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COMMISSION IMPLEMENTING REGULATION (EU) .../...

of **XXX**

on the rules and procedures for the operation of unmanned aircraft

(Text with EEA relevance)

This draft has not been adopted or endorsed by the European Commission. Any views expressed are the preliminary views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission.

COMMISSION IMPLEMENTING REGULATION (EU) .../...

of XXX

on the rules and procedures for the operation of unmanned aircraft

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

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

Having regard to Regulation (EU) 1139/2018 of the European Parliament and of the Council on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 216/2008¹ and (EC) No 552/2004 and, and in particular Article 57 thereof,

Whereas:

- (1) Unmanned aircraft, irrespective of their mass, can operate within the same Single European Sky airspace, alongside manned aircraft, whether airplanes or helicopters.
- (2) As for manned aviation, a uniform implementation of and compliance with rules and procedures should apply to operators, including remote pilots, unmanned aircraft and unmanned aircraft system ('UAS') operations.
- (3) UAS operations should be as safe as those in manned aviation.
- (4) Technologies for unmanned aircraft allow a wide range of possible operations. Requirements related to the airworthiness, the organisations, the persons involved in the operation of UAS and unmanned aircraft operations should be set out in order to ensure safety for people on the ground and other airspace users during the operations of unmanned aircraft.
- (5) The rules and procedures applicable to UAS operations should be adapted to the nature and risk of the operation or activity, the operational characteristics of the unmanned aircraft concerned and the characteristics of the area of operations such as the population density, surface characteristics, and the presence of buildings.
- (6) The risk level criteria as well as other criteria should be used to establish three categories of operations: the 'open', 'specific' and 'certified' categories.
- (7) Proportionate risks mitigation requirements should be applicable to UAS operations according to the level of risk involved, the operational characteristics of the unmanned aircraft concerned and the characteristics of the area of operation.
- (8) Some rules applicable to the initial and continuing airworthiness of manned aircraft already exist and can continue to be applied to unmanned aircraft.
- (9) Operations in the 'open' category, which should cover operations that present the lowest risks, should not require UAS that are subject to standard aeronautical

¹ OJ L 212, 22.8.2018, p. 1.

compliance procedures, but should be conducted using the UAS classes that are defined in Regulation (EU) .../... [DA].

- (10) Operations in the ‘specific’ category should cover other types of operations presenting a higher risk and for which a thorough risk assessment should be conducted to indicate which requirements are necessary to keep the operation safe.
- (11) A system of declaration by an operator should facilitate the enforcement of this Regulation in case of low risk operations conducted in the ‘specific’ category for which a standard scenario has been defined with detailed mitigation measures.
- (12) Operations in the ‘certified’ category should, as a principle, be subject to rules on certification of the operator, the licensing of remote pilots and the certification of the aircraft.
- (13) Whilst mandatory for the ‘certified category’, for the ‘specific’ category a certificate delivered by the competent authorities may also be required, including for the design, production maintenance and operation of unmanned aircraft and their engines, propellers, parts, non-installed equipment and equipment to control them remotely, as well as for the personnel, including remote pilots and organisations involved in those activities.
- (14) In case of UAS operations involving large or complex UAS operating continuously over open assemblies of people, in BVLOS conditions, within high-density airspace, or for transport of people or the carriage of dangerous goods, the type certification of the unmanned aircraft as well as the approval of the operator organisation should be required according to the risk assessment. In such cases, these operations should be classified as a ‘certified’.
- (15) Rules and procedures should be established for the marking and identification of unmanned aircraft and for the registration of operators of unmanned aircraft or certified unmanned aircraft.
- (16) The information about registration of certified unmanned aircraft and of operators of unmanned aircraft that are subject to a registration requirement should be stored in digital, harmonised, interoperable national registration systems, allowing competent authorities to access and exchange that information. The mechanisms to ensure the interoperability of the national registers in this Regulation should be without prejudice to the rules applicable to the future repository referred to in Article 74 of Regulation (EU) 2018/1139.
- (17) For reasons falling outside the scope of this Regulation, including public security or protection of privacy and personal data, Member States should be allowed to lay down national rules in accordance with Union law.
- (18) National registration systems should comply with the applicable Union and national law on privacy and processing of personal data and the information stored in those registrations systems².
- (19) UAS operators and remote pilots should ensure that they are adequately informed about applicable Union and national rules relating to the intended operations, in

² Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88.

particular with regard to safety, privacy, data protection, liability, insurance, security and environmental protection.

- (20) Unmanned aircraft noise and emissions should be minimized as far as possible taking into account the operating conditions and various specific characteristics of individual Member States, such as the population density, where noise and emissions are of concern. In order to facilitate the societal acceptance of UAS operations, Regulation[...] [DA] includes maximum level of noise for unmanned aircraft operated close to people in the open category. In the specific category there is a requirement for the operator to develop guidelines for its remote pilots so that all operations are flown in a manner that minimises nuisances to people and animals.
- (21) Current national certificates should be adapted to certificates complying with the requirements of this Regulation.
- (22) In order to ensure the proper implementation of this Regulation, appropriate transitional measures should be established. In particular, Member States and stakeholders should have sufficient time to adapt their procedures to the new regulatory framework before this Regulation applies.
- (23) The new regulatory framework for UAS operations should be without prejudice to the applicable environmental and nature protection obligations otherwise stemming from national or Union law.
- (24) While the “U-Space” system including the infrastructure, services and procedures to guarantee safe UAS operations and supporting their integration into the aviation system is in development, this Regulation should already include requirements for the implementation of three foundations of the U-Space system, namely registration, geo-awareness and remote identification which will need to be further completed.
- (25) Since model aircraft are considered as UAS and given the good safety level demonstrated by model aircraft operations in clubs and associations, it is not necessary to adopt particular provisions for recreational flight activities conducted within the framework of model aircraft clubs and associations.
- (26) The measures provided for in this Regulation are in accordance with the opinion of the committee established in accordance with Article 127 of Regulation (EU) 1139/2018,

HAS ADOPTED THIS REGULATION:

Article 1
Subject matter

This Regulation lays down detailed provisions for the operation of unmanned aircraft systems as well as for personnel, including remote pilots and organisations involved in those operations.

Article 2
Definitions

For the purposes of this Regulation, the definitions in Regulation (EU) 1139/2018 apply.

The following definitions also apply:

- (a) ‘unmanned aircraft system’ (‘UAS’) means an unmanned aircraft and the equipment to control it remotely;

- (b) ‘unmanned aircraft system operator’ (‘UAS operator’) means any legal or natural person operating or intending to operate one or more UAS;
- (c) ‘assemblies of people’ means gatherings where persons are prevented to move away from the trajectory of UA due to the density of the people present;
- (d) ‘geographical zone’ means an restricted area of airspace established by the competent authority in order to address risks pertaining to safety, privacy, protection of personal data, security or the environment, arising from UAS operations;
- (e) ‘robustness’ means the property of mitigation measures resulting from combining the safety gain provided by the mitigation measures and the level of proof that the safety gain has been achieved;
- (f) ‘standard scenario’ means a type of UAS operations in the ‘specific’ category, as defined in Appendix 1 of the Annex, for which a precise list of mitigating measures has been identified in such a way that the competent authority can be satisfied with declarations in which operators declare that they will apply the mitigating measures when executing this type of operation;
- (g) ‘visual line of sight operation’ (‘VLOS’) means a type of UAS operation in which, without any support, the remote pilot is able to maintain continuous unobstructed visual contact with the unmanned aircraft, allowing the pilot to control the flight path of the unmanned aircraft in relation to other aircraft, people and obstacles;
- (h) ‘beyond visual line of sight operation’ (‘BVLOS’) means a type of UAS operation where the operation is conducted without the continuous unobstructed visual contact of the remote pilot with the unmanned aircraft, allowing the operation to be further automated;
- (i) ‘light UAS operator certificate’ (‘LUC’) means a certificate issued to a UAS operator by a competent authority as set out in part C of the Annex;
- (j) ‘model aircraft club or association’ means an organisation legally established in a Member State for the purpose of conducting leisure flights, air displays, sporting activities or competition activities using UAS;
- (k) ‘dangerous goods’ means articles or substances, including in particular flammable liquids, flammable solids, self-reactive substances and desensitized explosives, substances liable to spontaneous combustion emit flammable gases, oxidizing substances; organic peroxides, toxic and infectious substances, radioactive material, corrosive substances as well as miscellaneous dangerous substances and articles, including environmentally hazardous substances, that the unmanned aircraft is carrying and which may pose a risk to health, safety, property or the environment in case of incident or accident;
- (l) ‘remote identification’ means a system that allows for the verification of the identity of the unmanned aircraft operator as well as verification of other relevant information without physical access to the unmanned aircraft ;
- (m) ‘follow-me mode’ means a mode of operation of a UAS where the unmanned aircraft constantly follows a person or device within a predetermined radius;
- (n) ‘geo awareness system’ means a system that detects a potential breach of airspace limitations and alerts the pilots or, in case of automated or autonomous UAS operations, UAS operators so that they can take immediate and effective action to prevent or stop that breach;

- (o) ‘privately built UAS’ means a UAS assembled or manufactured for the producer’s own use, not including UAS assembled from sets of parts placed on the market as a single ready-to-assemble kit;
- (p) ‘autonomous operation’ means an operation during which an unmanned aircraft operates without the remote pilot being able to intervene;
- (q) ‘uninvolved persons’ means persons who are not participating in the UAS operation and who are not aware of the instructions and safety precautions given by the UAS operator;
- (r) ‘making available on the market’ means any supply of a product for distribution, consumption or use on the Union market in the course of a commercial activity, whether in exchange of payment or free of charge;
- (s) ‘placing on the market’ means the first making available of a product on the Union market.

*Article 3
Categories of UAS operations*

- 1. UAS operations shall be performed in the open, specific or certified category, subject to the following conditions:
 - (a) UAS operations in the open category shall not be subject to any prior authorisation, nor to an operational declaration by the UAS operator before the operation takes place;
 - (b) UAS operations in the specific category shall require an operational authorisation issued by the competent authority, or a declaration issued by a UAS operator;
 - (c) UAS operations in the certified category shall require the certification of the UAS and of the operator, and the licensing of the remote pilot where applicable.

*Article 4
'Open' category of UAS operations*

- 1. Operations shall be classified as UAS operations in the open category only where the following requirements are met:
 - (a) the UAS shall belong to one of the classes set out in Regulation (EU) .../... [DA] or be privately built;
 - (b) the unmanned aircraft shall have a maximum take-off mass of no more than 25 kg;
 - (c) the remote pilot shall keep a safe distance from people and not fly over open air assemblies of people;
 - (d) the remote pilot shall keep the unmanned aircraft in VLOS at all times except when flying in follow-me mode as specified in Part A of the Annex;
 - (e) the maximum flight distance from the surface shall be no more than 120 meters, except when overflying an obstacle, as specified in Part A of the Annex;

2. UAS operations in the open category shall be divided in three sub-categories in accordance with the requirements set out in Part A of the Annex.

Article 5

'Specific' category of UAS operations

1. Where one of the requirements laid down in Article 4 or in Part A of the Annex is not met, a UAS operator shall be required to obtain an authorisation to operate from the competent authority in the Member State where it is registered.

This authorisation shall not be required for standard scenarios for which a declaration by the UAS operator is deemed sufficient in accordance with point UAS.SPEC.020 or where the UAS operator holds a LUC with appropriate privileges in accordance with point UAS.LUC.060.

2. With the view to obtaining an authorisation, the operator shall perform a risk assessment in accordance with Article 11 and propose adequate mitigating measures. This risk assessment including the adequate mitigating measures shall be communicated to the competent authority together with the application for the authorisation.
3. In accordance with point UAS.SPEC.040 laid down in Part B of the Annex, the competent authority shall issue an authorisation to operate, if it considers that the operational risks are adequately mitigated in accordance with Article 12.
4. The competent authority shall specify whether the authorisation concerns:
 - (a) the approval of a single operation or a number of operations specified in time or place and of its associated precise list of mitigating measures;
 - (b) the approval of a LUC, in accordance with part C of the Annex.
5. Where the UAS operator submits a declaration in accordance with point UAS.SPEC.020 laid down in Part B of the Annex for an operation complying with a standard scenario as defined in Appendix 1 to that Annex, the UAS operator shall not be required to obtain an authorisation to operate in accordance with paragraphs 1 to 4 of this Article and the procedure laid down in Article 12 shall apply.

Article 6

'Certified' category of UAS operations

1. The following operations shall be classified as UAS operations in the certified category:
 - (a) UAS operations involving an unmanned aircraft with any dimension above 3 m or kinetic energy above 34 KJ, intended to be operated over open assemblies of people;
 - (b) UAS operations for the transport of people;
 - (c) UAS operations for the carriage of dangerous goods, which may result in high risk for third parties in case of accident.
2. In addition, UAS operations shall be classified as UAS operations in the certified category where the competent authority, based on the risk assessment provided for in Article 11, considers that the risk of the operation cannot be adequately mitigated

without the certification of the UAS and of the UAS operator and without the licensing of the remote pilot, when applicable.

Article 7

Rules and procedures for the operation of UAS

1. UAS operations in the open category shall comply with the operational limitations set out in Part A of the Annex.
2. UAS operations in the specific category shall comply with the operational limitations set in the authorisation by the competent authority as referred to in Article 12 or in the declaration of the UAS operator based on a standard scenario defined in Appendix 1 to the Annex.

This paragraph shall not apply where the UAS operator holds a LUC with appropriate privileges.

3. UAS operations in the certified category shall be subject to the requirements laid down in:
 - (a) Commission Regulation (EU) No 965/2012³;
 - (b) Commission Regulation (EU) No 1332/2011⁴.

Article 8

Rules and procedures for the competency of remote pilots

1. Remote pilots operating UAS in the open category shall comply with the competency requirements set in Part A of the Annex.
2. Remote pilots operating UAS in the specific category shall comply with the competency requirements set out in the operational authorisation by the competent authority or in the standard scenario defined in Appendix 1 to the Annex or as defined by the LUC.

Article 9

Minimum age for remote pilots

1. The minimum age for remote pilots in the open category shall be:
 - (a) 16 years when operating in subcategory A1 as specified in Part A of the Annex to this Regulation, with a UAS of class C1 as defined in Part 2 of the Annex to Regulation (EU) .../... [DA];
 - (b) 18 years when operating in subcategory A2 or A3 as specified in Part A of the Annex.
2. No minimum age for remote pilots shall be required:
 - (a) when they operate in subcategory A1 as specified in Part A of the Annex to this Regulation, with a UAS Class C0 defined in Part 2 of the Annex to

³ Commission Regulation (EU) No 965/2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council, OJ L 296, 25.10.2012, p.1.

⁴ Commission Regulation (EU) No 1332/2011 laying down common airspace usage requirements and operating procedures for airborne collision avoidance pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council, OJ L 336, 20.12.2011, p. 20.

Regulation (EU) .../... [DA] that is a toy within the meaning of Directive 2009/48/EC;

- (b) for homebuilt UAS with a maximum take-off mass of less than 250g.
- 3. The minimum age for remote pilots operating a UAS in the specific category shall be fixed at 16 years.
- 4. Member States may lower the minimum age following a risk-based approach taking into account the factors set out in Article 11(1)(c):
 - (a) for remote pilots operating in the open category by up to 4 years;
 - (b) for remote pilots operating in the specific category by up to 2 years.
- 5. Where a Member State lowers the minimum age for remote pilots, those remote pilots shall only be allowed to operate a UAS on the territory of that Member State.
- 6. Member States may recognise the validity of authorisations issued by competent authorities of other Member States to remote pilots below the minimum ages set out in paragraph 1.

Article 10

Rules and procedures for the airworthiness of UAS

- 1. UAS used in operations in the open category shall comply with the technical requirements set out in Regulation (EU) .../... [DA].
- 2. UAS used in operations in the specific category shall feature the technical capabilities set in the operational authorisation by the competent authority or in the standard scenario defined in Appendix 1 to the Annex or as defined by a LUC.
- 3. UAS used in operations in the certified category shall comply with the requirements set out in:
 - (a) Commission Regulation (EU) No 748/2012⁵;
 - (b) Commission Regulation (EU) No 640/2015⁶;
 - (c) Commission Regulation (EU) No 1321/2014⁷.

Article 11

Rules for conducting an operational risk assessment

- 1. An operational risk assessment shall:
 - (a) describe the characteristics of the UAS operation;
 - (b) set operational safety objectives;
 - (c) identify the risks of the operation on the ground and in the air considering:

⁵ Commission Regulation (EU) No 748/2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations. OJ L 224, 21.8.2012, p.1.

⁶ Commission Regulation (EU) No 640/2015 on additional airworthiness specifications for a given type of operations and amending Regulation (EU) No 965/2012, OJ L 106, 24.04.2015, p. 18.

⁷ Commission Regulation (EU) No 1321/2014 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks. OJ L 362, 17.12.2014, p. 1.

- i. the extent to which third parties or property on the ground could be endangered by the activity;
 - ii. the complexity, performance and operational characteristics of the unmanned aircraft involved;
 - iii. the purpose of the flight, the type of UAS and class of airspace used;
 - iv. the type, scale, and complexity of the UAS operation or activity, including, where relevant, the size and type of the traffic handled by the responsible organisation or person;
 - v. the extent to which the persons affected by the risks involved in the UAS operation are able to assess and exercise control over those risks.
 - (d) identify a range of possible risk mitigating measures;
 - (e) determine the necessary level of robustness of the selected mitigating measures in such a way that the operation can be conducted safely.
2. The description of the UAS operation shall include at least the following:
 - (a) the nature of the activities performed;
 - (b) the operational environment and geographical area for the intended operation, in particular overflown population, orography, types of airspace, airspace volume where the operation will take place and which the airspace volume is kept as necessary risk buffers, including the operational requirements for specific geographic zones;
 - (c) the complexity of the operation, in particular which planning and execution, crew competencies, experience and composition, required technical means are planned to conduct the operation;
 - (d) the technical features of the UAS, including its performance in view of the conditions of the planned operation, its serial number and, where applicable, its registration number;
 - (e) the competence of the personnel for conducting the operation including their composition, role, responsibilities, training and recent experience.
3. The assessment shall identify the required target level of safety which shall in principle be equivalent to the target level of safety of manned aviation, in view of the specific characteristics of the operation, expressed as the number of mid-air collisions per flight hour for the air risk and as the number of fatal injuries on the ground per flight hour for the ground risk.
4. The identification of the risks shall include the determination of ::
 - (a) the unmitigated ground risk of the operation taking into account the type of operation and the conditions under which the operation takes place, including at least the following criteria:
 - i. VLOS or BVLOS;
 - ii. population density of the overflown areas;
 - iii. flying over an assembly of people;
 - iv. the dimension characteristics of the unmanned aircraft;
 - (b) the unmitigated air risk of the operation taking into account:

- i. the exact airspace volume where the operation will take place, extended by a volume of airspace necessary for contingency procedures;
 - ii. the class of the airspace;
 - iii. the impact on other air traffic and air traffic management (ATM) and in particular:
 - the altitude of the operation;
 - controlled versus uncontrolled airspace;
 - aerodrome versus non-aerodrome environment;
 - airspace over urban versus rural environment;
 - separation from other traffic.
5. The identification of the possible mitigation measures that provide a sufficient level of confidence that the operation can be safely conducted shall consider all or some of the following possibilities:
 - (a) containment measures for people on the ground;
 - (b) strategic operational limitations to the UAS operation, in particular:
 - i. restricting the geographical volumes where the operation takes place;
 - ii. restricting the duration or schedule of the time slot in which the operation takes place;
 - iii. restricting the behaviour of the unmanned aircraft to improve the predictability for other airspace users;
 - (c) strategic compliance with flight rules and respect for airspace structure and services;
 - (d) capability to cope with possible adverse operating conditions;
 - (e) organisation factors such as operational and maintenance procedures elaborated by the UAS operator;
 - (f) the level of competency and expertise of the remote crew;
 - (g) the risk of human error in the design of the UAS and in the application of the operational procedures;
 - (h) the design features and performance of the UAS in particular:
 - i. the availability of a detect and avoid function;
 - ii. the availability of systems limiting the energy at impact or the frangibility of the unmanned aircraft;
 - iii. the design of the drone to recognised standards and the fail-safe design.
6. The robustness of the proposed mitigating measures shall be assessed in order to determine whether their robustness is commensurate with the safety objectives and risks of the intended operation, particularly to make sure that every stage of the operation is safe.

Article 12
Authorizing operations in the 'specific' category

1. The competent authority shall evaluate the risk assessment and the robustness of the mitigating measures that the UAS operator proposes to keep the UAS operation safe in all phases of flight.
2. The competent authority shall grant an authorization when the evaluation concludes that:
 - (a) operational safety objectives take account of the risks of the operation;
 - (b) the combination of mitigation measures concerning the operational conditions to perform the operations, the competence of the personnel involved and the technical features of the UA, are adequate and sufficiently robust to keep the operation safe in view of the identified ground and air risks;
3. When the operation is not deemed sufficiently safe, the competent authority shall substantiate the refusal of its authorization.
4. The authorisation granted by the competent authority shall detail
 - (a) the scope of the authorization;
 - (b) the specific conditions that shall apply:
 - i. to the UAS operation and the operational limitations;
 - ii. to the required competence of the UAS operator and, where applicable, of the remote pilots;
 - iii. to the technical features of the UAS;
 - (c) the number, type of UAS operations or period of time for which the authorization is granted;
 - (d) the following information:
 - i. the registration number of the UAS operator and the serial number(s) of the UA(s) (and if the UAS is registered, the UAS registration number);
 - ii. a reference to the operational risk assessment developed by the UAS operator;
 - iii. the operational limitations and conditions of the operation;
 - iv. the mitigation measures that the UAS operator has to apply;
 - v. the location(s) where the operation is authorised to take place;
 - vi. all documents and records relevant for the type of operation and the type of events that should be reported in addition to those defined in Regulation (EU) 376/2014.
5. Upon receipt of the declaration referred to in Article 5(5), the competent authority shall:
 - (a) verify that it contains all elements set out in paragraph 2 of point SPEC.020.
 - (b) if this is the case, provide the UAS operator with a confirmation of receipt and completeness without undue delay so that the operator is entitled to start the operation.

Article 13

Authorizations for cross-border operations or operations outside the state of registration

1. Where UAS operators intend to conduct an operation that takes place partially or totally in the airspace of a Member State other than the Member State of registration, they shall comply with the local conditions established by the Member State of operation in accordance with Article 18 and revise the mitigating measures to take due account of the local conditions, where required.
2. When receiving an application for an operational authorisation for such operation, the competent authority of the Member State where the UAS operator is registered, shall consult and agree with the competent authority of the Member State of operation on the acceptability of the compliance with the operational conditions of the geographical zones and of the mitigation measures referred to in paragraph 1.
3. The two competent authorities shall agree in a reasonable period of time, depending on the complexity of the operation.

Article 14

Registration of UAS operators and certified UAS

1. Member States shall ensure that registration systems are established for UAS whose design is subject to certification and for UAS operators whose operation may present a risk to safety, security, privacy, and protection of personal data or the environment.
2. The registration systems for UAS operators shall provide the fields for introducing and exchanging the following information:
 - (a) the full name and the date of birth for natural persons and the name and their identification number for legal persons;
 - (b) the address of UAS operators;
 - (c) their email address and telephone number;
 - (d) an insurance policy number for UAS if required by Union or national law;
 - (e) the confirmation by legal persons of the following statement: ‘All personnel directly involved in the operations are competent to perform their tasks, and the UAS will be operated only by remote pilots with the appropriate level of competency’;
 - (f) authorisations and LUC held and declarations followed by a confirmation in accordance with Article 12(5)(b).
3. The registration systems for UAS whose design is subject to certification shall provide the fields for introducing and exchanging the following information:
 - (a) Manufacturer's name;
 - (b) Manufacturer's designation of UAS;
 - (c) UAS serial number;
 - (d) Full name, address, email address and telephone number of the natural or legal person under whose name and aircraft is registered.
4. Member States shall ensure that the registration systems are digital and interoperable and allow for mutual access and exchange of information through the repository referred to in Article 74 of Regulation (EU) 1139/2018.

5. UAS operators shall register themselves in accordance with Part A or Part B of the Annex when operating a unmanned aircraft:
 - (a) with a maximum take-off mass of more than 250 g or
 - (b) equipped with a sensors able to capture personal data and having a range higher than 120m.
6. UAS operators shall register in the Member State where they have their residence for natural persons or where they have their principal place of business legal persons. A UAS operator cannot be registered in more than one Member State at a time.

Member States shall issue a unique digital registration number for UAS operators and for the UAS that require registration, allowing their individual identification.

The registration number for UAS operators shall be established on the basis of accepted industry standards that support the interoperability of the registration systems;

The registration number for UAS whose design is subject to certification shall be established in line with ICAO Annex 7.
7. The UAS operators shall display their registration number on every unmanned aircraft meeting the conditions described in paragraph 5.

Article 15

Operational conditions for geographical zones

1. When defining geographical zones for safety, security, privacy or environmental reasons, Member States may:
 - (a) prohibit, or request prior authorisation for, certain or all UAS operations;
 - (b) subject UAS operations to specified environmental standards;
 - (c) allow access to certain UAS classes only;
 - (d) allow access only to UAS equipped with certain technical features, in particular remote identification systems or geo awareness systems.
2. On the basis of a risk assessment carried out by the competent authority, Member States may designate certain geographical zones in which UAS operations are exempt from one or more of the open category requirements.
3. Member States shall ensure that the information on the geographical zones is made publicly available in a digital format. The data on the geographical zones shall be provided in 3D geographic coordinates including time, longitude, latitude and altitude, in that order, with negative values for west, south, and below mean sea level. The longitude and latitude components (decimal degrees) shall be defined in accordance with the World Geodetic System of 1984 (WGS84). The vertical component shall be indicated in metres from the WGS84 EGM96 Geoid vertical datum.

Article 16

UAS operations in the framework of model aircraft clubs and associations

1. The competent authority may issue a model aircraft club or association with an operational authorisation in accordance with relevant national rules.

2. The operational authorisation shall specify the conditions under which the model aircraft club or association may continue their activities, and shall be limited to the territory of the Member State in which it is issued.

Article 17

Designation of the competent authority

1. Each Member State shall designate the competent authority responsible for the tasks referred to in Article 18.
2. Where a Member State designates several competent authorities it shall clearly define their respective areas of competence. They shall cooperate in order to fulfil their tasks in accordance with this Regulation.

Article 18

Tasks of the competent authority

1. The competent authority shall be responsible, in particular, for:
 - (a) enforcing this Regulation;
 - (b) issuing, suspending or revoking certificates of UAS operators and licenses of remote pilots;
 - (c) making available information on the local conditions applicable to the territory of the Member State;
 - (d) issuing, amending, suspending, limiting or revoking certificates of competency of remote pilots;
 - (e) issuing, amending, suspending, limiting or revoking authorisations, issuing, suspending or revoking LUCs and verifying completeness of declarations, which are required to carry out UAS operations in the ‘specific’ category of UAS operations;
 - (f) keeping documents, records and reports concerning UAS operations, remote pilots and UAS operators;
 - (g) making available information on geographical zones in a digital way;
 - (h) developing a risk-based oversight system for UAS operators that hold a declaration, authorisation or an LUC;
 - (i) establishing audit planning based on the risk profile, compliance level and the safety performance of the UAS operators;
 - (j) carrying out inspections with regard to UAS operators, inspecting UAS, and ensuring that UAS operators and remote pilots comply with this Regulation;
 - (k) implementing a system to detect and examine incidents of non-compliance by UAS operators operating under the specific category of UAS operations;
 - (l) providing UAS operators with information and guidance that promotes the safety of UAS operations.

Article 19
Safety information

1. The competent authorities of the Member States and market surveillance and control authorities referred to in Article 36 of Regulation (EU) .../... [DA], shall cooperate on safety matters and establish procedures for the efficient exchange of safety information.
2. Each UAS operator shall report to the competent authority on any safety-related occurrence and exchange information regarding its UAS in compliance with Regulation (EU) No 376/2014 of the European Parliament and of the Council⁸.
3. The European Aviation Safety Agency ('the Agency') and the competent authorities shall collect, analyse and publish safety information concerning UAS operations in their territory in accordance with Article 119 of Regulation (EU) 2018/1139 and its implementing rules.
4. Upon receiving any of the information referred to in paragraphs 1, 2 or 3, the Agency and the competent authority shall take the necessary measures to address any safety issues on the best available evidence and analysis, taking into account interdependencies between the different domains of aviation safety, and between aviation safety, cyber security and other technical domains of aviation regulation.
5. Where the competent authority or the Agency takes measures in accordance with paragraph 4, it shall immediately notify all relevant interested parties and organisations that need to comply with those measures in accordance with Regulation (EU) 2018/1139 and its implementing rules.

Article 20

Particular provisions concerning the use of certain UAS in the 'open' category

1. UAS types within the meaning of Decision 768/2008/EC⁹ which do not comply with Regulation (EU) .../... [DA] and which are not privately-built may continue to be operated under the following conditions, when they have been placed on the market before [...] [*three years after the date of entry into force of Regulation (EU) .../...*]:
 - (a) in subcategory A1 as defined in Part A of the Annex, provided that the unmanned aircraft has a maximum take-off mass of less than 250 g, including its payload;
 - (b) in subcategory A3 as defined in Part A of the Annex, provided that the unmanned aircraft has a maximum take-off mass between 250 g and 25 kg, including its payload.

⁸ Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.4.2014, p. 18).

⁹ Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products, and repealing Council Decision 93/465/EEC, OJ L 218 13/8/2008, p. 82

Article 21

Adaptation of authorisations, declarations and certificates

1. Authorisations granted to UAS operators, certificates of remote pilot competency and declarations made by UAS operators or equivalent documentation, issued on the basis of national law, shall remain valid until [OP: please insert a date two years after the date of entry into force of this Regulation].
2. By [OP: please insert a date two years after the date of entry into force of this Regulation] Member States shall adapt their existing certificates of remote pilot competency and their UAS operator authorisations or declarations, or equivalent documentation, including those issued during until that date, in accordance with this Regulation.
3. By [OP: please insert six months after the entry into force] at the latest, Member States that already defined geographic zones according to national regulation, shall convert the information related to those geographic zones in accordance with the format referred to in point 3 of Article 15 and keep the information up to date.

Article 22

Transitional provisions

1. Without prejudice to Article 20, for a transitional period of three years from the date of entry into force of this Regulation, the use of UAS in the open category which do not comply with the requirements of Parts 1 to 5 of the Annex to Regulation (EU) .../... [DA] is allowed subject to the following conditions:
 - (a) unmanned aircraft with a maximum take-off mass of less than 900 g may be operated within the operational requirements set out in points UAS.OPEN.020(1)(a) and UAS.OPEN.020(1)(b) of Part .. of the Annex by a remote pilot having competence level defined by the Member State concerned;
 - (b) unmanned aircraft with a maximum take-off mass of less than 2 kg may be operated by keeping a minimum distance of 50 m from people and the remote pilots have a safety certificate at least equivalent to the one set out in point UAS. OPEN.030 (2) of Part A of the Annex;
 - (c) unmanned aircraft with a maximum take-off mass of more than 2 kg and less than 25kg may be operated within the operational requirements set out in point UAS.OPEN.040(1) and (2) and the remote pilots shall have a certificate at least equivalent to the one set out in point UAS.OPEN.020(1)(c) of PartA of the Annex.

Article 23

Entry into force and application

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.
It shall apply from [3 months after the entry into force of this Regulation].
2. Article 5(5) shall apply as from the date on which Appendix 1 of the Annex is amended so as to contain the applicable standard scenarios. Member State may in accordance with Article 5(5) accept declarations by UAS operators based on national standard scenarios, if those scenarios meet the requirements of paragraph 1 point a) of point UAS.SPEC.020 until [OP: please insert 2 year after the date of entry into

force of this Regulation] or until this Regulation is amended to include the standard scenario in Appendix 1 of the Annex, whichever is earlier.

3. The registration requirements set out in Article 14 shall apply from [OP: please insert 1 year after the date of entry into force of this Regulation].

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

Done at Brussels,

For the Commission
The President
Jean-Claude JUNCKER

DRAFT