



REGULATION

**REGULATION
ON CONSTRUCTION
AND
OPERATIONS OF SPACEPORTS
(COURTESY ENGLISH TRANSLATION)**



INDEX

INTRODUCTION	4
SECTION A	7
REFERENCE	7
DEFINITIONS.....	9
SEZIONE B	13
CHAPTER 1 – Applicability.....	13
CHAPTER 3 – Physical characteristics and technical requirements of the spaceports.....	15
CHAPTER 3 – The Spaceport Operator	20
CHAPTER 4 – Spaceport management system.....	22
CHAPTER 5 - Operations	29
CHAPTER 6 – Information and navigation services	33
CHAPTER 7 – Risk prevention and management.....	37
CHAPTER 8 - Security.....	47
CHAPTER 9 – Issue of the spaceport certification	50



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS
OF SPACEPORTS

Ed. 1

pag. 4 of 58

INTRODUCTION

1. The spaceport is a strategic infrastructure essential to implement suborbital transportation operations and access to space, in order to ensure a sustainable development of the sector of commercial suborbital flights, pursuant the directives of the Minister of Infrastructure and Transport (MIT).

Currently, there are experimental suborbital flights (microgravity tests, technological research and development, system tests) and suborbital flights aimed at training qualified personnel (astronauts and crews). Notwithstanding that, in the future, additional purposes may be identified and these will have to be necessarily approved by ENAC.

2. For the purposes of this Regulation, the spaceport is a site that includes infrastructures, buildings, equipment, plants and systems which are used to execute the launch, the landing and the related ground and flight operations of a suborbital HOTOL vehicle (horizontal take-off and horizontal landing), where the launch and landing of which can be, respectively, compared to the horizontal take off and the landing of an aircraft (Horizontal Spaceport).

Possible updates and integrations to this Regulation, necessary to allow operations of vertical launch and landing (Vertical Spaceport), may be taken into consideration at a later time, in accordance with the Governmental directives related to the topic of suborbital transport and access to space.

3. In order to avoid improper use of land and to make the best use of the infrastructural resources present, the spaceport is identified in the area of an aerodrome certified under the Regulation (EU) no. 139/2014 and owning an ICAO code of flight infrastructure suitable for the characteristics of the suborbital vehicle that will operate there. The use of the main infrastructures, primarily the runway, will be shared and, normally, it will not be simultaneous.

4. Therefore, in this Regulation there are direct references to the provisions included in the Regulation (EU) no. 139/2014 and in the EASA documents "*Certification*



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS
OF SPACEPORTS

Ed. 1

pag. 5 of 58

Specifications and Guidance Material for Aerodromes Design” and “*Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Authority, Organisation and Operations Requirements for Aerodromes*”, to which the spaceport operator must refer in order to obtain the certification of spaceport, contextualising the contents with the activities, operations and peculiarities of the spaceport in accordance with the Section B of this Regulation.

5. The above-mentioned legal provisions are complemented by further legal requirements regarding the specificity of the suborbital transport operations that characterise the spaceport if compared to an aerodrome, which, similarly, need to be respected by the spaceport operator in order to be allowed to operate, in accordance with the Section B of this Regulation. In order to benefit of the *know-how* gained in this sector by the American Federal Aviation Administration (FAA), the Regulation refers, for some aspects, to the FAA norm “CFR Title14 Aeronautics and Space - Part 420 License to operate a launch site” of the 20th of June 2018.

6. From the point of view of the security, the same European and national aerodrome access rules for goods, operators and both means of the spaceport operator and external, as well as flight crews, are applied also to the spaceport. The occupants of a suborbital flight others than crew which, for any reason, participate to the flight, are allowed to enter the security restricted area after specific and dedicated screenings, as defined in this Regulation.

7. This certification is issued by ENAC to the spaceport operator (applicant for certification) based on the demonstrations of compliance with the requirements listed in the section B of this Regulation, provided by the applicant itself. In order to issue the spaceport certification, the applicant is required to prove that in the spaceport is possible to safely operate at least one typology of suborbital transport with at least one typology of suborbital vehicle.

8. Excluding the operations whose responsibility is shared between the Airspace Operator and the providers of the Air Navigation Services, all the operations that are carried out in the spaceport are under the responsibility of the spaceport operator. This is because it represents *“the subject entrusted with the task of administering and managing the aerodrome infrastructures, together with other activities or exclusively, in accordance with criteria of transparency and non-discrimination, under the control of ENAC”*. At the same time the spaceport operator is responsible of the spaceport infrastructures and to *“coordinate and control the activities of the different private operators in the aerodrome”* and, consequently, in the spaceport, as stated in the art. 705 of the Air Navigation Code.

9. This Regulation defines the conditions to issue, maintain, modify, limit, suspend and cancel the spaceport certification and the related obligations and responsibilities of the spaceport certification holder, with regard to the safety of the suborbital horizontal take-off and horizontal landing transport operations.

10. Furthermore, this Regulation determines the general conditions of applicability, implementation and regularity of rescue and fire prevention services. The technical requirements to set up the services are reported in the regulation of the Ministry of Interior - National Department of Fire Brigades.

11. ENAC issues this Regulation in line with the guiding act of the 10th of July 2017 n. 354 of the Minister of the Infrastructure and Transport about the sustainable development of the commercial suborbital flights sector.

12. ENAC modifies and completes this Regulation as necessary, in accordance with the current rules and procedures and with the Government guiding acts in the field of commercial suborbital transport and access to space.

SECTION A**REFERENCES**

- Regulation (EU) no. 139/2014 of 12 February 2014.
- ED Decision 2016/027/R EASA: Certification Specifications and Guidance Material for Aerodromes Design (CS-ADR-DSN).
- ED Decision 2014/012/R EASA: Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Authority, Organisation and Operations Requirements for Aerodromes (AMC – GM).
- FAA, CFR Title 14 Chapter III - Subchapter C - Part 420 – “License to operate a launch site”, 20 June 2018.
- Navigation Code, Part II – Air Navigation.
- ENAC “Regulation on construction and operations of aerodromes (Edition II, Amendment 9 of 23 October 2014), Ch. 9, par. 6 “Risk plans”.
- Decree 13 September 2002, no. 263 “Regulation on leasing of airport security services, modification of the ministerial decree 29 January 1999, no. 85, bringing the implementation rule of the article 5 of the Decree-law 18 January 1992, no.9, converted, with modifications, by the law 28 February 1992, no.217”.
- Legislative Decree 26 June 2015 no. 105 “Implementation of the directive 2012/18/EU on the control of major-accident hazards involving dangerous substances”.
- Decree of the Minister of the Interior 7 August 2012 “Instructions on how to submit an application in relation to the procedures to prevent fires and the documentation to attach, under the Art. 2, clause 7 of the decree of the President of the Republic 1 August 2011, no. 151”.
- Decree 3 August 2015 “Approval of the technical rules to prevent fires, under the art. 15 of the Legislative Decree 8 March 2006, no. 139”.
- Decree of the Minister of the Interior 9 May 2007 “Directives for the implementation of the engineering approach to fire safety”.
- Doc. ICAO 9137-AN 898 “Airport Services Manual” Part 1 - Rescue and Firefighting.
- ICAO Annex 17.
- Regulation (EC) no. 300/2008 of 11 March 2008 and following modifications and integrations, that establishes shared rules on civil aviation safety and that abrogates the Regulation (EC) no 2320/2002.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 8 of 58

- Regulation (EU) no. 1998/2015 (and related Decisions) of 5 November 2015 and following modifications and integrations that establishes detailed instructions for the implementation of the fundamental shared rules on air safety, as modified by the Regulation (EU) 2020/111 of 13 of January 2020 “that modifies the implementing regulation (EU) 2015/1998 regarding safety equipment of the civil aviation and the third countries which are believed to apply safety rules that are equivalent to the fundamental shared rules on civil aviation safety”.
- National Programme for Civil Aviation Safety.
- National Programme for safety quality control in civil aviation.
- Regulation (EU) no. 1254/2009 of 18 December 2009 that defines the criteria to allow the Member States to avoid the fundamental shared rules for civil aviation safety and to adopt alternative safety measures.

DEFINITIONS

1. For the purposes of this Regulation, the definitions included in the rules, regulations and references as noted below are applied as explained in the following p. 2:

- a) Regulation (EU) no. 139/2014, art. 2;
- b) ED Decision 2016/027/R, CS ADR-DSN.A.002 – Definitions;
- c) ED Decision 2014/012/R, AMC-GM – Terminology;
- d) CFR Title 14 Part 420 of 20 June 2018, par. 420.5 - Definitions.

2. The definitions included in the previous point 1 must be properly applied to the spaceport taking into consideration as follows:

- a) “*aerodrome*” is to be understood as “*spaceport*”;
- b) “*Competent authority*” is to be understood as “*ENAC*”;
- c) “*Agency*” is to be understood as “*ENAC*”;
- d) “*aerodrome operator*” is to be understood as “*spaceport operator*”;
- e) “*certification specifications established by the Agency*” is to be understood as “*certification specifications included in this Regulation and established by ENAC*”;
- f) “*aerodrome equipment*” is to be understood as “*spaceport equipment*”;
- g) “*aircraft*” is to be understood as “*suborbital vehicle*”.

3. The specific definitions related to the commercial suborbital transport operations, as integration of the definition included in the previous point 1 and 2, are listed below.

Anomaly – A problem that occurs during the operation of a system, subsystem, process, facility or support equipment.

Approval – Measure through which ENAC, after the pertaining technical evaluations, formally expresses its favourable judgement on documents and proposals of the applicant.

Blast curtain - Containing element or embankment aimed at stopping the motion of the suborbital vehicle in case of need.

Certification basis – Document that includes the certification specifications of the physical characteristics and the technical requirements of the spaceport in relation to the those included in this Regulation, with proof of the related demonstration of compliance.

Commercial suborbital flight – A suborbital flight carried out by a specific suborbital vehicle that carries people on-board as part of an operation of commercial suborbital transportation.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 10 of 58

Commercial suborbital transportation – Transportation of people and or goods through a suborbital vehicle, with or without on-board crew, for non-governmental civilian purposes.

Controlled explosion area – Spaceport area, delimited by a containment structure, where a controlled explosion of potential residual combustible materials of any suborbital vehicle engine, due to the impossibility of unload and/or passivation of the combustible material itself, can be executed in a safe way and reducing the consequent harmful and dangerous effects.

Crew – Any employee of a suborbital vehicle operator or of any of the contractors or sub-contractors of a suborbital vehicle operator that performs activities directly related to launch/take-off, re-entry/landing or any other operation of the suborbital vehicle; it includes the ground crew and the flight crew.

Flight corridor – An area of the Earth's surface with defined shape and dimensions, able to contain, with the required level of probability and confidence, any hazardous debris produced by the fall of a suborbital vehicle or its parts during the flight phases included in the suborbital operations.

Flight crew – Any employee of a suborbital vehicle operator or of any of the contractors or sub-contractors of a suborbital vehicle operator that performs on board activities directly related to launch/take-off, re-entry/landing or any other operation of the suborbital vehicle.

Flight participant – Any person, other than the flight crew, carried on-board a suborbital vehicle for any reason.

Ground crew – Any employee of a suborbital vehicle operator or of any of the contractors or sub-contractors of a suborbital vehicle operator that performs ground activities directly related to launch/take-off, re-entry/landing or any other operation of the suborbital vehicle.

Instantaneous Impact Point - A predicted impact point, following thrust termination of a vehicle or part of it, in a specific instant during flight.

Launch – Departure of a suborbital vehicle or one of its stages, from the ground, the sea surface or an aerial platform through the ignition of a rocket motor.

Launch site (Space side) – The whole set of the spaceport flight infrastructures.

Multistage vehicle system– A complex vehicle system, other than a vertical launcher, composed by more than one vehicle and intended to fly in a suborbital operation. A multistage vehicle system includes at least a launching aircraft (carrier aircraft) and a vehicle provided with an autonomous propulsion system which is launched by the carrier aircraft.

Occupant – Any person (either flight crew or participant) carried in a suborbital vehicle.

Payload – Any equipment or part embarked/installed on board that are not essential to conduct the flight but necessary to execute a specific activity during the mission.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 11 of 58

Passivation of a suborbital vehicle – Process of removing any energy from the suborbital vehicle both at the end of the single mission and service life. The passivation for rocket engines is a mechanical and electrochemical process aimed at preventing the accidental reignition of the engines as a consequence of the blend of the fuel with the oxidising.

Public safety area - A portion of a flight corridor that is required to be maintained free from people during the flight of a suborbital vehicle or a part of it.

Reference suborbital vehicle – A suborbital vehicle representative of class of the suborbital vehicles that are authorised to operate from and within the spaceport based on their technical and operational characteristics and on the risk analysis required by this Regulation.

Refuelling handler – Provider of assistance services for refuelling the suborbital vehicle with propellants, fuels and oxidisers.

Reusable suborbital vehicle – A suborbital vehicle at least one stage of which is reusable in whole or in part more than one single mission.

Risk - The possibility that a specific event may occur and the related consequence, i.e. the possibility of any loss or damage, measured in terms of severity and probability.

Risk plan – Document that includes the provisions and limitations to be transposed in the urban planning of each Municipality where the spaceport area is located, pursuant the provisions of the 5th amendment of the Art. 707 of the Air Navigation Code aimed at preserving the territory from the consequences of a potential accident or serious incident.

Spaceplane - A suborbital vehicle or a stage thereof, rocket-propelled in whole or in part, intended to fly a suborbital trajectory, the thrust of which is greater than its lift for the majority of the rocket-powered portion of its ascent.

Spaceport – A site, identified within the area of an aerodrome certified under the Regulation (EU) no. 139/2014, whose infrastructural and facilities equipment as well as its technical requirements allow horizontal launch/take-off, re-entry/landing and ground/flight operation of a single-stage or multistage reusable suborbital vehicle. The site is structured to allow all the necessary operations to execute a suborbital flight, including security controls for access of people and goods into security restricted areas, suborbital vehicle and the related systems maintenance and preparation to flight, training of crew and other occupants.

Spaceport Operator – The legal entity that, together with other activities or exclusively, is entrusted with the task of administer and manage the spaceport infrastructures, as well as coordinate and control the activities of the different vehicle operators that operates within the spaceport. The spaceport operator is the holder of the concession for the design, development, building, update, management, maintenance and use of the spaceport systems



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 12 of 58

and infrastructures, including the state property it got entrusted with, and from which it takes the related responsibilities. The spaceport operator is also the subject entitled to apply to ENAC in order to obtain the spaceport certification.

Spaceport security restricted area – Spaceport airside area with controlled access in order to ensure the safety of the suborbital operations. Usually, this area also includes all the departure areas of the occupants between the security checkpoints and the suborbital vehicle, as well as the cargo warehouses and the airside spaces for servicing and flight preparation.

Space Weather - The term space weather generally refers to conditions on the sun, in the solar wind, and within Earth's magnetosphere, ionosphere and thermosphere that can influence the performance and reliability of space-borne and ground-based technological systems and can endanger human life or health.

Suborbital Flight - The flight phase of a suborbital operation, carried out by a suborbital vehicle, from the ignition of the engines on the ground before take-off/launch, until when the suborbital vehicle and all its parts have re-entered into the Earth's atmosphere or returned on the ground after landing in a safe condition.

Suborbital Operation - The whole set of ground and flight activities related to a suborbital vehicle, carried out within a spaceport or an otherwise identified launching/take-off or re-entry/landing site, an operator, manufacturer or service provider infrastructure, or in flight, needed to safely and securely prepare and carry out a suborbital flight (including the implementation of contingency and emergency procedures) which does not have the aim to send the suborbital vehicle, any portion thereof or any payload to outer space by placing it on an orbit able to cycles the Earth or escape from the Earth.

Suborbital Trajectory - The intentional flight path of a vehicle or any portion thereof, whose vacuum instantaneous impact point does not leave the surface of the Earth, such that in a portion of it the vehicle is not able to develop sufficient aerodynamic forces to significantly affect the flight (free ballistic flight).

Suborbital Vehicle - A single vehicle, or a multi-stage system of vehicles intended to fly a suborbital trajectory.

Suborbital Vehicle Operator – Operator responsible for conducting the suborbital transportation operations related to one or more suborbital vehicles.

Visual Meteorological Condition (VMC) – Weather conditions for visual flight as defined in Regulation (EU) no. 923/2012.

SECTION B

CHAPTER 1 – APPLICABILITY

1.1 This regulation is applied to spaceports where operations of commercial suborbital transports through reusable suborbital horizontal take-off and horizontal landing vehicles (HOTOL - Horizontal Take-off and Landing) take place. Possible different launch/take-off and landing modalities can be authorised in compliance with the additional applicable requirements established by ENAC.

1.2. Experimental suborbital flights (microgravity tests, technological research and development, system tests) and suborbital flights aimed at training qualified personnel (astronauts and crews) can be operated. Notwithstanding that, in the future, additional purposes may be identified and they will have to be necessarily approved by ENAC.

1.3 The spaceport can be used exclusively for suborbital operations during daytime, with weather conditions not below the minimum Visual Meteorological Condition (VMC) and with suborbital vehicles owning the authorisations listed in the ENAC Regulation on Suborbital Operations.

1.4 The spaceport is used for operations of commercial suborbital transport carried out by suborbital vehicles included in the typology of reference, whose operating conditions are compatible with the physical and organisational characteristics of the spaceport and the aerodrome in which the spaceport is located.

1.5 To start the spaceport operations, the spaceport operator must hold the certification of spaceport, issued by ENAC. The certification attests the compliance of the spaceport with the requirements included in this Regulation.

1.6 This Regulation includes:

- a) certification specifications for physical characteristics and technical requirements of the spaceport;



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 14 of 58

- b) requirements regarding spaceport operator obligations and spaceport management system;
- c) requirements regarding operations;
- d) requirements regarding territory.

CHAPTER 2 – PHYSICAL CHARACTERISTICS AND TECHNICAL REQUIREMENTS OF THE SPACEPORTS

2.1 For the purposes of this Regulation, a spaceport is a site identified in the area of an aerodrome certified under the Regulation (EU) no. 139/2014 and featured with infrastructural and facilities equipment as well as the technical requirements necessary to execute horizontal launch/take-off and landing of a single or multi stage reusable suborbital vehicle. The site needs to be structured to allow all the necessary operations to execute a suborbital flight, including security controls for people, goods, vehicles and supplies acceding security restricted areas, maintenance and preparation to flight of the suborbital vehicle and the related systems, training of flight crew and occupants.

The spaceport manoeuvring area coincides with the aerodrome one or it is included in the latter; the suborbital vehicle may be allowed to use a dedicated taxiway.

2.2 The applicant, in order to obtain a spaceport certification, is required to prove that the spaceport is able to allow the operations of at least one suborbital vehicle or a suborbital vehicle typology identified through the reference suborbital vehicle and suborbital operation, in accordance with the ENAC Regulation on Suborbital Operations.

2.3 The requirements of spaceport infrastructures, systems and obstacles limitations are those identified in this Regulation, including those from ED Decision 2017/021/R EASA: *Certification Specifications and Guidance Material for Aerodromes Design*, if applicable, in consideration of the alphanumeric code associated to the aerodrome infrastructure.

2.4 The certification specifications regarding the spaceport physical characteristics and technical requirements are included in the Spaceport Certification Basis, that includes:

- a) the Certification Basis of the aerodrome where the spaceport operates;
- b) the certification specifications of the spaceport that are listed in the following paragraphs.

The Certification Basis is made up of:

- a) certification specifications (CS) recalled in this Regulation that ENAC considers to be applicable to spaceport physical characteristics and type of operations and that are in force at the application date for the certification, unless the applicant choose the

compliance with the following amendments of the recalled CS or if ENAC considers necessary the compliance with these following amendments;

- b) the potential cases of ELoS and Special Conditions (SC) regarding only the spaceport and/or derived from the aerodrome that can be referred to the spaceport as well;
- c) the potential DAAD regarding only the spaceport and/or derived from the aerodrome that can be referred also to the spaceport.

2.5 A spaceport for HOTOL suborbital flights must include:

- a) runway length available for take-off run (TORA) not less than 3,000 m;
- b) dedicated stand;
- c) depot for one or more typology of propellant, fuel and oxidiser for the suborbital vehicle;
- d) hangar for storage, maintenance and flight preparation of the suborbital vehicle and flight preparation of the potential payload;
- e) components of Mission Control Centre necessary to conduct the operations;
- f) specific areas for crew briefing, occupants training as well as crew and occupants pre-flight medical check-ups, if needed for the operations;
- g) security control centre;
- h) area for controlled explosion/passivation;
- i) potential construction projects and systems required by the applicable fire prevention and protection laws;
- j) lighting protection systems;
- k) specific radio assistance systems as necessary to conduct operations;
- l) specific radio communication system as necessary to conduct operations;
- m) flight corridors associated with the reference suborbital vehicle;
- n) systems for the passivation and decontamination of toxic fluids.

2.6 The stand of the suborbital vehicle must be located at an adequate distance from apron, structures, aerodrome and spaceport equipment and systems where a people's presence may be possible. This distance needs to be calculated through a risk analysis in accordance with operational and technical prescription established by the National Fire Brigade. Based on the typology of fuel/propellant/oil and substances used to run the suborbital vehicle, the stand must include an adequate collection and disposal system of the material that, for accidental causes, may spill on the paving. The stand must be visible from the Control Tower.

2.7 The spaceport operator coordinates through means of agreements with the responsible subjects:

- a) provision of services of telemetric acquisition, tracing and surveillance of the suborbital vehicle during the different phases of the suborbital flight;
- b) provision of services of weather and atmospheric discharges detection;
- c) provision of services of rescue and firefighting.

The spaceport operator makes available for the responsible subjects the infrastructures, areas and places necessary to carry out the services reported in the previous points a), b) e c).

2.8 The depot of aviation fuel, if necessary, can correspond with the one that serves the aerodrome.

2.9 The hangar for storage, maintenance and flight preparation of the suborbital vehicle must have dimensional, construction and functional characteristics adequate for the suborbital vehicle and reference operations. The location and the construction characteristics must be identified through a risk analysis in accordance with operational and technical prescription established by the National Fire Brigade. The internal finishing of the space where the suborbital vehicle preparation and the maintenance take place must ensure a high level of cleanliness. The hangar must be equipped with an adequate collection and disposal system of the material that, for accidental causes, may spill on the paving and with an air conditioning system that ensures the conditions of temperature and humidity required for the reference suborbital vehicle.

2.10 The Mission Control Centre is a system that may include the Mission Control Room, the Mission Payload Control, the Ground Control Station.

The Mission Control Room consists of the spaces usually dedicated to support the monitoring and control functions of the suborbital vehicle activities and it can be equipped with a telemetry and monitoring system of the launch and landing trajectory, video systems for visual control of the activities inside the suborbital vehicle.

The Mission Payload Control is a system that manages the control and monitoring of the payload onboard.

The Ground Control Station is a system aimed at supporting the flight control, the ground/air communications with the suborbital vehicle and the tracking functions.

The functional and infrastructural characteristics are defined in accordance with the necessities of the suborbital vehicle operator.

2.11 The Security Control Centre is a space specifically dedicated to control the access segregation to the different areas of the spaceport and to control and manage potential security systems, additional to the ones of the aerodrome if not considered to be enough, also to guarantee the safety of the spaceplan and the suborbital vehicle, in general.

2.12 The area for controlled explosion/passivation is an area specifically identified by the spaceport operator following a specific risk analysis, aimed at mitigating the risks coming from at least the following hazards during the various mission preparation phases:

- a) accidental engine activation during refuelling;
- b) suborbital vehicle early return with remaining propellant/fuel in the tanks;
- c) vehicle passivation.

The explosion/passivation area must be equipped with a blast curtain, that is a restraining element or an embankment aimed at facilitating the stop of the suborbital vehicle in uncontrolled motion. Its location, equipment as well as the physical and dimensional characteristics must be identified through a specific risk assessment that considers the operations carried out on the suborbital vehicle as well as the possible trajectories that can be followed by the vehicle in case of a fault.

With regard to the location and characteristics of the area and its equipment, the area itself must not interfere with other spaceport/aerodrome safety areas and obstacles limitation surfaces.

2.13 Notwithstanding the provisions of the existing sector rules, all the equipment subject to risk of fire and explosion must be fitted with an atmospheric discharges protection system, aimed at ensuring that no fires or explosions will take place.

2.13.a Systems and installations for which static electricity can generate the risk of serious or catastrophic consequences must be designed and built in such a way as to limit the creation and accumulation of electrostatic charges.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 19 of 58

2.13.b Systems, ground structures and installations must be designed and constructed so as to ensure electromagnetic compatibility between the various installations and electrical equipment, and also the suborbital payloads vehicle.

2.14 The spaceport must be equipped with an adequate radio communication infrastructure, if needed for the operations, using both aeronautical frequencies and offline internal ones in order to allow a correct execution of ground and flight operations.

2.15 A flight corridor associated to the suborbital vehicle and reference operations is identified for each landing and take-off direction, as described in the following par. 7.6.4.

2.16 The spaceport must be equipped with adequate systems for the passivation and decontamination of toxic fluids.

2.17 Any area of the spaceport that may be subject to the diffusion of toxic substances into the atmosphere must be equipped with a fixed system for the detection of the vapor/toxic gas content, capable of generating an alarm.

2.18 With the purpose of designing and building an aerodrome, the requirements included in this Regulation are applied, in its effective edition at the submission date of the final draft of the works to realise (as defined in the existing legislation on public works), notwithstanding the obligation of adaptation to new applicable regulation and law modifications.

CHAPTER 3 - THE SPACEPORT OPERATOR

3.1 The spaceport operator is the legal entity that, together with other activities or exclusively, is entrusted with the task of administer and manage the spaceport infrastructures, as well as coordinate and control the activities of the different operators in the spaceport. The spaceport operator is also the subject entitled to apply to ENAC in order to obtain the spaceport certification.

3.2 The spaceport operator is the holder of the concession for planning, development, realisation, update, management, maintenance and use of the spaceport systems and infrastructures and it takes the related responsibilities

The spaceport operator coincides with the operator of the aerodrome in which the spaceport is located.

3.3 The spaceport operator is responsible of the application of the safety rules within the infrastructures and during the suborbital vehicle operations and, therefore, of the safe functioning and maintenance of the spaceport, in compliance with:

- a) this regulation and the law references included in it, as far as applicable;
- b) the conditions of its spaceport certification;
- c) the content of the Spaceport Manual (see. par. 4.10);
- d) other manuals regarding the available spaceport equipment, as far as applicable.

3.4 It is spaceport operator responsibility to verify that the suborbital vehicle operator obtained the necessary authorisations.

3.5 The spaceport operator is responsible for the coordination, by the means of agreements, with Institutions, Authorities and Administrations interested in the spaceport operations for operational and security needs, in both normal and emergency conditions, in particular with the ANSP and the Fire Brigade for suborbital operations.

In particular, the operator is responsible for coordination with the Air Navigation Service Provider relating to suborbital operations.

3.6 The spaceport operator is responsible, to the extent applicable, for the coordination, in case of emergency, with the subjects in charge and/or involved into the rescue intervention



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS
OF SPACEPORTS

Ed. 1

pag. 21 of 58

and firefighting, for Civil Protection and rescue at sea, in accordance with the provisions of the Emergency Plan (see par.7.4.).

3.7 The spaceport operator, that is the applicant for the spaceport certification, is required to allow, at any time, the access of authorised ENAC personnel to infrastructures, facilities, services, documents and internal staff. This is to allow the personnel to investigate on the compliance with the requirements of this regulation and any other applicable, with the purpose of issuing the certification, its validity or modification.

3.8 The spaceport operator is responsible for the services and products that are within its field of competence in compliance with the certification conditions or when contracted to other organisations that carry out the work under its surveillance.

The spaceport operator ensures that ENAC is able to access the contracted organisation in order to determine the constant compliance with the applicable requirements.

3.9 For matters not covered in this chapter, refer to the spaceport operator obligations and responsibilities included in the regulation (EU) no. 139/2014, Attachment III, Chpt. C (ADR.OR.C) and in the correspondent AMC and GM from ED Decision 2014/012/R EASA, applied to spaceport.

CHAPTER 4 - SPACEPORT MANAGEMENT SYSTEM

4.1 For the issuance of the spaceport certification and the related continued validity, it must be defined a spaceport management system that includes all the persons, means, procedures, tools, reciprocally interconnected and interacting between them and with the external environment, in order to allow the execution of suborbital operations in the spaceport.

4.2. The definition, implementation, maintenance and monitoring of the management system efficiency are under the responsibility of the spaceport operator.

4.3 The organisational structure of the spaceport operator is clearly identified as well as roles and responsibilities are specifically defined within the management system.

4.4 The spaceport management system includes a Safety Management System (SMS, see par. 4.9), that represents a fundamental part of it.

4.5 The spaceport management system and the safety management system integrate the aerodrome management system where the spaceport operates. They keep into consideration the reciprocal interrelations and/or interferences regarding the carried-out activities, the planned operations and the followed procedures.

4.6 The reference document of the spaceport management system is the Spaceport Manual.

4.7 For matters not covered in this chapter, refer to the obligations and requirements included in the regulation (EU) no. 139/2014, Attachment III, Cpth. D (ADR.OR.D) and in the correspondent AMC and GM from ED Decision 2014/012/R EASA, applied to spaceport.

4.8 *Spaceport operator organisation*

4.8.1 The spaceport operator must have an adequate organisation in order to ensure the management and surveillance of the areas, the activities and the processes that take place in the spaceport from a security and safety point of view, in relation to the operations typology that are intended to be carried out and the compresence with activities related to the aerodrome.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 23 of 58

4.8.2 The organisational structure of the spaceport operator is the one designed for the aerodrome management, in other words it is based on the identification of an Accountable Manager and heads of departments (Post Holder, Safety Manager, Compliance Monitoring Manager) in charge of specific fields or scopes of intervention, identified under the Regulation (EU) no. 139/2014, Attachment III, Cpth. D (ADR.OR.D.015) and in the correspondent AMC and GM from ED Decision 2014/012/R EASA. Also, the organisational structure of the spaceport operator includes the role in charge of the spaceport security, the Security Manager.

4.8.3 The Accountable Manager and the Post Holders of the spaceport coincide with the ones of the certified aerodrome unless motivated necessities submitted to ENAC by the spaceport operator. These staff members need to be adequately trained and updated by the spaceport operator with regard to the specific procedures and operations of the spaceport as well as the potential interrelations between the aerodrome and spaceport activities and procedures. The role of Movement Area Post Holder is required to have a specific knowledge of the operations regarding the area of competence and related to the suborbital vehicle that operates at the spaceport as well as to the evaluation of the connected risks.

4.8.4 Prior to ENAC evaluation, the same person can be in charge of multiple Post Holder roles.

4.8.5 The spaceport Safety Manager has the role, responsibilities and requirements expected for this figure as described in the regulation (EU) no. 139/2014, Attachment III, Chpt. D and AMC-GM EASA detailed documentation. The manager operates in compliance with these legal provisions applied to the spaceport, taking into consideration the interrelations and/or interferences with aerodrome activities.

In addition to the requirements in AMC1 ADR.OR.D.015 (c), the role of the spaceport Safety Manager is required to have a specific knowledge of the procedures and operations related to the suborbital vehicle and an adequate training and competence in assessing the related risks. It is included the risk for the operators that work in the spaceport and in the aerodrome in which the spaceport is located as well as the risk for third parties which is connected to the definition of flight corridors and operations.

The Safety Manager verifies and validates what already established for the aerodrome regarding the parts that involve the spaceport and their applicability. They also validate all the procedures of the spaceport from the safety point of view.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 24 of 58

The Safety Manager can be different from the aerodrome Safety Manager if the latter does not meet all the requirements included in this regulation and that are required to obtain the role of spaceport Safety Manager.

4.8.6 The Compliance Monitoring Manager has the role, responsibilities and requirements expected for this figure as described in the regulation (EU) no. 139/2014 and AMC-GM EASA detailed documentation. In addition to the EASA requirements, the spaceport Compliance Monitoring Manager, that coincides with the aerodrome one is required to have a specific and adequate training regarding the activities, processes and operations that take place in the spaceport.

4.8.7 The Security Manager is the figure in charge for the set of resources and measures that need to be implemented in order to avoid acts of unlawful interference which may damage people, means, infrastructures and both the environment within and in the spaceport surroundings as well as interfere with the planned operations. The Security Manager is required to have an adequate knowledge of the operations that take place in the spaceport regarding the potential access of illicit people, means and materials that may pose a threat.

The Security Manager has the role, responsibilities and requirements expected for this figure as described in the Regulation (EU) no. 185/2010 and in the National Security Program and he operates in compliance with these legal provisions applied to the spaceport, taking into consideration the interrelations and/or interferences with aerodrome activities.

In addition to the requirements for the figure of the aerodrome Security Manager, the role of the spaceport Security Manager is required to have a specific knowledge of the operations that are carried out at the spaceport, in relation to the possible entry of people, vehicles, illicit materials that may constitute a threat and for him is required to have adequate training and expertise in assessing the associated risks.

The Security Manager verifies and validates what already established for the aerodrome regarding the parts that involve the spaceport and their applicability. They also validate all the procedures of the spaceport from the security point of view.

The Security Manager can be different from the aerodrome Security Manager if the latter does not meet all the requirements included in this regulation and that are required to obtain the role of spaceport Safety Manager.

4.8.8 The figures already in charge in the aerodrome management system are required to be accepted by ENAC by virtue of the new obtained role.

4.8.9 The organisation of the spaceport operator must include support staff for the figures in charge, in a sufficient number and adequately qualified in relation with the planned tasks and the activities to be carried out in compliance with the applicable requirements. The spaceport operator ensures that all the personnel involved in operations, maintenance and management of the spaceport is adequately trained in compliance with the defined training programme.

4.9 *Safety Management System (SMS)*

4.9.1 The Safety Management System is a fundamental part of the spaceport management system. It is proportionated to the dimension of the spaceport operator organisation and its related activities, it takes into consideration the associated dangers and risks and it has to be able to assure all the spaceport operator activities, including those which are subcontracted (see par. 3.8).

4.9.2 The safety management system describes the organisation structure, personnel's tasks, powers and responsibilities and ensures that the activities are implemented in a controlled and documented way. The Safety Management System includes:

- a) determination of the safety policies of the spaceport operator;
- b) allocation of responsibilities and tasks as well as the issuance of the provisions for the staff, sufficient for the implementation of the company policies and safety standards;
- c) analysis of the risks related to the activities;
- d) continuous monitoring of safety standards;
- e) recording and analysis of the deviations from the applicable standards;
- f) definition and application of corrective measures;
- g) evaluation of suitability and efficacy of the procedures applied by the organisation.

4.9.3 The spaceport Safety Management System includes also the definition of specific coordination procedures between the activities of the aerodrome and those of the spaceport.

4.9.4 In order to define in detail, carry out, maintain and monitor the efficacy of the spaceport management system and its related SMS, the spaceport operator refers to the contents of the regulation (EU) no. 139/2014, Attachment III, Chpt. D and the detailed specifications included

in the corresponding *Acceptable Means of Compliance (AMC) and Guidance Material (GM)* of the ED Decision 2014/012/R EASA applied to the spaceport.

4.9.5 The spaceport operator is responsible to carry out the training and control programme of the professionals, potentially already employed in the aerodrome management system, that need to be specifically trained for the spaceport peculiarities.

4.9.6 The spaceport operator is responsible to notify anyone who enters the spaceport of the safety rules as well as emergency and evacuation procedures before his entrance, in accordance with the procedures approved for the spaceport.

4.9.7 The spaceport operator is required to develop and implement procedures in order to plan the operations to ensure that each one of those carried out in the spaceport by a suborbital vehicle operator, contractor or sub-contractor does not implicate events which may be harmful for people, considered the proximity of the operations, in time and place, with the operations of any other subject that operates in the spaceport and aerodrome.

4.9.8 The spaceport operator is required to develop and implement an occurrences management plan of the spaceport that includes the procedures for reporting, managing corrective actions and investigating the events that take place in the spaceport site, as well as for cooperating with the authorities in case of accident or serious incident. The occurrences management plan must obtain the approval of ENAC.

4.9.9 The spaceport operator is required to store, for at least three years, all the logs, data and other material necessary to verify that its operations are executed in compliance with the declarations included in the application for certification.

Upon request and in case of accident or serious incident, the spaceport operator is required to preserve and make available for the Authorities all the information and data regarding the occurred event, at least until the conclusion of the investigations of the Authorities and the notification by ENAC that such information and data do not need to be stored anymore.

4.9.10 Within the framework of the management system, the spaceport operator is required to define and maintain a Manual of the spaceport.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 27 of 58

4.10 *The spaceport Manual*

4.10.1 The spaceport Manual is the reference document of the spaceport management system in order to obtain and maintain the certification and the conditions to execute spaceport operations.

4.10.2 The Manual includes all the necessary information for a safe use, functioning and maintenance of the spaceport, its equipment, and the surfaces of obstacle protection and limitation as well as other areas connected with the spaceport.

4.10.3 The Manual includes all the relevant information to describe the spaceport operator organisational structure, in relation with the respective roles and responsibilities. It is the tool through which the entire spaceport operating personnel is duly informed about tasks and responsibilities. In addition, it also describes the spaceport services and structures and it includes all the operational procedures which are needed for the spaceport management or included in other documentation.

4.10.4 The Manual has to be realised in accordance with the requirements of this Regulation. It is a mean of communication of all the procedures and information regarding a safe spaceport management and, as a consequence, it has to provide a clear and unambiguous idea of how the spaceport safety needs to be developed, maintained and managed with reference to the planned operations.

The spaceport Manual clarifies how the Safety Management System is integrated with the more general spaceport management system.

4.10.5 The definition, maintenance and updating of the spaceport Manual is under the spaceport operator responsibility.

4.10.6 The spaceport Manual integrates the contents of the Manual of the aerodrome in which the spaceport operates with regard to the specific aspects related to suborbital operations and the parts that are not in contrast with it. During the definition of the spaceport Manual, the spaceport operator is required to evaluate the contents of the aerodrome Manual in order to verify its consistency, coherence and efficacy with regard to the spaceport planned operations, from the safety and security point of view, by solving potential interferences and contrasts through the identification of specific procedures to be included in the Spaceport Manual.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS
OF SPACEPORTS

Ed. 1

pag. 28 of 58

4.10.7 With regard to detailed definition, execution, maintenance, update, monitoring and communication to ENAC about the related modifications and the efficacy of the Spaceport Manual, the spaceport operator refers to the contents of the regulation (EU) no. 139/2014, Attachment III, Chpt. E and the detailed specifications included in the *Acceptable Means of Compliance (AMC) and Guidance Material (GM)* from the ED Decision 2014/012/R EASA, appropriately applied to the spaceport.

4.10.8 The spaceport operator ensures that all the spaceport personnel and the one of any other involved company can easily access the sections of the spaceport manual that are relevant for their tasks and responsibilities.

CHAPTER 5 - OPERATIONS

5.1 *Operational requirements*

5.1.1 Only suborbital vehicles with the required authorisation and that can be referred to the reference suborbital vehicle can execute operations of suborbital flight.

5.1.2 During the launch/take-off and landing of the suborbital vehicle, all the flight operations expected at the aerodrome are suspended for an adequate period of time, shared with the suborbital vehicle operator and including a margin of time before the launch/take-off and after the landing.

5.1.3 The suborbital flight operations may be executed only with weather conditions not less than Visual Meteorological Condition (VMC): therefore, suborbital flight operations in low-visibility conditions cannot be authorised.

Suborbital flight operations cannot be executed at night.

No suborbital flight operations may be performed if the risk of lightning is detected.

5.1.4 In order to reduce the risk of runway incursion, during the launch/take-off and landing phases of suborbital vehicle no vehicle is authorised to move in the manoeuvring area.

5.1.5 In order to identify mitigation measures when necessary, a risk assessment that considers the hazards related to each operation/activity for the operational phases of pre-flight, flight and post-flight needs to be elaborated.

5.1.6. For any operations to be carried out on the suborbital vehicle, even at night, the spaceport operator ensures that adequate means and procedures to safeguard the safety of operations, spaceport and aerodrome are identified for potential operations to carry out on the suborbital vehicle.

5.1.7 The spaceport operator is obliged to meet the additional applicable requirements included in the Attachment IV of the regulation (EU) no. 139/2014 and the related indications contained in the correspondent Acceptable Means of Compliance and Guidance Material (AMC e GM), published by EASA.

5.1.8 The Suborbital Operator, in the event that anomalies, incidents or accidents occur during the carrying out of ground operations under his responsibility, must comply with the following obligations:

- a) take the necessary emergency measures, such as alerting the emergency services and restoring the safety of the installations;
- b) immediately notify the Spaceport Operator of these anomalies, incidents or accidents;
- c) must identify a specific technical procedure that allows identifying the causes of the event and defining the necessary corrective measures.

5.2. *Refuelling of the suborbital vehicle*

5.2.1 The refuelling operations for one or more typology of fuel/propellant and substances necessary for the engine activation of the single or multi stage suborbital vehicle, follow the technical and operational prescriptions issued by the Ministry of the Interior – National Department of Fire Brigades. With regard to aviation refuelling, the procedures, rules, obligations and responsibilities of the different subjects involved that have already been established for aerodromes, are valid for spaceports.

5.2.2 From an operational point of view, in consideration of the quality, quantity, chemical-physical characteristics of the materials and substances involved as propellant, fuel and oxidiser of the suborbital vehicle, as well as the connected refuelling procedures in relation to the operations degree of complexity, it is required to create a dedicated safety system that identifies roles, responsibilities, means and procedures, aimed at maintaining an adequate operations safety level, in particular with regard to the risks of fire, explosion as well as chemical contamination and environmental pollution, as already established for aerodromes.

5.2.3 The staff dedicated to refuel with combustible which are different from aviation fuel and propellant is required to have the qualifications issued by the National Department of Fire Brigades in charge.

5.2.4 The spaceport operator identifies the refuelling areas for suborbital vehicles on the basis of a specific risk assessment that takes into consideration the risks connected with the operations and the related mitigation measures and procedures, with regard to factors as the distance from the fire control stations, the presence in the proximity of fire extinguishers for first intervention, the position of the suborbital vehicle during refuelling in relation to the



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 31 of 58

infrastructures, structures and means of the spaceport or aerodrome, in accordance with what established in the following chpt. 7.

The spaceport operator identifies the storage areas for propellants, fuels and oxidizer preserving the minimum safety distances to keep from other areas, structures and infrastructures of the spaceport and aerodrome, in accordance with the indications included in the paragraph 7.3.

5.2.5 The spaceport operator ensures that in the area where the refuelling takes place, or in the immediate surroundings, there are efficient firefighting devices having technical characteristics and capabilities compliant with the provisions issued by the National Department of Fire Brigades with the aim of fire prevention and to allow first intervention in case of fire of the propellant, fuel and oxidiser, in accordance with what included in the following chapter 7.

5.2.6 For every refuelling operation, the assistance services providers for refuelling of propellants, fuels and oxidiser (hereinafter referred to as Refuelling Handler) are required to ensure the presence of at least one trained person that executes the planned operations; the suitability of the training is certified by the Handler Responsible person through a specific declaration that has to be available during refuelling operations.

5.2.7 The suborbital vehicle operator is responsible for the refuelling operations carried out by the Refuelling Handler and, therefore, he is required to be provided with specific procedures elaborated in accordance with the provisions of the applicable Certification Regulations.

The suborbital vehicle operator identifies a Responsible person for refuelling that will supervise the related operations. The Responsible person for refuelling executes the necessary activities of coordination and supervision to ensure the observance of the refuelling procedures and to keep in contact with the Refuelling Handler personnel as well as the personnel potentially on board the suborbital vehicle, assuming the obligations of the Responsible person for aerodrome refuelling.

5.2.8 The refuelling may take place in presence of the Responsible person for refuelling only after the spaceport operator confirmation and the approval of the captain of the suborbital vehicle or a delegate.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 32 of 58

5.2.9 The refuelling operations of the suborbital vehicle are not allowed during boarding and disembarkation of the occupants or when the occupants are on board

5.2.10 In case of unavailability of the Firefighting Service cause of emergency occurred in the aerodrome, the refuelling operations cannot start.

5.2.11 ENAC carries out activity of surveillance on refuelling operations, on both routine and extraordinary basis, in order to verify the compliance with the approved laws and procedures and in accordance with inspective programmes.

CHAPTER 6 - INFORMATION AND NAVIGATION SERVICES

6.1 The suborbital flight activity requires the activation of specific information and navigation services for the suborbital vehicle operator (during pre-flight, flight and post-flight phases), the air operators that operate in the same airspace, the operators that operates in the flight corridors, the Authorities involved in rescue and civil protection.

6.2 *Aeronautical information*

6.2.1 ENAV, through aeronautical publications, provides the aeronautical information service (AIS) in accordance with the requirements for certification contained in EU Regulation 2017/373 and subsequent amendments. The aeronautical information and aeronautical data, concerning the objectives of this Regulation, are simultaneously made by ENAV with the joint Aeronautical Information Service of the Air Force (Mil-AIP and NOTAM), with the aim of disseminating the relevant information even to military aircrews.

In AIP ENR 5 (DANGERS TO NAVIGATION) data, information and the cartographic representation of the flight corridor relating to the suborbital vehicle operating at the spaceport are published.

6.2.2 The ANSP (Air Navigation Service Provider) is responsible for providing the air traffic services and through the ARO - Air traffic services Reporting Office makes available the significant information for the realisation of suborbital flights to the aerodrome and spaceport users. For this purpose, the spaceport operator is required to provide adequate spaces to allow the pilots and the operators to carry out the pre-flight activity.

6.2.2.a The ANSP agrees with the Spaceport Operator and the Mission Control Center a Operations Letter, for the definition of procedures related to particular needs or emergencies that may occur during the flight, such as the transmission of flight information related to failures, malfunctions or other, when the flight is off / not in contact with the ANSP.

6.2.3 In addition to the above aeronautical information, the pilots of the suborbital flight operator need to receive the following information, in consistency with the international laws regarding pre-flight information for aircrafts:

- a) significative variations regarding spaceport or aerodrome operations, with particular reference to runways, that may impact suborbital operations;

- b) significant variations of the procedures related to the air navigation service;
- c) construction and maintenance work of the manoeuvring area or in the immediate surroundings;
- d) not usable portions of any part of the manoeuvring area;
- e) description of the runway surface condition in case of rain, through the standard terminology established by the legislation in force for the diffusion of the aeronautical information; the case of slippery runway is included;
- f) presence on the runway of contaminants such as snow, ice, slush, with indication of the contaminant type, diffusion and thickness as well as the estimated surface friction and significant changes of these conditions;
- g) presence of snowdrifts on the runways, taxiways or in the surroundings, with indication of the snowdrift height and the width of the available runway (and changes of these conditions if over 10%);
- h) limitation of use of the spaceport visual aids caused by surfaces contamination;
- i) parked aircraft or presence of other objects on the taxiways or in the immediate surroundings;
- j) presence of other temporary risk factors or obstacles, including the presence of winged animals;
- k) inefficiency or irregular operativity of any section of the light visual aids for navigation or the lighting systems used by the spaceport, including the unavailability of the manoeuvring area lights and the spaceport power supply;
- l) inefficiency, irregular operativity and modifications of the operating conditions of any aid for approaching, navigation and aeronautical communications as well as the secondary power supply of the spaceport;
- m) inefficiency, irregular operativity and/or modifications of the Runway Visual Range System;
- n) variations and limitations of availability of fuel/oxidiser/propellant, oil and oxygen;
- o) Any other significant information to conduct operations.

6.2.4 The mentioned information is made available by the spaceport operator to the ANSP for further distribution to pilots; these information are made available directly by the ANSP for the systems and services under its competence, with a contextual communication to the spaceport operator in order to evaluate the potential operational impact on the aerodrome and spaceport

management. The related procedures are defined in a specific agreement between the Spaceport Operator and the ANSP.

6.2.5 Under specific agreement, the Spaceport Operator establishes together with the ANSP, with the involvement of the Italian Air Force, the procedures to issue a warning to the pilots before launch/take-off and to close the air routes during the launch window as well as other measures considered as necessary by ENAC to protect the public health and safety.

6.3 *Actions in case of significative events*

6.3.1 Every time that, with short notice, it happens or it is expected to happen one of the following conditions, the spaceport operator must immediately inform the ANSP in order to let the authority take it into consideration while providing the services within its competence:

- a) implementation, closure or significant changes in the aerodrome and runways operations, including the variation of the manoeuvring area availability and the declared runway distances;
- b) implementation, cancellation or failure of the aerodrome lights and visual aids for navigation of its competence, for spaceport use;
- c) presence or removal of temporary obstructions to the suborbital vehicle operations in the manoeuvring area;
- d) presence and removal of risk factors caused by snow, ice, water or slush on the manoeuvring area;
- e) presence of animals that represent a risk for the suborbital vehicle operations;
- f) interruption, restore in service and changes of the protection level usually available at the spaceport for rescue and firefighting services;
- g) building or removal of obstacles to air navigation in the take-off and approaching areas;
- h) interruption or restore of the operations of important components of the spaceport lighting system;
- i) variations and limitations of availability of fuel/oxidiser/propellant, oil and oxygen;
- j) any other variation of the structures, flight infrastructures and system condition of normal use that may have effect on the suborbital vehicle flight operations.

6.3.2 The spaceport operator provides the NOTAM/SNOWTAM and forwards the related issue request to the competent AIS structures; it also informs ENAC about the communications sent to the ANSP regarding the above-mentioned situations.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 36 of 58

When the variations involve the rescue and firefighting services provided by the National Department of Fire Brigades, the information are sent by them to the ANSP, ENAC and spaceport operator.

6.4 Space Weather Information

In order to execute suborbital flight activities, it is necessary to activate the service "Space Weather Information" that is aimed at providing spatial weather information regarding total development of suborbital flight, from ground activities to those of the suborbital belt. The space weather information is required to be provided by a specialised services provider, in accordance with the ENAC and ICAO applicable provisions.

The Italian Meteorological Watch Office (MWO) of the Italian Air Force, competent for the entire Italian airspace, may provide this information to the meteorological office of the spaceport, under specific agreements.

In the ENAC Operations Regulation can be found aspects related to Space Weather Information.

The spaceport operator is responsible for reaching agreements with the service provider of Space Weather Information, supplying the necessary data.

6.5 Information for the territory

The spaceport operator, through specific Agreement with Local Authorities and Cost Guard, if necessary, defines the procedures and the information useful for public health protection during operations.

CHAPTER 7 – RISK PREVENTION AND MANAGEMENT

7.1. The several activities connected to spaceport operativity may cause critical events and consequent emergency circumstances that must be managed with modalities and times appropriate to mitigate and, if possible, reverse the effects in terms of damages to persons, goods and environment.

Potential critical events are those connected with the operations related to the suborbital vehicle, sabotages and, in general, acts of unlawful interference, fires, explosions or other.

The spaceport operator is obliged to immediately notify ENAC of events connected to suborbital operations that may risk to endanger persons, goods and environment related to the spaceport, aerodrome and surrounding areas. After the event took place, the spaceport operator is responsible for taking the necessary measures to ensure that the spaceport (or aerodrome) areas and flight corridors exposed in terms of safety point of view are not used by aircrafts and suborbital vehicles.

7.2 Safeguarding human lives, goods and environment within the spaceport and in its surroundings as well as in the associated flight corridors together with ensuring service continuity of both the spaceport and the aerodrome, requires the analysis of the risks associated to all the operations that take place, in relation to their typology and complexity.

The risk analysis is elaborated by the spaceport operator, in collaboration with all the public subjects and the operators interested and/or directly involved in the suborbital pre-flight, flight and post-flight activities. It is subject to an iterative process of continuous review of the performed analysis in order to control the dangers created during the execution of the activities at the spaceport.

This risk analysis is fundamental to achieve the certification of spaceport, to plan the emergencies management and it is implemented in the Emergency Plan.

7.3. *Prevention of fires and explosions risk*

7.3.1 With the aim of safeguarding persons and to protect goods from the risks of fire and explosion, the spaceport must be designed, realised and managed in order to:

- a) minimise the causes of fire and explosion;
- b) limit fire propagation and the explosion effects;
- c) ensure the possibility that the persons will leave unscathed the dangerous area, or interested area by the event, or that they may be rescued in any other way;

d) ensure the possibility to rescue teams to operate in safe conditions.

7.3.2 If in the spaceport there are the activities subject to fire prevention inspections and controls included in the attachment I of the Decree of President of Italian Republic 1 August 2001, no. 151, in addition to the compliance with all the legislation obligations on protection of health and safety of the workers, the spaceport operator is required to activate the related procedures by preparing the documents established in the regulations of the Ministry of the Interior – National Department of Fire Brigades.

7.3.3 If in the spaceport there is a sufficient amount of dangerous substances to fall within the scope of the Legislative Decree 26 June 2015, no.105 *“Implementation of the directive 2012/18/EU on the control of major-accident hazards involving dangerous substances”*, the spaceport operator must start the related procedures for the authorisation of the operations.

7.3.4 In case of existence and use of explosive substances in the spaceport, based on their amount and classification, the spaceport operator must verify the compliance with the formalities required by the Royal Decree 18 June 1931, no. 773 *“Consolidated law on public safety”* and the related regulation of the Royal Decree 6 May 1940, no. 635 *“Regulation on the implementation of the Consolidated law on public safety”*.

7.3.5 In any case, the spaceport operator prepares the technical documents (reports and graphics) concerning the safety aspects in order to allow the verification of the spaceport compliance with the existing technical rules of fire prevention or, in case of lack, with the technical criteria deduced from the basic principles and purposes of fire prevention. The technical documentation must include the identification of fire and explosion dangers, the evaluation of connected risks, the description of the fire prevention strategy with the single prevention and protective measures, both technical and management, and the planning methodology for the adopted fire prevention safety.

7.3.5.a With regard to the applicable aspects, they can be found in the attachment I of the decree of the Minister of the Interior 7 August 2012 *“Provisions on the modality of submission of the requests on fire prevention proceedings and documentation to attach, under the article 2, amendment 7 of the Decree of President of Italian Republic 1 August 2011, no. 151”*



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 39 of 58

7.3.5.b The engineering methods of fire safety and the related performance approach, using the hypothesis and limits of the national and international rules of art, suitable for risk compensation and consequently for reaching the primary safety goals, can be usefully applied to plan the fire prevention safety. To this end, with regard to the applicable aspects, reference can be made to decree 3 August 2015 *“Approval of technical legislation of fire prevention, under art. 15 of the legislative decree 8 March 2006, no. 139”* and to decree of the Minister of the Interior 9 May 2007 *“Provisions for implementation of the engineering approach to fire prevention safety”*

7.3.6 With regard to the reference suborbital vehicle and operations, among the protection measure to limit the consequences related to each scenarios related to accident or serious incident, the spaceport operator is required to evaluate the internal and external safety distances as well as those of protection from the boundary together with the separation modalities of the different dangerous substances (fuels, inflammables, oxidisers and explosive, toxic and/or harmful) also based on their potential reciprocal interaction.

7.3.6.a For the purpose of assessing the safety distances, it is necessary to consider, for each activity carried out within the spaceport, the different potential scenarios related to accident or serious incident (including fires, pool fire/jet fire, BLEVE/Fireball, Flash-Fire, explosions, pressure waves, projection of fragments, toxic and/or harmful emissions). For each scenario, it is required to identify the dimensions of the related areas of damage, both in case of fire and explosion or substances emission.

7.3.6.b For the purpose of assessing the distances, the references are the indications included in the Code of Federal Regulations – Title 14 Aeronautics and Space – Part 420 “License to operate a launch site”, in the amendment acceptable for the National Department of Fire Brigades. The adoption of shorter distances has to be carefully evaluated through adequate techniques of analysis and clearly justified, applying rules and expert judgements based on scientific evaluations and experimentations of the incidental phenomena and the related effects.

7.3.7 The technical documentation has to include a detailed list of all the present dangerous substances (oxidiser, fuel, inflammable, explosive, toxic and/or harmful), their description, maximum quantities currently or potentially stored and the related storage arrangements,

localisation and related immediate and future risks, modalities of handling and use as well as the associated processes with the description of the operating procedures, taking into consideration the available information on best practises, if applicable.

7.3.7.a The graphics, in scale, have to describe the geographic location of the spaceport and represent the site lay-out with the indication of all planned installations, area accessibility conditions and road network, accesses and pedestrian paths as well as driveways, internal, external and protection safety distances and anything else is useful for a comprehensive description of the activity for the purposes of fire safety.

7.3.8 The spaceport operator will have to take any appropriate measure in order to maintain over time and in the phases of preparation, launch, landing and reconfiguration of the vehicle, the internal, external and protection safety distances as well as those from the boundary, the separation of the different dangerous substances also based on their potential reciprocal interaction and all the parameters and assumptions that are underlying the evaluation of the scenarios related to accident or serious incident.

With regard to the spaceport safety management system, the spaceport operator, in accordance with the competent Department of National Fire Brigades of the Ministry of the Interior, is required to prepare and implement a management system of fire security that establishes unavoidable restrictions for spaceport operation.

7.4 Emergency plan and emergency management

7.4.1 For the purpose of emergency management, three phases are identified: knowing and communication, rescue and post-rescue. In the first phase, the ANSP has a leading role because it is in charge of informing with rapidity the operators responsible for rescuing in relation to the type of event occurred. The rescue phase, in particular in the very first moments, involves the intervention of the Fire Brigades and the Medical Units. The post rescue phase involves the assistance to the unharmed involved persons and their relatives if present, as well as the adoption of the necessary measures, including the one regarding the aeronautical field.

During the knowing phase, the spaceport operator has to use alarm signals in order to notify any emergency that is taking place to every person in the spaceport.

7.4.2 For the purposes of emergency management, the spaceport operator prepares and implements a Spaceport Emergency Plan. It falls in its role of holder of the concession for infrastructure management and spaceport certification and also because it has a structured organisation of goods, means and an appropriate knowledge of its potentialities, activities and operations that take place in the spaceport and the related possible conditions of risk.

7.4.3 The plan is related to the typology of the operation and suborbital vehicle that operates at the spaceport (in conformity with the reference suborbital vehicle and operation associated to the spaceport) as well as the typology of the other activities that take place in the spaceport, in the aerodrome in which the spaceport operates and in its surroundings. It takes into consideration the characteristics of the territory and the available resources inside and outside the spaceport, based on the risk assessment related to the activities implemented and the human factor.

7.4.4 The plan establishes the coordination between the spaceport operator and the other organisations, authorities and administrations in charge for ground emergency interventions as well as by sea, or interested in the event. The spaceport operator arranges with them the contents of each related plan which are required to be compatible with the rescue plan of each one of the subjects.

The Plan includes specific procedures to verify the periodical adequacy of the Plan contents and to re-examine the results in order to improve their efficacy.

7.4.5 In the plan, the spaceport operator identifies areas, spaces, means, equipment, qualified personnel and the coordination responsible figure that are required to be immediately available in case of emergency. The organisational structures of the spaceport operator which are responsible for the activities regarding the implementation of the emergency plan are identified in the Spaceport Manual.

7.4.6 The area of application of the emergency plan takes into consideration the flight corridor associated to the operations of the suborbital vehicle that operate at the spaceport and it is defined by ENAC in coordination with the other involved organisations, authorities and administrations.

7.4.7 The Spaceport Emergency Plan supplements the contents of the Aerodrome Emergency Plan in which the spaceport operates for the aspects related to suborbital operations and for the parts which are not in contrast with it. For the definition of the Spaceport Emergency Plan, the spaceport operator needs to evaluate the contents to verify their consistency, coherence and efficacy in relation to the planned operations, solving potential interferences and conflicts with the Aerodrome Emergency Plan through specific procedures included in the Plan itself.

7.4.8 For the detailed definition, implementation, maintenance, update, monitoring, communication of the modifications to ENAC and for the efficacy of the Spaceport Emergency Plan, refer to the contents of the regulation (EU) no .139/2014, Attachment IV, Chpt. B (with particular reference to provision ADR.OPS.B.005) and the detailed specifications included in the related *Acceptable Means of Compliance (AMC) and Guidance Material (GM)* of the ED Decision 2014/012/R EASA, applied to spaceport.

7.4.9 The Spaceport Emergency Plan follows the adoption procedures included in the Aerodrome Emergency Plan and it is included in the Spaceport Manual.

7.5 Rescue and firefighting

7.5.1 A rescue and firefighting service is activated following the provisions included in the Spaceport Emergency Plan and with reference to the results of the risk assessment of the activities carried out in the spaceport.

7.5.2 The National Department of Fire Brigades with territorial jurisdiction provides the services of rescue and firefighting, taking also care of the needed resources and procedures. It operates in compliance with its technical regulation it and the general requirements established in this Regulation.

7.5.3 After evaluation and if necessary, the spaceport operator concludes an agreement with the National Department of Fire Brigades, as integration of the existing agreement for the aerodrome.

7.5.4 The service of rescue and firefighting takes into consideration the specific activities of the spaceport in terms of personnel, equipment, means and procedures and in relation to the suborbital vehicles typology that operate in the spaceport. Its action also considers the used



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 43 of 58

fuels/propellants, the effects generated by falling debris in the flight corridor associated with the suborbital vehicle and, in general, with the any scenario related to accident or serious incident included in the par. 7.3.6.a.

7.5.5 The service of rescue and firefighting is required to be also adequate for interventions in difficult environmental conditions (e.g. if the spaceport is in the proximity of sea, stretch of water or other, or if the launch, approaching and landing operations take place on one of these areas).

7.5.6 The level of protection to ensure to spaceport activities is established by ENAC on the basis of the flight attitude dimensions, in accordance with the National Department of Fire Brigades, with reference to the ICAO firefighting categories defined in the *Doc. ICAO 9137-AN 898 "Airport Services Manual" Part 1 - Rescue and Firefighting*.

The rescue vehicles and the related equipment must be adequate to the spaceport configuration.

On rescue and firefighting vehicles, there must be a rescue equipment proportioned to the protection level established by the requirements issued by the National Department of Fire Brigade.

7.5.7 With reference to what already established for aerodromes, the protection and firefighting service must ensure a two-minute response time and in any case not over three minutes in every part of the runway and not over three minutes in any other part of the manoeuvring area in optimal visibility conditions and area to cover. The response time is the interval between the call to the rescue and firefighting service and the time took by the first vehicle to reach a position suitable to apply at least the 50% of the extinguishing agent established for the specific spaceport category.

7.5.8 The spaceport operator makes available to Fire Brigades a fire control station adequate to host the personnel on duty, the firefighting vehicles, the operations of water loading in the tankers, the needed equipment and extinguishing materials, in appropriate position in relation to the required response times. The fire control station of the spaceport corresponds to the one of the aerodrome where the spaceport operates.

7.5.9 The spaceport operator must implement a system of visual, acoustic and phone alarm for rescue and firefighting personnel that can be activated by the control tower in the fire control station and any other place as well as an analogue system of communication between the control tower and each firefighting post and rescue vehicle. The spaceport operator must identify adequate driveways to implement the services in the established times, in order to ensure a vertically and horizontally free way for rescue vehicles and accesses to external areas through predetermined breaking gates installed in the spaceport fencing.

7.5.10 The spaceport operator is required to verify that what is under its responsibility is already arranged for the aerodrome, for the purposes of rescuing and firefighting, taking care to implement what is necessary to provide the rescue and firefighting service for the spaceport.

7.5.11 In addition to what already established for the definition of the Emergency plan and emergency management regarding rescue and firefighting, for what is not under the competence of Firefighters, the spaceport operator refers to the provisions of the regulation (EU) no. 139/2014, Attachment IV, Chpt. B (with particular reference to ADR.OPS.B.010) and the detailed specifications included in the corresponding *Acceptable Means of Compliance (AMC) and Guidance Material (GM)* of ED Decision 2014/012/R EASA, applied to spaceport.

7.6 Risk plan for spaceport

7.6.1 The environmental protection from the risk of accident of serious incident caused by flight activity is implemented also through the Risk Plans for the spaceport.

7.6.2. The Risk plans define the territory protection areas, where it is expected a progressive limitation of human load, acquired in the urban planning of the involved Municipalities after an agreement with ENAC.

The Risk plans for spaceport are identified in reference to the areas established in the *ENAC Regulation on construction and operations of aerodromes* (2nd edition, amendment 9 of 23 October 2014), chpt. 9, par. 6, "*Risk plans*" for runways with code ICAO 4, integrated in the areas included in the flight corridors associated to the spaceport.

7.6.3 The Risk plans for a spaceport are elaborated by the Municipalities in whose territory the spaceport and the associated flight corridors are located, on the basis of the flight corridors

provided by the spaceport operator. The spaceport operator is required to provide the involved Municipalities with a map of the approved flight corridors and the geographical coordinates to identify them, in accordance with a method accepted by ENAC.

7.6.4 The flight corridor is an area of the Earth's surface with defined dimensions, identified based on estimations, for every direction of the runway, able to contain, with the required level of probability and confidence, the dangerous debris generated by the fall of a suborbital vehicle or its parts during the flight phases planned for suborbital operations.

7.6.5 The spaceport operator shall carry out a quantitative analysis of the risks posed by the reference suborbital vehicle and by the reference suborbital operation to third parties on the ground, in terms of individual and collective risks within the spaceport and the associated flight corridors, through a methodology accepted by ENAC in accordance with its guidelines, showing that:

- a) the individual risk, expressed as the yearly individual probability of casualty (i.e. death or serious injury) for a permanently resident person, is significantly less than the annual individual probability of casualty due to non-occupational accidents, representative of the average background risk experienced by the general public in daily activities, and
- b) the collective risk, expressed as the mean number of casualties (i.e. deaths or serious injuries) per mission, is not greater than $2 \cdot 10^{-5}$.

7.6.6. If it is necessary to create "public safety areas" in the flight corridors where public must not be present during launch/take-off and landing, the spaceport operator is required to demonstrate to have arranged adequate agreements and procedures which application ensures that during flight operations the mentioned areas are actually empty.

7.6.7 It can be found correspondence of each requirement of this Regulation on definition of Risk Plans and analysis of individual and collective risks for third parties within flight corridors through ELOS (Equivalent Level of Safety) considered as acceptable by ENAC.

7.6.8 ENAC grants favourable opinion on spaceport risk plans.

7.6.9 The management of urban planning restrictions to be imposed on the areas surrounding the spaceport is ensured by ENAC on the basis of the provisions of art. 707 of the Navigation Code and may be subject to agreement with the local authorities concerned.

7.7 Monitoring of spaceport surroundings

7.7.1 With reference to the specification ADR.OPS.B.075 of the regulation (EU) no. 139/2014, Attachment IV, Chpt. B, the spaceport operator is responsible for monitoring the spaceport surroundings. The following are subject to monitoring:

- a) obstacle limitation and protection surfaces, defined in compliance with the Spaceport Certification Basis and the other surfaces and areas associated to the spaceport, in order to adopt, in the limits of its authority, the appropriated measures to attenuate the risk associated to penetration in these surfaces and areas;
- b) diurnal and nocturnal obstacles warning, in order to implement actions within its authority, as applicable;
- c) hazards related to human activities, including those potentially attractive to wildlife, and land use in order to implement actions within its authority, as applicable;

7.7.2 The spaceport operator, in accordance with AMC1 ADR.OPS.B.075, is required to implement procedures to monitor the environmental modifications in the spaceport surroundings, in terms of obstacles (including obstacles warning) and hazards related to human activity and additional procedures to evaluate and mitigate the risks associated with the presence of detected obstacles and hazards.

7.7.3 The monitoring procedure of the additional areas involved into the suborbital flight activity compared to the ones identified for the aerodrome in which the spaceport operates, is required to be integrated and compared to the one already included in the Airport Manual.

7.8 Reduction of risk of impact with wildlife

In order to reduce the risk of impact of the suborbital vehicle with wildlife, the existing measures for aerodromes are extended also to spaceport operations.

CHAPTER 8 - SECURITY

8.1. As for the aerodromes, the spaceport operator is responsible for providing human resources, materials, equipment and procedures aimed at protecting the spaceport from acts of unlawful interference.

8.2 The subject responsible for the implementation and monitoring of all what is necessary for the spaceport security is the Security Manager, as identified in the previous par. 4.8.7.

8.3 The same international and national laws established for aerodromes open to commercial air traffic for mail, goods and supplies, operators and spaceport operator means as well as external and flight crew are applied to the spaceport. Analogously, the same international and national laws established for passengers' security checks in the aerodromes open to commercial traffic, with designated stations to check persons and hand luggage, as necessary, are applied to the occupants of a suborbital flight and participants under any title, different from the crew.

8.4 The security measures included in the National Security Program (NSP) and referred to the aerodrome are applied to the spaceport. Among them:

- a) applicable requirements for designing structures and infrastructures;
- b) measure related to access control;
- c) screening of the persons different from passengers and their belongings;
- d) inspection of vehicles, surveillance, patrolling.

In accordance to what is already foreseen for the airport, the Spaceport Operator draws up and implements the "Spaceport Security Program".

The Spaceport Security Program integrates the contents of the Spaceport Security Program of the aerodrome in which the spaceport operates with regard to the specific aspects related to suborbital operations and the parts that are not in contrast with it.

In defining the Spaceport Security Program, the Spaceport Operator must evaluate its contents in relation to the Aerodrome Security Program to verify its congruence, consistency and effectiveness in relation to the planned operations, from a security point of view, resolving any interference and conflicts by means of the identification of specific procedures to be reported in the Spaceport Manual.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 48 of 58

In defining the Spaceport Safety Program, the Spaceport Operator must also evaluate the contents of the Spaceport Manual and the Aerodrome Manual, similarly to the above, to verify their consistency, coherence and effectiveness, resolving any interference and conflicts by identifying specific procedures to be reported in the Spaceport Manual.

8.5 The provisions of the NSP that are applied to the spaceport regard the local assessments to carry out by the authorities in charge in order to identify the sensitive targets in the spaceport, such as the infrastructures, the systems considered to be critical for the spaceport security as well as the one of aerodrome in which the spaceport operates, in order of importance.

With reference to the requirements to design the spaceport, it is needed to identify the critical parts of the security restricted area that will have to include, together with the areas listed in the Community legislation (which can be acceded by the flight participants), the areas of the spaceport chosen as parking area of the suborbital vehicle, the hangar and the fuel/propellant/oxidiser depot.

8.6 The spaceport operator is responsible to prevent the non-authorized access to flight infrastructures, installations subject to danger of explosion or fire and any other area of the spaceport that, otherwise, is not controlled by the suborbital vehicle operator (on the basis of the agreement with the spaceport operator), through security personnel, surveillance systems, physical barriers or other means approved by ENAC during the certification process of the spaceport.

8.7 The spaceport operator, in application of the NSP provisions, is required to identify and submit to competent authorities approval the appropriate security measures that ensure an adequate level of protection.

The security measures that must be identified to guarantee the level of security appropriate to the type of operation carried out will be identified through a specific risk assessment and implemented through consequent risk management, in accordance to the provisions of the National Security Program.

8.8 As regards the screening of the suborbital flight participants and their belongings to enter security restricted areas or, partially, critical ones, for both reasons of training, if required, and



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 49 of 58

execution of the suborbital flight, the application of the standard procedures of security will be identified and proposed by the spaceport operator, also based on its operational needs.

The procedures are approved by ENAC in coordination with public security Authorities, on the basis of a risk assessment and in consideration of the nature, measure and frequency of the traffic that takes place on the spaceport and the typology (dimensions) of the used suborbital vehicles.

8.9 Upon presentation of substantiated request of the spaceport operator and following authorisation of ENAC in coordination with public security Authorities, in order to identify the necessary security measures, it is possible to refer to the Regulation (EU) no. 1254/2009 of 18 December 2009 (small aerodromes) and subsequent amendments and additions. This regulation establishes the possibility to apply alternative security measures compared to the ones for the commercial aerodromes with high traffic, based on a local risk assessment. In other words, it allows the competent authorities to adopt security special procedures on condition that there are objective motivations that justify the special procedure. What just mentioned in reference to the standards 2.2.2 and 3.1.3 of the ICAO Annex 17.

8.10 The spaceport operator is required to assess the impact, in terms of security, of the suborbital operations that take place at the spaceport, taking into consideration the presence of the hosting aerodrome in order to ensure the protections levels required in the respective areas of activity.

CHAPTER 9 – ISSUE OF THE SPACEPORT CERTIFICATION*9.1. The spaceport certification*

9.1.1 The spaceport certification attests the compliance of the spaceport infrastructures and management system with the requirements of this Regulation, and in particular, it attests that:

- a) the company organisation, the means, the personnel, the management procedures and the other necessary elements for a correct spaceport management and safety are adequate to execute suborbital operations;
- b) the physical characteristics of the spaceport (infrastructures and systems), surrounding areas and associated flight corridors allow the execution of the reference suborbital operations with the reference suborbital vehicle, as provided for in this regulation;
- c) the Spaceport Manual is compliant with the provisions included in the previous chpt. 4.

9.1.2 The certification is unique and contextually referred to the spaceport and the spaceport operator because it is the holder of the concession of spaceport management and already operator of the aerodrome in which the spaceport operates. With the issue of the spaceport certification, the spaceport operator assumes the attributes as well as the obligations included in this Regulation regarding the maintenance of the certification itself.

9.1.3 The spaceport operator operates in compliance with the field of application, limitations, conditions and privileges defined in the certification and documents recalled in it.

9.1.4 The certification is issued by ENAC to the applicant spaceport operator on the basis of the favourable results of its verifications when:

- a) the site is designated as spaceport by the Minister of Infrastructure and Transport;
- b) the applicant for the certification of spaceport owns a certification of aerodrome where the spaceport is located, issued under regulation (EU) no. 139/2014 for aerodrome code adequate for the reference suborbital operations and vehicle;
- c) the correspondence of the Basis of certification with the requirements of the Specification of Certification established in this Regulation (see chpt. 2) is verified. It is included the compliance verification for the potential cases of *Equivalent Level of Safety (ELoS)*, *Special Conditions (CS)* and existing *Deviations from certification specifications (DAAD)* authorised for the aerodrome in the context of the related certification or provided for in the application for spaceport certification;

- d) the applicant proved the compliances of the technical and physical characteristics of the spaceport with the notified Basis of certification;
- e) the applicant for the certification proved the compliances of its organisation and management system with the requirements included in this Regulation;
- f) applicant for the certification has:
 - 1) identified at least one reference suborbital vehicle and one reference suborbital operation;
 - 2) proved that the reference suborbital vehicle can safely operate in the spaceport and that the reference suborbital operation can be safely executed;
 - 3) identified the flight corridors suitable to execute the flight of the reference suborbital vehicle as part of the reference suborbital operation;
 - 4) proved that the risk for Third Parties on the ground within the spaceport and in the associated flight corridors is not exceeding the one prescribed by the requirements of this Regulation in terms of collective risk per mission, individual risk per year and risk for the critical infrastructures in the flight corridor, taking into consideration the potential ELOS considered acceptable by ENAC;
- g) the applicant for the certification obtained the advices and clearance by the competent National Department of Fire Brigades regarding fire prevention and protection for infrastructures, systems and activities connected with spaceport management.

9.1.5 The certification of spaceport is produced in the forms provided for by ENAC; the certification specification is attached to it, as an integral part.

9.1.6 The Certification Specification includes:

- a) the identification of the reference suborbital vehicle, reference suborbital operation and highest number of suborbital operations per year per typology of suborbital vehicle;
- b) the aerodrome ICAO code which is applicable to the spaceport;
- c) the main technical and operational characteristics of the spaceport;
- d) the service providers for ATS, apron and fire service management;
- e) references regarding the auxiliary electrical supply of the visual aids for navigation in the service of the spaceport;
- f) operational conditions and limitations;
- g) the Firefighting category;

- h) the reference to Certification Basis and Spaceport Manual;
- i) the flight corridor identified in relation to the suborbital vehicle that means to operate at the spaceport;
- j) possible exemption/dispensation from the requirements as authorised;
- k) the main responsibilities of the Certification holder.

9.1.7 The spaceport certification is not transferable. In case of transfer instance of the spaceport management, the spaceport operator is required to inform ENAC as well as the provider of aeronautical information service and it has to return the certification upon the date of cessation of the activity.

ENAC will conduct the necessary verifications to issue a new certification to the successor spaceport operator. In the need of keeping the infrastructure operational, the outgoing spaceport operator will ensure the service continuity in the safety conditions described in this Regulation.

9.1.8 The spaceport certification does not exempt the holder from complying with any other legal requirement.

9.2 *Application for certification*

9.2.1 For the purpose of issuing the Certification of spaceport, the applicant is required to submit the application for certification in the forms and modalities established by ENAC.

In addition to the provisions included in the specification ADR.OR.B.015 – *Application for certification* contained in the Attachment III of the regulation (EU) no. 139/2014 and the correspondent AMC ADR.OR.B.015, referred to spaceport, the attached documentation must include:

- a) a general planimetry in adequate scale, conveniently detailed, reporting the boundaries of the aerodrome areas and those of the spaceport (if not coincident), as well as the structures and related intended use, the existing infrastructures, specifying if shared with the aerodrome or of exclusive use of the spaceport;
- b) detailed planimetries including the description of the spaceport layout and the physical characteristics of infrastructures, dedicated systems, buildings, dedicated installations;
- c) descriptive graphics of the obstacles limitation surfaces;
- d) layouts of the areas affected by every operation regarding the suborbital flight activities, with particular reference to the boundaries of the launching site;

- e) identification of the reference suborbital vehicle, reference suborbital operation and the highest number of suborbital operations per year per typology of suborbital vehicle;
- f) an adequately scaled map that identifies and describes the flight corridors associated to the reference suborbital vehicle and the reference suborbital operation, reporting the data regarding population density, urban settlements, critical infrastructures and possible predefined debris falling areas or flight forced termination areas located within the corridors, with a detailed resolution established by ENAC;
- g) the identification of the Certification Specification – CS applicable to the operational characteristics of the spaceport, supplementary of those of the aerodrome of reference, highlighting:
 - i. potential deviation from regulatory requirements (DAAD), Equivalent Level of Safety (ELoS) or Special Condition (SC) regarding the spaceport;
 - ii. authorised DAAD, ELoS and SC for the aerodrome where the spaceport operates, in the context of the related certification;
 - iii. manner in which the compliance with the applicable requirements established in this Regulation will be demonstrated;
- h) the weather, environmental and operational conditions and the potential limitations.

9.3 *Demonstrations of compliance with the regulation*

9.3.1 For the purpose of issuing the spaceport certification, the applicant/ spaceport operator is required to provide adequate demonstrations of compliance with the regulatory requirements in relation to the technical and operational characteristics of the spaceport, its organisation and management system.

The compliance of the requirements already demonstrated in the aerodrome certification can be proved through a declaration, with the exception of ELOS, Special Conditions e DAAD (Deviation Acceptance and Action Documents).

9.3.2 In order to ensure the compliance with this Regulation and the norms here recalled regarding physical and technical characteristics of the spaceport, the spaceport operator, for each certification specification, will provide supporting documentation, as required by ENAC. If necessary, the spaceport operator will be allowed to resort to “ELoS - Equivalent Level of Safety” and “CS - Special Conditions” (in reference to what provided for in specifications ADR.AR.C.020 and ADR.AR.C.025 of Reg. (EU) no. 139/2014).

9.3.3 In order to ensure the compliance with this Regulation, the certification specifications included in the aerodrome certification and related to Equivalent Level of Safety (ELoS), Special Condition (SC) or temporary deviations (DAAD), are required to be reassessed by the spaceport operator which has to demonstrate their compliance in relation to the reference suborbital vehicle.

9.3.4 The Certification Basis (see par. 2.4) is established and notified by ENAC to the applicant.

9.3.5 In order to demonstrate the compliance of the management system with the requirements of this Regulation, in reference to what established in the Regulation (EU) no. 139/2014 (with particular reference to ADR.OR.B.025) and correspondent AMC, the spaceport operator is required to provide:

- a) demonstration of compliance with the requirements of this Regulation of its organisation and management system;
- b) copy of the spaceport manual with evidence of the verifications carried out on the aerodrome manual in order to evaluate potential conflicts between the two documents, by indicating, in case, the conflicts resolution modalities;
- c) Evidence of the agreements with third parties that provide or intend to provide services in the spaceport and whose activities may have impact on safety;
- d) qualification declarations and certifications of qualification of the Accountable Manager and the subjects responsible for the different spaceport sectors and fields.

9.3.6 In order to ensure the compliance with this Regulation and the norms here recalled regarding of the management system, the spaceport operator may propose alternative means of compliance.

9.3.7 In order to ensure the compliance with this Regulation, the potential AltMoc included in the aerodrome certification that may regard the spaceport, are required to be re-evaluated by the spaceport operator that has to demonstrate the compliance in relation to the activities and operations planned in the spaceport.

9.3.8 Upon receipt of the application, ENAC examines the documentation submitted, verifies the compliance with the applicable requirements and, during the verification process, may require any safety or operational inspection, test, verification, trial, evaluation that consider to be necessary.

9.3.9 The applicant/Spaceport Operator is required to execute and provide documentary evidence of all the necessary safety or operational actions, inspections, tests and analysis as well as to demonstrate the compliance with the requirements of this Regulation to the competent Authority.

9.3.10 ENAC may require the compliance with requirements considered to be applicable to the spaceport and published after the transmission of the application for certification if these are considered to be essential for operations safety.

9.4 *Validity of the spaceport certification*

9.4.1. The spaceport certification has unlimited validity and remains valid provided that:

- a) the spaceport operator maintains the compliance with the pertinent requirements of this Regulation and, in particular, the spaceport maintains the compliance with the Certification Basis, taking into consideration the provisions related to handling of findings (as established in the regulation (EU) no. 139/2014 - ADR.OR.C.020 and related AMC – GM);
- b) ENAC or other organisations entrusted by ENAC are granted access, in occasion of ordinary and extraordinary inspections, to the infrastructures, spaceport operator organisation and organisation of the external subjects that carry out activities on behalf of the spaceport operator.

This to verify the maintenance of the requirements compliance of this regulation (as established in the regulation (EU) no. 139/2014 - ADR.OR.C.015 and related AMC – GM) or to control and supervise any activities carried out by anyone and related to the operation of the spaceport and the activities that take place in it, including those of the suborbital vehicle operator;

- c) events that can affect the regulatory safety and security conditions do not take place;
- d) the spaceport operator notifies its intention to transfer the spaceport management to a different subject.

9.4.2. In the event of non-compliance with the above-mentioned cases, ENAC can limit, suspend or cancel the spaceport certification.

9.4.3 For the purposes of issuing and maintaining the spaceport certification, ENAC implements surveillance programme on the spaceport that established periodic verifications of infrastructures, installations, systems, organisation of spaceport operator and management system, by verifying:

- a) the compliance with the Certification Basis and all the applicable requirements of this Regulation before issuing the certification or the approval;
- b) the constant compliance with the Certification Basis and all the requirements of this Regulation, applicable to spaceport and spaceport operator;
- c) the realisation of appropriated security measures, in relation to necessity of implementing an immediate reaction for a security problem;
- d) the correct management of the reporting and investigation system of occurrences.

9.4.4 For the purposes of issuing and maintaining the spaceport certification, ENAC operates following the provisions for aerodromes included in the Attachment II to the regulation (EU) no.139/2014 and the correspondent AMC and GM from ED Decision 2014/012/R EASA, applied to spaceport.

9.5. *Modifications*

9.5.1 The certification terms and conditions, including the related limitations, are established in the certificate, whose range can be extended by ENAC upon applicant request and following a favourable verifications outcome. It is spaceport operator obligation to promptly report to ENAC the circumstances that may determine a variation of terms, conditions and limitations included in the spaceport certification.

9.5.2 Any modification that affects the certification conditions, on its basis of certification and spaceport equipment or that interferes significantly with elements of the spaceport management system, is required to get a preventive ENAC approval. If the spaceport operator implements modifications without the necessary approval even if required, ENAC will consider the need to suspend, limit or cancel the certification.



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 57 of 58

9.5.3 With regard to the modifications of terms, conditions and limitations of the spaceport certificate, the spaceport operator operates following the provisions included in the regulation (EU) no. 139/2014 with particular reference to ADR.OR.B.040 and ADR.OR.B.050 as well as to correspondent AMC of ED Decision 2014/012/R EASA.

9.5.4 If the modifications proposed by the spaceport operator may interfere with the infrastructures or the management of the aerodrome in which the spaceport operates, these modifications will have to be evaluated and approved in the certification process of the aerodrome. In this case, in order to approve the modification of the spaceport certification, the spaceport operator will have to contextually approve the correspondent modifications to the aerodrome in accordance with the legislation applicable to the aerodrome by submitting the related approval.

9.5.5 The application for modification is submitted to ENAC by the spaceport operator and in the forms established by ENAC. The spaceport operator is required to indicate the certification specifications applicable to the modification proposed, together with the means of compliance that are intended to be used and the related demonstration of compliance.

9.5.6 ENAC approves the modification when the spaceport operator has demonstrated, satisfactorily for ENAC, the compliance with the requirements established in this Regulation. If the approved modification affects terms, conditions and limitations of the spaceport certification, ENAC adjusts these conditions.

9.5.7 The minor modifications, that may be implemented without ENAC preventive approval, are managed and notified to ENAC following a specific procedure approved by ENAC that defines the field of application of these modifications and describes how these will have to be managed and notified.

9.5.8 Without precluding the certification validity, any modification to the reference suborbital vehicle or suborbital operation represents a major modification of the spaceport certificate.

9.6 The spaceport spaceport operator, in order to operate, is required to have:

- a) the spaceport certification;



Regulation

REGULATION ON CONSTRUCTION AND OPERATIONS OF SPACEPORTS

Ed. 1

pag. 58 of 58

- b) all the advices, approval, authorisations issued by other Authorities or administrations which are required by Law to realise construction projects or manage the planned activities of the spaceport (i.e. advice/certification issued by the competent National Department of Fire Brigades).