight simulation instructors; and

(b) be capable of assessing pilot performance and conducting flight tests and checks.

2. EXPERIENCE REQUIREMENTS - PILOTS

A person acting as flight crew member, instructor or examiner must acquire and maintain sufficient experience for the functions being exercised, unless the delegated acts provide for competence to be demonstrated in accordance with point 1.5.

3. MEDICAL FITNESS - PILOTS

3.1. Medical criteria

3.1.1. All pilots must periodically demonstrate medical fitness to satisfactorily execute their functions, taking into account the type of activity. Compliance must be shown by appropriate assessment based on aero-medical best practice, taking into account the type of activity and the possible mental and physical degradation due to age.

Medical fitness, comprising physical and mental fitness, means not suffering from any disease or disability, which makes the pilot unable:

(a) to execute the tasks necessary to operate an aircraft;

(b) to perform assigned duties at any time; or

(c) to perceive correctly his/her environment.

3.1.2. Where medical fitness cannot be fully demonstrated, mitigation measures that provide equivalent flight safety may be implemented.

3.2. Aero-medical examiners

An aero-medical examiner must:

(a) be qualified and licensed in the practice of medicine;

(b) have received training in aviation medicine and regular refresher training in aviation medicine to ensure that assessment standards are maintained up to date; and

(c) have acquired practical knowledge and experience of the conditions in which pilots carry out their duties.

3.3. Aero-medical centres

Aero-medical centres must meet the following conditions:

(a) have all the means necessary for the scope of responsibilities associated with their privileges. These means comprise, but are not limited to, the following: facilities, personnel, equipment, tools and material, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) as appropriate for the type of activity undertaken and the size of the organisation, implement and maintain a management system to ensure

compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system; and

(c) establish arrangements with other relevant organisations, as necessary, to ensure continuing compliance with these requirements.

4. CABIN CREW MEMBERS

4.1. General

Cabin crew members must:

(a) be trained and checked on a regular basis to attain and maintain an adequate level of competency in order to perform their assigned safety duties; and

(b) be periodically assessed for medical fitness to safely exercise their assigned safety duties. Compliance must be shown by appropriate assessment based on aero-medical best practice.

4.2. Training course

4.2.1. When appropriate for the type of operation or privileges, training must be executed through a training course.

4.2.2. A training course must meet the following conditions:

(a) a syllabus must be developed for each type of course; and

(b) the training course must comprise a breakdown of theoretical knowledge and practical instruction (including synthetic training), if applicable.

4.3. Cabin Crew Instructors

Instruction must be given by appropriately qualified instructors. These instructors must:

(a) have appropriate knowledge in the field where instruction is to be given;

(b) be capable of using appropriate instructional techniques; and

(c) receive regular refresher training to ensure that the instructional standards are maintained up to date.

4.4. Cabin crew Examiners

Persons responsible for examination of cabin crew must:

(a) meet the requirements for cabin crew instructors; and

(b) be capable of assessing cabin crew performance and conducting examinations.

5. TRAINING ORGANISATIONS

A training organisation providing pilot or cabin crew training must meet the following requirements:

(a) have all the means necessary for the scope of responsibilities associated with their activity. These means comprise, but are not limited to, the following: facilities, personnel, equipment, tools and material, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) as appropriate for the training provided and the size of the organisation, the organisation must implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks, and aim for continuous improvement of this system; and

(c) establish arrangements with other relevant organisations, as necessary, to ensure continuing compliance with the above requirements.

ANNEX V

Essential requirements for air operations

1. GENERAL

1.1. A flight must not be performed if the crew members and, as appropriate, all other operations personnel involved in its preparation and execution are not familiar with applicable laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes planned to be used and the air navigation facilities relating thereto.

1.2. A flight must be performed in such a way that the operating procedures specified in the Flight Manual or, where required the Operations Manual, for the preparation and execution of the flight are followed. To facilitate this, a checklist system must be available for use, as applicable, by crew members in all phases of operation of the aircraft under normal, abnormal and emergency conditions and situations. Procedures must be established for any reasonably foreseeable emergency situation.

1.3. Before every flight, the roles and duties of each crew member must be defined. The pilot in command must be responsible for the operation and safety of the aircraft and for the safety of all crew members, passengers and cargo on board.

1.4. Articles or substances, which are capable of posing a significant risk to health, safety, property or the environment, such as dangerous goods, weapons and ammunition, must not be carried on any aircraft, unless specific safety procedures and instructions are applied to mitigate the related risks.

1.5. All necessary data, documents, records and information to record the respect of the conditions specified in point 5.3 must be retained for each flight and kept available for a minimum period of time compatible with the type of operation.

2. FLIGHT PREPARATION

A flight must not be commenced unless it has been ascertained by reasonable means available that all the following conditions are complied with:

(a) Adequate facilities directly required for the flight and for the safe operation of the aircraft, including communication facilities and navigation aids, are available for the execution of the flight, taking into account available Aeronautical Information Services documentation.

(b) The crew must be familiar with and passengers informed of the location and use of relevant emergency equipment. Sufficient information, related to the operation and specific to the equipment installed, regarding emergency procedures and use of cabin safety equipment must be made available to crew and passengers.

(c) The pilot in command must be satisfied that:

(i) the aircraft is airworthy as specified in point 6;

(ii) if required, the aircraft is duly registered and that appropriate certificates with respect thereto are aboard the aircraft;

(iii) instruments and equipment as specified in point 5 required for the execution of that flight are installed in the aircraft and are operative, unless waived by the applicable Minimum Equipment List (MEL) or equivalent document;

(iv) the mass of the aircraft and centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;

(v) all cabin baggage, hold luggage and cargo is properly loaded and secured; and

(vi) the aircraft operating limitations as specified in point 4 will not be exceeded at any time during the flight.

(d) Information regarding meteorological conditions for departure, destination and, where applicable, alternate aerodromes, as well as en-route conditions, must be available to the flight crew. Special attention must be given to potentially hazardous atmospheric conditions.

(e) In case of flight into known or expected icing conditions, the aircraft must be certified, equipped and/or treated to operate safely in such conditions.

(f) For a flight based on visual flight rules, meteorological conditions along the route to be flown must be such as to render compliance with these flight rules possible. For a flight based on instrument flight rules a destination and where applicable alternate aerodrome(s) where the aircraft can land must be selected, taking into account in particular the forecasted meteorological conditions, the availability of air navigation services, the availability of ground facilities and the instrument flight procedures approved by the State in which the destination and/or alternate aerodrome is located.

(g) The amount of fuel/energy for propulsion and consumables on board must be sufficient to ensure that the intended flight can be completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft and any delays that are expected in flight. In addition, a fuel/energy reserve must be carried to provide for contingencies. Procedures for in-flight fuel/energy management must be established when relevant.

3. FLIGHT OPERATIONS

With regard to flight operations, all the following conditions must be complied with:

(a) where relevant for the type of aircraft, during take-off and landing, and whenever deemed necessary by the pilot in command in the interest of safety, each crew member must be seated at their crew station and must use the provided restraint systems;

(b) where relevant for the type of aircraft, all flight crew members required to be on flight deck duty must be and remain at their station, with their seatbelts fastened except en-route for physiological or operational needs;

(c) where relevant for the type of aircraft and the type of operation, before take-off and landing, during taxiing and whenever deemed necessary in the interest of safety, the pilot in command must ensure that each passenger is properly seated and secured;

(d) a flight must be performed in such a way that appropriate separation from other aircraft is maintained and that adequate obstacle clearance is ensured, during all phases of the flight. Such separation must at least be those required by the applicable rules of the air, as appropriate to the type of operation;

(e) a flight must not be continued unless known conditions continue to be at least equivalent to those in point 2. Furthermore, for a flight based on instrument flight rules, an approach toward an aerodrome must not be continued below certain specified heights or beyond a certain position, if prescribed visibility criteria are not met;

(f) in an emergency, the pilot in command must ensure that all passengers are instructed in such emergency action as may be appropriate to the circumstances;

(g) a pilot in command must take all necessary measures so as to minimise the consequences on the flight of disruptive passenger behaviour;

(h) an aircraft must not be taxied on the movement area of an aerodrome, or its rotor must not be turned under power, unless the person at the controls is appropriately competent;

(i) the applicable in-flight fuel/energy management procedures must be used, when relevant.

4. AIRCRAFT PERFORMANCE AND OPERATING LIMITATIONS

4.1. An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent documentation must be available to the crew and kept up to date for each aircraft.

4.2. Notwithstanding 4.1., for operations with helicopters a momentary flight through the limiting height velocity envelope may be permitted, provided that an adequate level of safety is ensured.

4.3. The aircraft must be operated in accordance with the applicable environmental documentation.

4.4. A flight must not be commenced or continued unless the aircraft's scheduled performance, considering all factors which significantly affect its performance level, allows all phases of flight to be executed within the applicable distances/areas and obstacle clearances at the planned operating mass. Performance factors which significantly affect take-off, en-route and approach/landing are, particularly:

(a) operating procedures;

(b) pressure altitude of the aerodrome;

(c) temperature;

(d) wind;

(e) size, slope and condition of the take-off/landing area; and

(f) the condition of the airframe, the power plant or the systems, taking into account possible deterioration.

4.5. Such factors must be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data, as appropriate to the type of operation**.**

5. INSTRUMENTS, DATA AND EQUIPMENT

5.1. An aircraft must be equipped with all navigation, communication and other equipment necessary for the intended flight, taking account of air traffic regulations and rules of the air applicable during any phase of the flight.

5.2. When relevant, an aircraft must be equipped with all necessary safety, medical, evacuation and survival equipment, taking account of the risks associated to the areas of operation, the routes to be flown, the flight altitude and the duration of the flight.

5.3. All data necessary for the execution of the flight by the crew must be updated and available on board the aircraft taking account of applicable air traffic regulations, rules of the air, flight altitudes and areas of operation.

6. CONTINUING AIRWORTHINESS AND ENVIRONMENTAL COMPATIBILITY OF PRODUCTS

6.1. The aircraft must not be operated unless:

(a) the aircraft is in an airworthy condition and meets applicable requirements concerning the environmental compatibility of products;

(b) the operational and emergency equipment necessary for the intended flight is serviceable;

(c) the airworthiness document and, if applicable, the noise certificate of the aircraft is valid; and

(d) the maintenance of the aircraft is performed in accordance with the applicable requirements.

6.2. Before each flight or a series of consecutive flights, the aircraft must be inspected, through a pre-flight check, to determine whether it is fit for the intended flight.

6.3. The aircraft must not be operated unless it is released to service by qualified persons or organisations, after maintenance. The signed release to service must contain in particular, the basic details of the maintenance carried out.

6.4. Records necessary to demonstrate the airworthiness and environmental compatibility status of the aircraft must be kept for the period of time corresponding to the applicable continuing airworthiness requirements, until the information contained has been superseded by new information equivalent in scope and detail but in any event not less than 24 months.

6.5. All modifications and repairs must comply with the essential requirements for airworthiness and, if applicable, the environmental compatibility of products. The

substantiating data supporting compliance with the airworthiness requirements and requirements for the environmental compatibility of products must be retained.

6.6. It is the responsibility of the operator to ensure that a third party performing the maintenance complies with the operator's safety and security requirements.

7. CREW MEMBERS

7.1. The number and composition of the crew must be determined taking into account:

(a) the certification limitations of the aircraft, including if applicable, the relevant emergency evacuation demonstration;

(b) the aircraft configuration; and

(c) the type and duration of operations.

7.2. The pilot in command must have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft and of persons and/or property carried therein.

7.3. In an emergency situation, which endangers the operation or the safety of the aircraft and/or persons on board, the pilot in command must take any action he/she considers necessary in the interest of safety. When such action involves a violation of local regulations or procedures, the pilot in command must be responsible for notifying the appropriate local authority without delay.

7.4. Emergency or abnormal situations must not be simulated when passengers or cargo are being carried.

7.5. No crew member must allow their task achievement/decision making to deteriorate to the extent that flight safety is endangered because of the effects of fatigue, taking into account, *inter alia*, fatigue accumulation, sleep deprivation, number of sectors flown, night duties or time zone changes. Rest periods must provide sufficient time to enable crew members to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.

7.6. A crew member must not perform allocated duties on board an aircraft when under the influence of psychoactive substances or alcohol or when unfit due to injury, fatigue, medication, sickness or other similar causes.

8. ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT AND OTHER OPERATIONS WHICH ARE SUBJECT TO A CERTIFICATION OR DECLARATION REQUIREMENT

8.1. The operation for commercial air transport purposes and other operations of aircraft which are subject to a certification or declaration requirement must not be undertaken unless the following conditions are met:

(a) the operator must have directly or through agreements with third parties the means necessary for the scale and scope of the operations. These means

comprise but are not limited to the following: aircraft, facilities, management structure, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;

(b) the operator must use only suitably qualified and trained personnel and implement and maintain training and checking programmes for the crew members and other relevant personnel;

(c) the operator shall establish a Minimum Equipment List (MEL) or equivalent document, taking account of the following:

(i) the document must provide for the operation of the aircraft, under specified conditions, with particular instruments, items of equipment or functions inoperative at the commencement of the flight;

(ii) the document must be prepared for each individual aircraft, taking account of the operator's relevant operational and maintenance conditions; and

(iii) the MEL must be based on the Master Minimum Equipment List (MMEL), if available, and must not be less restrictive than the MMEL;

(d) as appropriate for the type of activity undertaken and the size of the organisation, the operator must implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system;

(e) the operator shall establish an occurrence reporting system, as part of the management system under point (d), in order to contribute to the aim of continuous improvement of the safety. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014.

8.2. The operation must only be undertaken in accordance with an operator's operations manual. Such manual must contain all necessary instructions, information and procedures for all aircraft operated and for operations personnel to perform their duties. Limitations applicable to flight time, flight duty periods and rest periods for crew members must be specified. The operations manual and its revisions must be compliant with the approved flight manual and be amended as necessary.

8.3. The operator shall establish procedures, as appropriate, so as to minimise the consequences to safe flight operations of disruptive passenger behaviour.

8.4. The operator must develop and maintain security programmes adapted to the aircraft and the type of operation including particularly:

(a) security of the flight crew compartment;

(b) aircraft search procedure checklist;

(c) training programmes; and

(d) protection of electronic and computer systems to prevent intentional and non-intentional system interference and corruption;

8.5. When security measures may adversely affect the safety of operations, the risks must be assessed and appropriate procedures developed to mitigate safety risks, this may necessitate the use of specialist equipment.

8.6. The operator must designate one pilot amongst the flight crew as the pilot in command.

8.7. The prevention of fatigue must be managed through a fatigue management system. For a flight, or series of flights, such a system needs to address flight time, flight-duty periods, duty and adapted rest periods. Limitations established within the fatigue management system must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, time-zone crossing, sleep deprivation, disruption of circadian cycles, night hours, positioning, cumulative duty time for given periods of time, sharing of allocated tasks between crew members, and also the provision of augmented crews.

8.8. The operator must ensure that the tasks specified in point 6.1 and those described in points 6.4 and 6.5 are controlled by an organisation responsible for the continuing airworthiness management that must meet requirements of Annex II point 3.1, and Annex III points 7 and 8.

8.9. The operator must ensure that the release to service required by point 6.3 is issued by an organisation qualified for the maintenance of products, parts and not-installed equipment. This organisation shall meet the requirements of Annex II, point 3.1

8.10. The organisation referred to in 8.8 shall establish an organisation manual providing, for use and guidance of personnel concerned, a description of all continuing airworthiness procedures of the organisation.

ANNEX VI

Essential Requirements for qualified entities

1. The qualified entity ('entity'), its Director and the staff responsible for carrying out the certification and oversight tasks, may not be involved, either directly or as authorised representatives, in the design, manufacture, marketing or maintenance of the products, parts, non-installed equipment, constituents or systems or in their operations, service provision or use. This does not exclude the possibility of an exchange of technical information between the involved organisations and the qualified entity.

   The above paragraph shall not prevent an organisation created with the aim of promoting aerial sport or leisure aviation from being eligible for accreditation as a qualified entity, on condition that it demonstrates to the satisfaction of the accrediting authority that it has put in place adequate arrangements for the prevention of conflict of interest.

2. The entity and the staff responsible for the certification and oversight tasks must carry out their duties with the greatest possible professional integrity and the greatest possible technical competence and must be free of any pressure and incentive, in particular of a financial type, which could affect their judgment or the results of their certification and oversight tasks, in particular from persons or groups of persons affected by these results.

3. The entity must employ staff and possess the means required to perform adequately the technical and administrative tasks linked with the certification and oversight process; it shall also have access to the equipment needed for exceptional checks.

4. The entity and its staff responsible for investigation must have:

   (a) sound technical and vocational training, or sufficient expertise gained through experience of relevant activities,

   (b) satisfactory knowledge of the requirements of the certification and oversight tasks they carry out and adequate experience of such processes,

   (c) the ability required to draw up statements, records and reports to demonstrate that the certification and oversight tasks have been carried out.

5. The impartiality of the staff responsible for certification and oversight tasks must be guaranteed. Their remuneration must not depend on the number of investigations carried out or on the results of such investigations.

6. The entity must take out liability insurance unless its liability is assumed by one Member State in accordance with its national law.

7. The staff of the entity must observe professional secrecy with regard to all information acquired in carrying out their tasks under this Regulation.

ANNEX VII

Essential requirements for aerodromes

1. PHYSICAL CHARACTERISTICS, INFRASTRUCTURE AND EQUIPMENT

1.1. Movement area

1.1.1. Aerodromes shall have a designated area for the landing and take-off of aircraft, which satisfies the following conditions:

(a) the landing and take-off area shall have dimensions and characteristics suitable for the aircraft intended to use the facility;

(b) the landing and take-off area, where applicable, shall have a bearing strength sufficient to support repetitive operations of the intended aircraft. Those areas not intended for repetitive operations only need to be capable of supporting the aircraft;

(c) the landing and take-off area shall be designed to drain water and to prevent standing water becoming an unacceptable risk to aircraft operations;

(d) the slope and slope changes of the landing and take-off area shall not create an unacceptable risk to aircraft operations;

(e) the surface characteristics of the landing and take-off area shall be adequate for use by the intended aircraft; and

(f) the landing and take-off area shall be free from objects which might create an unacceptable risk to aircraft operations.

1.1.2. Where there are several designated landing and take-off areas, they shall be such that they do not create an unacceptable risk to aircraft operations.

1.1.3. The designated landing and take-off area shall be surrounded by defined areas. These areas are intended to protect aircraft flying over them during take-off or landing operations or to mitigate the consequences of undershooting, running off the side or overrunning the take-off and landing area, and shall satisfy the following conditions:

(a) these areas shall have dimensions appropriate to the aircraft operations anticipated;

(b) the slope and slope changes of these areas shall not create an unacceptable risk to aircraft operations;

(c) these areas shall be free from objects which might create an unacceptable risk to aircraft operations. This shall not preclude frangible equipment to be located in those areas, if required to assist aircraft operations; and

(d) each of these areas shall have a bearing strength sufficient to serve its purpose.

1.1.4. Those areas of an aerodrome, with their associated immediate surroundings, that are to be used for taxiing or parking aircraft, shall be designed to permit safe operation of the aircraft expected to use the particular facility under all the conditions planned for, and shall satisfy the following conditions:

(a) these areas shall have a bearing strength sufficient to support repetitive operations of the intended aircraft, except for areas which are expected for only occasional use which only need to be capable of supporting the aircraft;

(b) these areas shall be designed to drain water and to prevent standing water becoming an unacceptable risk to aircraft operations;

(c) the slope and slope changes of these areas shall not create an unacceptable risk to aircraft operations;

(d) the surface characteristics of these areas shall be adequate for use by the intended aircraft; and

(e) these areas shall be free from objects which might create an unacceptable risk to aircraft. This shall not preclude parking equipment required for that area in specifically identified positions or zones.

1.1.5. Other infrastructure intended for use by aircraft shall be so designed that use of that infrastructure does not create an unacceptable risk to aircraft using it.

1.1.6. Constructions, buildings, equipment or storage areas shall be located and designed so as not to create an unacceptable risk for aircraft operations.

1.1.7. Suitable means shall be provided to prevent unauthorised persons, unauthorised vehicles or animals large enough to create an unacceptable risk to aircraft operations from entering the movement area, without prejudice to national and international animal protection provisions.

1.2. Obstacle clearances

1.2.1. To protect aircraft proceeding to an aerodrome for landing or for their departure from an aerodrome, arrival and departure routes or areas shall be established. Such routes or areas shall provide aircraft with the required clearance from obstacles located in the area surrounding the aerodrome taking due account of the local physical characteristics.

1.2.2. Such obstacle clearance shall be appropriate to the phase of flight and type of operation being conducted. It shall also take into account the equipment being used for determining the position of the aircraft.

1.3. Visual and non-visual aids and aerodrome equipment

1.3.1. Aids shall be fit for purpose, recognisable and provide unambiguous information to users under all intended operational conditions.

1.3.2. Aerodrome equipment shall function as intended under the foreseen operating conditions. Under operating conditions or in case of failure, aerodrome equipment shall not cause an unacceptable risk to aviation safety.

1.3.3. The aids and their electrical power supply system shall be so designed that failures do not result in inappropriate, misleading or insufficient information being given to users or in interruption of an essential service.

1.3.4. Suitable means of protection shall be provided to avoid damage or disturbance to such aids.

1.3.5. Sources of radiation or the presence of moving or fixed objects shall not interfere with or adversely affect the performance of aeronautical communications, navigation and surveillance systems.

1.3.6. Information on operation and use of aerodrome equipment shall be made available to relevant staff, including clear indications of the conditions which may create unacceptable risks to aviation safety.

1.4. Aerodrome data

1.4.1. Data relevant to the aerodrome and the available services shall be established and kept up to date.

1.4.2. The data shall be accurate, readable, complete and unambiguous. Appropriate integrity levels shall be maintained.

1.4.3. The data shall be made available to the users and the relevant ANS providers in a timely manner, using a sufficiently secure and expeditious method of communication.

2. OPERATIONS AND MANAGEMENT

2.1. Responsibilities of the aerodrome operator

The aerodrome operator is responsible for operation of the aerodrome. The responsibilities of the aerodrome operator are as follows:

(a) the aerodrome operator shall have, directly or through agreements with third parties, all the means necessary to ensure safe operation of aircraft at the aerodrome. These means shall include, but are not limited to, facilities, personnel, equipment and material, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) the aerodrome operator shall verify that the requirements of Section 1 are complied with at all times or take appropriate measures to mitigate the risks associated with non-compliance. Procedures shall be established and applied to make all users aware of such measures in a timely manner;

(c) the aerodrome operator shall establish and implement an appropriate aerodrome wildlife risk management programme;

(d) the aerodrome operator shall ensure, directly or through arrangement with third parties, that movements of vehicles and persons in the movement area and other operational areas are coordinated with movements of aircraft in order to avoid collisions and damage to aircraft;

(e) the aerodrome operator shall ensure that procedures to mitigate risks related to aerodrome operations in winter operation, adverse weather conditions, reduced visibility or at night, if applicable, are established and implemented;

(f) the aerodrome operator shall establish arrangements with other relevant organisations to ensure continuing compliance with these essential requirements for aerodromes. These organisations include, but are not limited to, aircraft operators, air navigation service providers, ground handling service providers, apron management service providers and other organisations whose activities or products may have an effect on aircraft safety;

(g) the aerodrome operator, shall verify that oganisations involved in storing and dispensing of fuel to aircraft have procedures to ensure that aircraft are provided with fuel which is uncontaminated and of the correct specification;

(h) manuals for maintenance of aerodrome equipment shall be available, applied in practice and cover maintenance and repair instructions, servicing information, troubleshooting and inspection procedures;

(i) the aerodrome operator shall establish and implement an aerodrome emergency plan, covering emergency scenarios that may occur at the aerodrome or in its surroundings. This plan shall be coordinated, as appropriate, with the local community emergency plan;

(j) the aerodrome operator shall ensure, directly or through agreements with third parties, that adequate aerodrome rescue and firefighting services are provided. Such services shall respond to an incident or accident with due urgency and shall include at least equipment, extinguishing agents and a sufficient number of personnel;

(k) the aerodrome operator shall use only trained and qualified personnel for aerodrome operations and maintenance and shall ensure, directly or through agreements with third parties, the implementation and maintenance of training and checking programmes to ensure the continuing competence of all relevant personnel;

(l) the aerodrome operator shall ensure that any person permitted unescorted access to the movement area or other operational areas is adequately trained and qualified for such access;

(m) the rescue and firefighting personnel shall be properly trained and qualified to operate in the aerodrome environment. The aerodrome operator shall implement and maintain training and checking programmes to ensure the continuing competence of this personnel; and

(n) all rescue and firefighting personnel potentially required to act in aviation emergencies shall periodically demonstrate their medical fitness to execute their functions satisfactorily, taking into account the type of activity. In this context, medical fitness, comprising both physical and mental fitness, means not suffering from any disease or disability which could make this personnel unable:

– to execute the tasks necessary to operate in aviation emergencies;

– to perform their assigned duties at any time; or

– to perceive their environment correctly.

2.2. Management systems

2.2.1. As appropriate for the type of activity undertaken and the size of the organisation, the aerodrome operator shall implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks, and aim for continuous improvement of this system.

2.2.2. The aerodrome operator shall establish an occurrence reporting system as part of the management system under point 2.2.1, in order to contribute to the aim of continuous improvement of safety. The analysis of information from this occurrence reporting system shall involve the parties listed in point 2.1(f) above, as appropriate. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014.

2.2.3. The aerodrome operator shall develop an aerodrome manual and operate in accordance with that manual. Such manuals shall contain all necessary instructions, information and procedures for the aerodrome, the management system and for operations personnel to perform their duties.

3. AERODROME SURROUNDINGS

3.1. The airspace around aerodrome movement areas shall be safeguarded from obstacles so as to permit the intended aircraft operations at the aerodromes without creating an unacceptable risk caused by the development of obstacles around the aerodrome. Obstacle monitoring surfaces shall therefore be developed, implemented and continuously monitored to identify any infringing penetration.

(a) Any infringement of these surfaces will require an assessment to identify whether or not the object creates an unacceptable risk. Any object posing an unacceptable risk shall be removed or appropriate mitigating action shall be taken to protect aircraft using the aerodrome.

(b) Any remaining such obstacles shall be published and, depending on the need, shall be marked and, where necessary, made visible by means of lights.

3.2. Hazards related to human activities and land use, such as, but not limited to, items on the following list, shall be monitored. The risk caused by them shall be assessed and mitigated as appropriate:

(a) any development or change in land use in the aerodrome area;

(b) the possibility of obstacle-induced turbulence;

(c) the use of hazardous, confusing and misleading lights;

(d) the dazzling caused by large and highly reflective surfaces;

(e) the creation of areas that might encourage wildlife activity in the surroundings of the aerodrome movement area; or

(f) sources of non-visible radiation or the presence of moving or fixed objects which may interfere with, or adversely affect, the performance of aeronautical communications, navigation and surveillance systems.

3.3. A local community emergency plan shall be established for aviation emergency situations occurring in the aerodrome local area.

4. GROUND HANDLING SERVICES

4.1. Responsibilities of the ground handling services provider

The provider of ground handling service is responsible for the safe operation of its activities at the aerodrome. The responsibilities of the provider are as follows:

(a) the provider shall have, directly or through agreements with third parties contracts, all the means necessary to ensure safe provision of service at the aerodrome. These means shall include, but are not limited to, facilities, personnel, equipment and material, compliance with local aerodrome operator procedures, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) the provider shall ensure that movements of its vehicles and persons in the movement area and other operational areas are coordinated with movements of aircraft in order to avoid collisions and damage to aircraft;

(c) the provider shall ensure that procedures to mitigate risks related to aerodrome operations in winter operation, adverse weather conditions, reduced visibility or at night, if applicable, are established and implemented;

(d) the provider shall establish arrangements with other relevant organisations to ensure continuing compliance with these essential requirements. These organisations include, but are not limited to, aerodrome operators, aircraft operators, air navigation service providers and other organisations whose activities or products may have an effect on aircraft safety;

(e) the provider, either by itself or by means of agreements with third parties, shall ensure that procedures exist to provide aircraft with fuel which is uncontaminated and of the correct specification;

(f) the provider shall ensure that manuals for maintenance of equipment shall be available, applied in practice and cover maintenance and repair instructions, servicing information, troubleshooting and inspection procedures;

(g) the provider shall use only adequately trained and qualified personnel and shall ensure the implementation and maintenance of training and checking programmes to ensure the continuing competence of all relevant personnel.

4.2. Management systems

4.2.1. As appropriate for the type of activity undertaken and the size of the organisation, the provider shall implement and maintain a management system to ensure compliance

with these essential requirements, manage safety risks and to aim for continuous improvement of this system.

4.2.2. The provider shall establish an occurrence reporting system as part of the management system under point 4.2.1 in order to contribute to the aim of continuous improvement of safety. The analysis of information from this occurrence reporting system shall involve the parties listed in point 4.1(d) above, as appropriate. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014.

4.2.3. The provider shall develop a ground handling service manual and operate in accordance with that manual. Such manual shall contain all necessary instructions, information and procedures for the service, the management system and for service personnel to perform their duties.

5. OTHERS

It shall be ensured by the aerodrome operator that, except for aircraft emergency situations, when diverting to an alternate aerodrome, or under other conditions specified in each case, an aerodrome or parts thereof shall not be used by aircraft for which the aerodrome design and operating procedures are not normally intended.

ANNEX VIII

Essential requirements for ATM/ANS and air traffic controllers

1. USE OF THE AIRSPACE

1.1. All aircraft, excluding those engaged in the activities referred to in Article 2(3)(a), in all phases of flight or on the movement area of an aerodrome, shall be operated in accordance with common general operating rules and any applicable procedure specified for use of that airspace.

1.2. All aircraft, excluding those engaged in the activities referred to in Article 2(3)(a), shall be equipped with the required constituents and operated accordingly. Constituents used in the ATM/ANS system shall also comply with the requirements in point 3.

2. SERVICES

2.1. Aeronautical information and data for airspace users for the purpose of air navigation

2.1.1. The data used as a source for aeronautical information shall be of sufficient quality, complete, current and provided in a timely manner.

2.1.2. Aeronautical information shall be accurate, complete, current, unambiguous and be of adequate integrity in a suitable format for users.

2.1.3. The dissemination of such aeronautical information to airspace users shall be timely and use sufficiently reliable and expeditious means of communication protected from intentional and unintentional interference and corruption.

2.2. Meteorological information

2.2.1. The data used as a source for aeronautical meteorological information shall be of sufficient quality, complete and current.

2.2.2. To the extent possible, aeronautical meteorological information shall be precise, complete, current, be of adequate integrity and unambiguous in order to meet the needs of airspace users.

2.2.3. The dissemination of such aeronautical meteorological information to airspace users shall be timely and use sufficiently reliable and expeditious means of communication protected from interference and corruption.

2.3. Air traffic services

2.3.1. The data used as a source for the provision of air traffic services shall be correct, complete and current.

2.3.2. Air traffic services shall be sufficiently precise, complete, current, and unambiguous to meet the safety needs of users.

2.3.3. Automated tools providing information or advice to users shall be properly designed, manufactured and maintained to ensure that they are fit for their intended purpose.

2.3.4. Air traffic control services and related processes shall provide for adequate separation between aircraft and, on the aerodrome manoeuvring area, prevent collisions between aircraft and obstructions and, where appropriate, assist in protection from other airborne hazards and shall ensure prompt and timely coordination with all relevant users and adjacent volumes of airspace.

2.3.5. Communication between air traffic services and aircraft and between relevant air traffic services units shall be timely, clear, correct and unambiguous, protected from interference and commonly understood and, if applicable, acknowledged by all actors involved.

2.3.6. Means shall be in place to detect possible emergencies and, when appropriate, to initiate effective search and rescue action. Such means shall, as a minimum, comprise appropriate alerting mechanisms, coordination measures and procedures, means and personnel to cover the area of responsibility efficiently.

2.4. Communication services

Communication services shall achieve and maintain sufficient performance with regard to their availability, integrity, continuity and timeliness. They shall be expeditious and protected from corruption.

2.5. Navigation service

Navigation services shall achieve and maintain a sufficient level of performance with regard to guidance, positioning and, when provided, timing information. The performance criteria include accuracy, integrity, availability and continuity of the service.

2.6. Surveillance service

Surveillance services shall determine the respective position of aircraft in the air and of other aircraft and ground vehicles on the aerodrome surface, with sufficient performance with regard to their accuracy, integrity, continuity and probability of detection.

2.7. Air traffic flow management

The tactical management of air traffic flows at Union level shall use and provide sufficiently precise and current information of the volume and nature of the planned air traffic affecting service provision and shall coordinate and negotiate re-routing or delaying traffic flows in order to reduce the risk of overloading situations occurring in the air or at the aerodromes. Flow management shall be performed with a view to optimising available capacity in the use of airspace and enhancing air traffic flow management processes. It shall be based on safety, transparency and efficiency, ensuring that capacity is provided in a flexible and timely manner, consistent with the European Air Navigation Plan.

The measures referred to in Article 12(7), concerning flow management shall support operational decisions by air navigation service providers, airport operators and airspace users and shall cover the following areas:

(a) flight planning;

(b) use of available airspace capacity during all phases of flight, including en route slot assignment;

(c) use of routings by general air traffic, including:

– the creation of a single publication for route and traffic orientation,

– options for diversion of general air traffic from congested areas, and

– priority rules regarding access to airspace for general air traffic, particularly during periods of congestion and crisis; and

(d) the consistency between flight plans and airport slots and the necessary coordination with adjacent regions, as appropriate.

2.8. Airspace management

The designation of specific volumes of airspace for a certain use shall be monitored, coordinated and promulgated in a timely manner in order to reduce the risk of loss of separation between aircraft in all circumstances. Taking into account the organisation of military activities and related aspects under the responsibility of the Member States, airspace management shall also support the uniform application of the concept of the flexible use of airspace as described by the ICAO and as implemented under Regulation (EC) No (XXXX/XXX) on the implementation of the Single European Sky (recast), in order to facilitate airspace management and air traffic management in the context of the common transport policy.

2.9. Airspace design

Airspace structures and flight procedures shall be properly designed, surveyed and validated before they can be deployed and used by aircraft.

3. SYSTEMS AND CONSTITUENTS

3.1. General

ATM/ANS systems and constituents providing related information to and from the aircraft and on the ground shall be properly designed, manufactured, installed, maintained and operated to ensure that they are fit for their intended purpose.

The systems and procedures shall include in particular those required to support the following functions and services:

(a) Airspace management.

(b) Air traffic flow management.

(c) Air traffic services, in particular flight data processing systems, surveillance data processing systems and human-machine interface systems.

(d) Communications including ground-to-ground/space, air-to-ground and air-to-air/space communications.

(e) Navigation.

(f) Surveillance.

(g) Aeronautical information services.

(h) The use of meteorological information.

(i) Systems and procedures for the use of meteorological information.

3.2. System and constituent integrity, performance and reliability

The integrity and safety-related performance of systems and constituents whether on aircraft, on the ground or in space, shall be fit for their intended purpose. They shall meet the required level of operational performance for all their foreseeable operating conditions and for their whole operational life.

ATM/ANS systems and their constituents shall be designed, built, maintained and operated using the appropriate and validated procedures, in such a way as to ensure the seamless operation of the European air traffic management network at all times and for all phases of flight. Seamless operation can be expressed, in particular, in terms of information-sharing, including the relevant operational status information, common understanding of information, comparable processing performances and the associated procedures enabling common operational performances agreed for the whole or parts of the European air traffic management network (EATMN).

The EATMN, its systems and their constituents shall support, on a coordinated basis, new agreed and validated concepts of operation that improve the quality, sustainability and effectiveness of air navigation services, in particular in terms of safety and capacity.

The EATMN, its systems and their constituents shall support the progressive implementation of civil/military coordination, to the extent necessary for effective airspace and air traffic flow management, and the safe and efficient use of airspace by all users, through the application of the concept of the flexible use of airspace.

To achieve these objectives, the EATMN, its systems and their constituents shall support the timely sharing of correct and consistent information covering all phases of flight, between civil and military parties, without prejudice to security or defence policy interests, including requirements on confidentiality.

3.3. Design of systems and constituents

3.3.1. Systems and constituents shall be designed to meet applicable safety and security requirements.

3.3.2. Systems and constituents, considered collectively, separately and in relation to each other, shall be designed in such a way that an inverse relationship exists between the

probability that any failure can result in a total system failure and the severity of its effect on the safety of services.

3.3.3. Systems and constituents, considered individually and in combination with each other, shall be designed taking into account limitations related to human capabilities and performance.

3.3.4. Systems and constituents shall be designed in a manner that protects them and the data they convey from intended and unintended harmful interactions with internal and external elements.

3.3.5. Information needed for manufacturing installation, operation and maintenance of the systems and constituents as well as information concerning unsafe conditions shall be provided to personnel in a clear, consistent and unambiguous manner.

3.4. Continuing level of service

Safety levels of systems and constituents shall be maintained during service and any modifications to service.

4. QUALIFICATION OF AIR TRAFFIC CONTROLLERS

4.1. General

A person undertaking training as an air traffic controller or as a student air traffic controller, shall be sufficiently mature educationally, physically and mentally to acquire, retain and demonstrate the relevant theoretical knowledge and practical skill.

4.2. Theoretical knowledge

4.2.1. An air traffic controller shall acquire and maintain a level of knowledge appropriate to the functions exercised and proportionate to the risks associated with the type of service.

4.2.2. Acquisition and retention of theoretical knowledge shall be demonstrated by continuous assessment during training, or by appropriate examinations.

4.2.3. An appropriate level of theoretical knowledge shall be maintained. Compliance shall be demonstrated by regular assessments or examinations. The frequency of examinations shall be proportionate to the level of risk associated with the type of service.

4.3. Practical skill

4.3.1. An air traffic controller shall acquire and maintain the practical skills appropriate to exercise his/her functions. Such skills shall be proportionate to the risks associated with the type of service and shall cover at least, if appropriate to the functions exercised, the following items:

(a) operational procedures;

(b) task specific aspects;

(c) abnormal and emergency situations; and

(d) human factors.

4.3.2. An air traffic controller shall demonstrate the ability to perform the associated procedures and tasks with a level of competence appropriate to the functions exercised.

4.3.3. A satisfactory level of competence in practical skill shall be maintained. Compliance shall be verified by regular assessments. The frequency of these assessments shall be proportionate to the complexity and the level of risk associated with the type of service and the tasks performed.

4.4. Language proficiency

4.4.1. An air traffic controller shall demonstrate proficiency to speak and understand English to the extent he/she is able to communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations on concrete and work-related topics, including in emergency situations.

4.4.2. Whenever necessary in a defined volume of airspace for Air Traffic Service (ATS) provision purposes, an air traffic controller shall also have proficiency to speak and understand the national language(s) to the extent described above.

4.5. Synthetic training devices (STD)

When an STD is used for practical training on situational awareness and human factors or to demonstrate that skills are acquired or maintained, it shall have a level of performance that allows adequate simulation of the working environment and operational situations appropriate to the training provided.

4.6. Training course

4.6.1. Training shall be given by a training course, which may comprise theoretical and practical instruction, including training on an STD, if applicable.

4.6.2. A course shall be defined and approved for each type of training.

4.7. Instructors

4.7.1. Theoretical instruction shall be given by appropriately qualified instructors. They shall:

(a) have appropriate knowledge in the field where instruction is to be given; and

(b) have demonstrated the ability to use appropriate instructional techniques.

4.7.2. Instruction on practical skills shall be given by appropriately qualified instructors, who have the following qualifications:

(a) meet the theoretical knowledge and the experience requirements appropriate to the instruction being given;

(b) have demonstrated the ability to instruct and to use appropriate instructional techniques;

(c) have practised instructional techniques in those procedures in which it is intended to provide instruction; and

(d) receive regular refresher training to ensure that the instructional competences are maintained up to date.

4.7.3. Instructors on practical skills shall also be or have been entitled to act as an air traffic controller.

4.8. Assessors

4.8.1. Persons responsible for assessing the skill of air traffic controllers shall:

(a) have demonstrated the ability to assess the performance of, and conduct tests and checks on air traffic controllers; and

(b) receive regular refresher training to ensure that the assessment standards are maintained up to date.

4.8.2. Assessors on practical skills shall also be or have been entitled to act as an air traffic controller in those areas in which assessment is to be made.

4.9. Medical fitness of an air traffic controller

4.9.1. All air traffic controllers shall periodically demonstrate medical fitness to satisfactorily execute their functions. Compliance shall be shown by appropriate assessment taking into account the possible mental and physical degradation due to age;

4.9.2. Demonstration of medical fitness, comprising physical and mental fitness, shall include the demonstrated absence of any disease or disability, which makes the person providing an air traffic control (ATC) service unable:

(a) to execute properly the tasks necessary to provide an ATC service,

(b) to perform assigned duties at any time, or

(c) to perceive correctly his/her environment.

4.9.3. Where medical fitness cannot be fully demonstrated, mitigation measures that provide equivalent safety may be implemented.

5. SERVICE PROVIDERS AND TRAINING ORGANISATIONS

5.1. Service provision shall not be undertaken unless the following conditions are met:

(a) the service provider shall have directly or through agreements with third parties the means necessary for the scale and scope of the service. These means shall comprise but are not limited to the following: systems, facilities, including

power supply, management structure, personnel, equipment and its maintenance, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) the service provider shall develop and keep up-to-date management and operations manuals relating to the provision of its services and operate in accordance with those manuals. Such manuals shall contain all necessary instructions, information and procedures for the operations, the management system and for operations personnel to perform their duties;

(c) as appropriate for the type of activity undertaken and the size of the organisation, the service provider shall implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system;

(d) the service provider shall use only suitably qualified and trained personnel and implement and maintain training and checking programmes for the personnel;

(e) the service provider shall establish formal interfaces with all stakeholders which may influence directly the safety of their services to ensure compliance with these essential requirements;

(f) the service provider shall establish and implement a contingency plan covering emergency and abnormal situations that may occur in relation to its services;

(g) the service provider shall establish an occurrence reporting system as part of the management system under point (c) in order to contribute to the aim of continuous improvement of safety. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014; and

(h) the service provider shall make arrangements to verify that the safety performance requirements of any system and constituent they operate are met at any time.

5.2. ATC service provision shall not be undertaken unless the following conditions are met:

(a) the prevention of fatigue of personnel providing an ATC service shall be managed through a rostering system. Such a rostering system needs to address duty periods, duty time and adapted rest periods. Limitations established within the rostering system shall take into account relevant factors contributing to fatigue such as, in particular, sleep deprivation, disruption of circadian cycles, night hours, cumulative duty time for given periods of time and also the sharing of allocated tasks between personnel;

(b) the prevention of stress of personnel providing an ATC service shall be managed through education and prevention programmes;

(c) the ATC service provider shall have in place procedures to verify that the cognitive judgement of personnel providing ATC services is not impaired or their medical fitness insufficient; and

(d) the ATC service provider shall take into account operational and technical constraints as well as human factor principles in its planning and operations.

5.3. Communication, navigation and/or surveillance service provision shall not be undertaken unless the following condition is met:

The service provider shall keep relevant airspace users and ATS units informed on a timely basis of the operational status (and changes thereof) of their services provided for ATS purposes.

5.4. Training organisations

A training organisation providing training for personnel providing an ATC service shall meet the following requirements:

(a) have all the means necessary for the scope of responsibilities associated with their activity. These means comprise, but are not limited to, the following: facilities, personnel, equipment, methodology, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) as appropriate for the training provided and the size of the organisation, shall implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system; and

(c) establish arrangements with other relevant organisations, as necessary, to ensure continuing compliance with these essential requirements.

6. AEROMEDICAL EXAMINERS AND AEROMEDICAL CENTRES

6.1. Aero-medical examiners

An aero-medical examiner must:

(a) be qualified and licensed in the practice of medicine;

(b) have received training in aviation medicine and regular refresher training in aviation medicine to ensure that assessment standards are maintained up to date; and

(c) have acquired practical knowledge and experience of the conditions in which air traffic controllers carry out their duties.

6.2. Aero-medical centres

Aero-medical centres must meet the following conditions:

(a) have all the means necessary for the scope of responsibilities associated with their privileges. These means comprise, but are not limited to, the following: facilities, personnel, equipment, tools and material, documentation of tasks, responsibilities and procedures, access to relevant data and record-keeping;

(b) as appropriate for the type of activity undertaken and the size of the organisation, implement and maintain a management system to ensure compliance with these essential requirements, manage safety risks and aim for continuous improvement of this system; and

(c) establish arrangements with other relevant organisations, as necessary, to ensure continuing compliance with these requirements

ANNEX IX

Essential requirements for unmanned aircraft

1. ESSENTIAL REQUIREMENTS FOR THE DESIGN, PRODUCTION, MAINTENANCE AND OPERATION OF UNMANNED AIRCRAFT

(a) A person operating the unmanned aircraft must be aware of the applicable Union and national rules relating to the intended operations, in particular with regard to safety, privacy, data protection, liability, insurance, security or environmental protection. The person must be able to ensure the safety of operation and safe separation of the unmanned aircraft from people on the ground and from other airspace users. This includes being familiar with the operating instructions provided by the manufacturer and with all relevant functionalities of the unmanned aircraft and applicable rules of the air and ATM/ANS procedures.

(b) An unmanned aircraft must be designed and constructed so that it is fitted for its function, and can be operated, adjusted and maintained without putting persons at risk when these operations are carried out under the conditions for which the aircraft was designed.

(c) If necessary to mitigate risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from the operation, the unmanned aircraft must have the corresponding and specific features and functionalities which take into account the principles of privacy and protection of personal data by design and by default. According to the needs those features and functionalities must ensure easy identification of the aircraft and of the nature and purpose of the operation; and must ensure that applicable limitations, prohibitions or conditions be complied with, notably with respect to the operation in particular geographical zones, beyond certain distances from the operator or at certain altitudes.

2. ADDITIONAL ESSENTIAL REQUIREMENTS FOR THE DESIGN, PRODUCTION, MAINTENANCE AND OPERATION OF UNMANNED AIRCRAFT REFERRED TO ARTICLE 46(1) AND (2)

The following requirements must be met to ensure a satisfactory level of safety for people on the ground and other airspace users during the operation of the unmanned aircraft, taking into account the level of risk of the operation as necessary:

2.1. Airworthiness

(a) Unmanned aircraft must have design features or details that experience has shown to be safe for the operator or for third parties on the ground or in the air.

(b) Unmanned aircraft must provide product integrity that is proportionate to the risk in all anticipated flight conditions.

(c) Unmanned aircraft must be safely controllable and manoeuvrable, as necessary under all anticipated operating conditions including following the failure of one or, if appropriate, more systems. Due account must be taken of human-factor considerations, in particular available knowledge about factors conducive to safe operation of technology by humans.

(d) Unmanned aircraft, equipment and associated non-installed equipment, including propulsion systems and the equipment to control the unmanned aircraft remotely must function as intended under any foreseeable operating conditions, throughout, and sufficiently beyond, the operation for which the aircraft was designed.

(e) Unmanned aircraft systems, equipment and associated non-installed equipment, including propulsion systems and the equipment to control the unmanned aircraft remotely, considered separately and in relation to each other, must be designed such that the probability of a failure condition and the severity of its effect on people on the ground and other airspace users are proportionate to the risk of the operation, as assessed on the basis of the principles laid down in Article 4(2).

(f) Any equipment to control the unmanned aircraft remotely involved in the operation must be so as to facilitate flight operations, including means providing situational awareness, and management of any expected situation and emergencies.

(g) The organisation responsible for the production or for the marketing of the unmanned aircraft must provide information to the operator of an unmanned aircraft and, where relevant, to the maintenance organisation on the kind of operations for which the unmanned aircraft is designed together with the limitations and information necessary for its safe operation, including operational and environmental performance, airworthiness limitations and emergency procedures.. This information shall be given in a clear, consistent and unambiguous manner. The operational capabilities of unmanned aircraft that can be used in operations that do not require a certificate or declaration must be limited as to meet airspace rules applicable to such operations.

(h) Organisations involved in the design of unmanned aircraft, engines and propellers take precautions so as to minimize the hazards arising from conditions, both internal and external to the unmanned aircraft and their systems, that experience has shown to have a safety impact. This includes protection against interference by electronic means.

(i) The manufacturing processes, materials and components used to produce the unmanned aircraft must result in adequate and reproducible properties and performance that are compliant with the design properties.

2.2. Organisations

Organisations involved in unmanned aircraft design, production, maintenance, operations, related services and training shall meet the following conditions:

(a) The organisation must have all the means necessary for the scope of its work and ensure compliance with the essential requirements and the corresponding detailed rules established in accordance with Article 47, relevant for its activity.

(b) The organisation must implement and maintain a management system to ensure compliance with the relevant essential requirements, manage safety risks and aim for continuous improvement of this system. Such management system must be appropriate in respect to the organisation's type of activity and size.

(c) The organisation must establish an occurrence reporting system, as part of the safety management system, in order to contribute to the continuous improvement of safety. The occurrence reporting system shall be compliant with Regulation (EU) 376/2014. Such reporting system must be appropriate in respect to the organisation's type of activity and size.

(d) The organisation must establish arrangements, where relevant, with other organisations to ensure continuing compliance with the relevant essential requirements.

2.3. Persons operating an unmanned aircraft

A person operating an unmanned aircraft shall possess the required knowledge and skills necessary to ensure the safety of the operation and proportionate to the risk associated with the type of operation. This person shall also demonstrate medical fitness, if this is necessary to mitigate the risks involved in the operation concerned.

2.4. Operations

The operator of an unmanned aircraft is responsible for the operation and must take any appropriate actions to ensure the safety of the operation.

A flight must be performed in accordance with the applicable laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the area, airspace, aerodromes or sites planned to be used and, where applicable, related ATM/ANS systems.

(a) Operations with unmanned aircraft must ensure the safety of third parties on the ground and of other airspace users and minimize the risks resulting from adverse external and internal conditions, including environmental conditions, through maintaining appropriate separation distance during all phases of the flight.

(b) Unmanned aircraft must be operated only if it is in airworthy condition and where the equipment and the other components and services necessary for the intended operation are available and serviceable.

(c) The operator of an unmanned aircraft must ensure that the aircraft has the necessary navigation, communication, surveillance, detect and avoid equipment, as well as any other equipment deemed necessary for the safety of the intended flight, taking account of the nature of the operation, air traffic regulations and rules of the air applicable during any phase of the flight.

3. ESSENTIAL ENVIRONMENTAL REQUIREMENTS FOR UNMANNED AIRCRAFT

Unmanned aircraft shall comply with the environmental performance requirements set out in Annex III.

ANNEX X

Correlation table

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