

Non-paper¹ from the Commission services on the draft implementing and delegated acts laying down detailed rules on the operation, design, production and maintenance of unmanned aircraft and the coverage of the essential requirements of Regulation (EU) 2018/1139

1. INTRODUCTION

Following the entry into force of the new Basic Regulation ('BR')², the Commission prepared two draft acts laying down detailed rules covering all unmanned aircraft, irrespective of their weight:

- (1) An implementing regulation ('IA') which will set out the specific rules and procedures for the operation of unmanned aircraft;
- (2) A delegated regulation ('DA') which will set out the detailed rules for the design of unmanned aircraft intended for use in the lowest risk category, called 'open', as well as specific rules for third-country operators of unmanned aircraft systems ('UAS').

This paper provides details as to how those acts respect the dividing line between the implementing act under Article 57 and the delegated act under Article 58 drawn by the new BR. It also shows the links between each of those acts with the essential requirements laid down in the new BR.

2. REQUIREMENTS IMPOSED BY THE NEW BASIC ACT

Articles 55 to 58 and in Annex IX of the new BR lay down specific rules on unmanned aircraft. If specified by the delegated and implementing acts, some essential requirements set out in Annexes II, IV and V also could apply to unmanned aircraft.

Article 57 of the new BR provides that the Commission is empowered to adopt implementing acts containing the rules and procedures notably for the operation of drones, for certifications, the privileges and responsibilities of the holders of certificates, the rules and procedures for the registration of drones and operators and for establishing harmonised national registration systems.

According to Article 58 of the new BR, the Commission shall adopt delegated acts that in principle would lay down the detailed rules with regard to the design, production and maintenance of drones (i.e. a so called 'airworthiness'), to issuing the related certificates and privileges and responsibilities of certificates' holders. In

¹ This is an informal non-paper from the Commission services. It may not in any circumstances be regarded as stating an official position of the Commission and is strictly intended to clarify certain points in response to a request from the EP.

² Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 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 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91, OJ L 212, 22.8.2018, p. 1,

this regard it must be underlined that Article 58(1)(a) does not require to lay down detailed rules with regard to **all conditions** for the design, production and maintenance of unmanned aircraft, but only those “*necessary to ensure compliance with the essential requirements referred to in Article 55*”. Those detailed rules “*may include*” the conditions under which unmanned aircraft are required to be equipped with necessary features and functionalities needed for their operations.

Finally, certain essential requirements established in the BR and its Annexes are sufficiently detailed, and it may not be necessary or appropriate to add detail in the IA or DA. They include for example such provisions as: Annex IX, point 2.2.(a) and Annex III point 8 on requirements imposed on organisations involved in unmanned aircraft and in design, production and maintenance.

3. APPROACH FOLLOWED BY THE COMMISSION IN ITS DRAFT IA AND DA

3.1. Implementing Act

In line with the empowerment given by the new BR, the draft IA is seeking to ensure the uniform implementation and compliance with the essential requirements laid down in Articles 55 of the new BR, as well as with its Annex IX and - where relevant - with Annexes II, IV and V.

While setting out specific conditions for operations of drones, the draft IA takes into account the nature and the level of risk of the operation, the operational characteristics of the unmanned aircraft and the characteristics of the area of operations to ensure maximum safety for people on the ground and for other airspace users. Since potentially an aircraft of 50g and an aircraft of the size of an Airbus A380 could classify as unmanned aircraft, the IA adopts a “risk based” approach when further implementing essential requirements laid down in the BR, in line with Article 4(2) of the new BR. Consequently, the IA identifies and lays down the conditions for operations in three categories: the ‘open’, ‘specific’ and ‘certified’ categories.

- J The ‘**open**’ category would cover operations that present the lowest risks. It would include drones up to 25 kg, ranging from toys to more sophisticated devices, operated mostly for leisure purposes, but also in limited cases for some commercial operations. The ‘open’ category would not require any prior authorisation from the competent authority. This approach is in line with Article 56(1) of the new BR.³
- J The “**specific**” category would cover operations that cannot take place in the ‘open’ category but may not necessarily warrant the application of the full

³ “Taking into account the objectives and the principles set out in Articles 1 and 4, and in particular the nature and risk of the activity concerned, the operational characteristics of the unmanned aircraft concerned and the characteristics of area of operation, **a certificate may be required** 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, in accordance with the delegated acts referred to in Article 58 and the implementing acts referred to in Article 57”.

certification and oversight mechanisms compulsory in the 'certified' category. Operations in the 'specific' category would require either an operational authorisation from the competent authority based on a risk assessment provided by the operator, possession by the operator of a Light UAS Certificate issued by the competent authority, or a declaration, on the operator's part, of compliance with a published standard scenario. This approach is in line with Article 56(5)⁴ of the new BR.

- J) The **'certified' category** would concern mostly the professional use of drones for which a prior authorization by the national competent authority would always be required. Under the draft IA any operation involving a drone with any dimension above 3 m intended to be conducted over open assemblies of people, or for the transport of people or for the carriage of dangerous goods, if they result in high risk for third parties in case of accident would fall in the 'certified' category. In addition, any drone operation would fall under the 'certified' category if, based on a risk assessment provided by an operator, the competent authority considers that the risk of the operation can be adequately mitigated only by the certification of the drone and of the drone operator and by the licensing of the remote pilot, where applicable. This approach is in line with Article 56(1)-(4) of the new BR. Drones of more than 150 kg were already within the scope of the EASA Basic Regulation and will continue to be subject to the rules applicable to manned aircraft.

3.2. Delegated Act

On the other hand, in line with Article 58 of the new BR, the draft DA is setting detailed rules for the design of unmanned aircraft. The draft DA covers only unmanned aircraft intended for the use in the lowest risk 'open' category. This is because, as explained above, according to the new BR, not all drones (and their operations) are subject to certification, as set out by Article 56(1). Furthermore, Article 56(6) states that: *“Where the objectives and the principles set out in Articles 1 and 4 can be achieved without the application of Chapters IV and V of this Regulation, the delegated acts referred to in point (c) of Article 58(1) might provide that those Chapters shall apply neither to the essential requirements referred to in Article 55 nor to the corresponding detailed rules established in accordance with Article 58. In such cases, those essential requirements and those detailed rules shall constitute 'Community harmonisation legislation' within the meaning of Regulation (EC) No 765/2008 of the European Parliament and of the Council and Decision No 768/2008/EC of the European Parliament and of the Council”*.

⁴ Article 56(5). “Taking into account the objectives and the principles set out in Articles 1 and 4, and in particular the nature and risk of the activity concerned, the operational characteristics of the unmanned aircraft concerned and the characteristics of area of operation, the delegated acts referred to in Article 58 and the implementing acts referred to in Article 57 may require in respect of 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 of the personnel, including remote pilots, and organisations involved in those activities, a declaration confirming compliance with those delegated and implementing acts”.

Consequently, unmanned aircraft exclusively used in the lower risk categories of operations are considered to be able to meet the objectives of Art. 1 and 4 of the new BR without the need for traditional certification and oversight mechanisms. The draft DA, once adopted, will constitute a so-called ‘Community harmonisation legislation’ of unmanned aircraft in the ‘open’ category. Those detailed rules will be supplemented by ‘Harmonised Standards’ developed by the European Standardisation Organisations. Those ‘Harmonised Standards’ will ensure compliance with essential requirements of drones to be operated in the ‘open category’.

The Commission has at this stage not proposed delegated acts addressing the design, production and maintenance of unmanned aircraft intended to be operated in the ‘certified’ category, as those are already subject to the existing Commission regulations on initial and continuing airworthiness (Commission Regulations (EU) No 748/2012, (EU) No 2015/640 and (EU) No 1321/2014). However, during the second Quarter of 2019, the Commission will launch a process of review of those regulations and will amend the rules on airworthiness and environmental certification to target them better to the requirements for operations with unmanned aircraft.

The Commission has not specifically proposed new delegated acts addressing the design, production and maintenance of unmanned aircraft intended to be operated in the ‘specific’ category either. Their specific technical characteristics and associated mitigation measures will be defined in the operational authorisation or in the Light UAS Certificate issued by the competent authority in line with Article 12 of IA, or in the standard scenarios defined in the appendix of the IA. Furthermore, since unmanned aircraft used in the ‘specific’ category can be the same as the one used in the ‘open’ category, the detailed provisions of the DA could apply also to some operations in the ‘specific’ category, or, depending on the outcome of the operational risk assessment, such unmanned aircraft would need to be certified as a drone operated in ‘certified’ category. In the latter case, such certification would have to comply with the above-mentioned airworthiness regulations.

4. COVERAGE OF ESSENTIAL REQUIREMENTS BY IA AND DA

The detailed provisions set out in the draft DA regarding the technical requirements applicable to drones, together with the operational restrictions set out in the draft IA are designed to maintain a high uniform level of safety and to meet the objectives of Article 1, as well as to implement the essential requirements lay down in Annex IX and III of the BR. In particular, the detailed rules set out in the draft DA and IA seek to:

- (1) ensure that drones operations are as safe as those in manned aviation;
- (2) ensure safety for people on the ground and other airspace users during the operations;
- (3) facilitate the free movement of goods and services by establishing a European market for unmanned aircraft systems and associated services, contributing to maintain Europe at the forefront of this developing industry;

- (4) contribute to a high, uniform level of environmental protection by setting noise limits on unmanned aircraft systems and promoting the electrification of aviation;
- (5) promote cost-efficiency by harmonising rules which are currently highly fragmented across Europe;
- (6) contribute to maintaining a high level of security by organising registration of the operators and requiring the direct transmission of UAS identification for law-enforcement purpose;
- (7) promote research and innovation by setting performance-based requirements and allowing the industry to keep developing innovative solutions.

In the following subsections this non-paper will describes how those essential requirements have been reflected and detailed in the IA and DA.

4.1. Implementing Act

Each identified category of operations ('open', 'specific' or 'certified') would be governed by a number of essential requirements concerning the rules and procedures for the operations and the airworthiness of UAS, as well as, the competency of the remote pilots, in line with Article 57 of the BR.

-) As regards **operations**, the draft IA provides rules and procedures for the operation of the UAS in the three categories.
-) The draft IA is also allowing Member States to define geographical zones for safety, security, privacy or environmental reasons. This is in line with Annex IX, point 1.3 with regard to the operation in particular geographical zones. Some areas, such as sites of police and emergency service operations, hospitals, gatherings of people, installations and facilities like penal institutions or industrial plants, top-level and higher-level government authorities, nature conservation areas or certain items of transport infrastructure, can be particularly sensitive to some or all types of UAS operations. Therefore, Member States should be allowed to define geographical zones where the use of all or certain categories of UAS operations is prohibited or restricted for security, privacy, environmental or nature protection reasons.
-) For operations requiring a prior authorisation, drone operators would be requested to conduct an operational risk assessment. Such requirement is in line with Annex IX, point 2.3 of the BR *whereby the operator of an unmanned aircraft is responsible for the operation and must take any appropriate actions to ensure the safety of the operation*. In line with recital 34 of the BR, the draft IA takes into account that model aircraft have so far had a good safety record, especially those operated by members of model aircraft associations or clubs, which have developed specific codes of conduct for such activities. Therefore, drone operations conducted in the framework of such model aircraft clubs and associations would be allowed to continue without an authorisation for a period of three years. The authorisation required after that period could be issued in accordance with

relevant national rules, established procedures, organisational structure and management system of the model aircraft club or association. Such authorisations will be subject to EASA monitoring activities.

- J) As regards the **competency of the remote pilots**, the draft IA sets out the detailed rules and procedures for ensuring the adequate level of competency of remote pilots, including minimum age requirements. This is in line with Annex IX point 1.1 and 2.3 of the BR which states that *the operator and the remote pilot must be able to ensure the safety of operation and safe separation of the unmanned aircraft from people on the ground and from other airspace users and any person involved in the operation of an unmanned aircraft, including the remote pilot, shall possess the required knowledge and skills necessary to ensure the safety of the operation and proportionate to the risk associated with the type of operation*. The competency requirements for remote pilots operating UAS in the ‘specific’ category are set out in Part A of the Annex of the draft IA. The draft IA includes no remote pilot certification requirements as those requirements will be set out in a future amendment to Regulation (EU) 1178/2011. EASA has already announced its intention to publish a Notice of Proposed Amendment to Regulation (EU) 1178/2011 in the course of this year. This future amendment will also include detailed medical fitness requirements (as part of the pilot certification requirements), an issue also not covered by the draft IA.
- J) In line with Article 57(c) of the BR, the Commission proposes that a ‘light UAS operator certificate’ (LUC) confers the privilege upon its holder to operate a UAS without the otherwise necessary declaration for certain types of operations, such as declarations required in case of standard scenarios.

In line with Article 56(7) and Annex IX, point 4 of the BR, the draft IA provides detailed requirements regarding **the registration of drones and drones operators** in order to address in particular, possible risks to privacy, protection of personal data, security or the environment. Consequently, operators would be required to register themselves when operating a drone within the ‘open’ category with a maximum take-off mass of more 250 g or more; or when equipped with a sensor able to capture personal data (if it can be operated at a range in excess of 120 m from the remote pilot), as well as any mass within the specific category. Any owner of a drone whose design is subject to certification will have to register the drone and obtain a registration number established in line with ICAO Annex 7.

The draft IA also contains detailed provisions concerning Annex IX, 4.1 or 4.2 whereby drones concerned shall be **individually marked and identified**, in accordance with the implementing acts referred to in Article 57 of the new BR, the Commission is proposing in the draft IA that drone operators should display their registration number on every drone.

According to the draft IA, each UAS operator **should report** to the competent authority on any **safety-related occurrence** and exchange information regarding the UAS concerned in compliance with Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation. Other provisions regarding

incident and accident investigations, which are set out in Regulation (EU) 996/2010 as amended by Article 135 of the BR, are directly applicable.

Finally, in line with Article 57(b) of the BR, the draft IA sets out a number of **tasks for the competent authorities** such as issuing, maintaining, amending, limiting, suspending, or revoking the certificates, or for processing declarations, or for issuing authorisations⁵.

4.2. Delegated Act

The detailed provisions set out in the DA are designed to maintain a high uniform level of safety and meet the objectives of Article 1 of the new BR, as well as the essential requirements of Annex IX (for unmanned aircraft) and Annex III (for environmental compatibility), by addressing the design, production and maintenance of unmanned aircraft intended to be operated in the 'open' category.

Parts 1 - 5 of the Annex to the DA contain detailed provisions for **the airworthiness** including design, production and maintenance of unmanned aircraft in classes 'C0' to 'C4' intended to be operated in the 'open' category. Those parts aim at meeting the essential requirements for the design and airworthiness of unmanned aircraft as set out in point 1.2 of section 1 and section 2.1 of Annex IX of the new BR.

Parts 2 - 4 of the Annex to the DA contain detailed provisions related to **the remote identification and geo-awareness functions** of unmanned aircraft in classes 'C1' to 'C3' and Part 6 of the Annex to the DA contain detailed provisions for the design of a remote identification add-on. Those provisions contain detail regarding a number of essential requirements. Those essential requirements are related to the mitigation of safety, privacy, security and environmental risks set out in point 1.3 of section 1 and point 2.1.6 of section 2.1. of Annex IX to the new BR, or to the introduction of limitations in line with airspace rules set out in point 1.4 of Annex IX to the new BR. Parts 1 and 5 of the Annex to the DA do not contain provisions related to the remote identification and geo-awareness. In application of the registration requirements set out in Art. 14(5) of the draft IA, operators of unmanned aircraft capable of capturing personal data need to register themselves. This registration obligation and proportionality considerations led to the exemption of the 'C0' class unmanned aircraft from the remote identification and geo-awareness requirements. Furthermore, the technical characteristics of unmanned aircraft in class 'C4' correspond to aeromodels devoid of automatic control modes, and exclusively used away from open assemblies of people when operated in the 'open' category. In application of Art. 15 of the draft IA, Member States may decide to require, in some areas, that 'C4' class unmanned aircraft is equipped with a remote identification function. This requirement could be met by complying with the requirements for a remote identification system add-on defined in Part 6 of the Annex to the draft DA.

Art. 6(7) and 8(4) of the draft DA and Parts 1-6 of the Annex to the draft DA contain detailed provisions on **manuals and information notices**, linked to the essential requirements related to the provision of information set out in point 1.4 of Annex IX and in point 7 of Annex III of the new BR.

⁵ Article 18 in the draft IA, complemented by UAS.SPEC.040 and UAS.LUC.050 from its Annex.

Parts 2 - 4 and parts 13 - 15 of the Annex to the draft DA contain detailed provisions, including test protocols, for **noise** produced by unmanned aircraft in classes 'C1' to 'C3', in order to meet the essential requirements related to noise as set out in point 1 of Annex III of the new BR. Parts 1 and 5 of the Annex to the draft DA do not contain provisions related to noise. Unmanned aircraft in the 'C0' class, with maximum take-off mass below 250g, are primarily toys used for leisure activities. They are typically very inexpensive and have limited endurance. At the other end of the scale, the unmanned aircraft in the class 'C4' corresponds to aeromodels exclusively used away from open assemblies of people when operated in the 'open' category. It was therefore considered disproportionate to set maximum noise levels for those classes of UAs, bearing in mind the potential costs associated to noise testing and the likely limited impact of their operations.

Parts 1 - 4 of the Annex to the draft DA require unmanned aircraft in classes 'C0' to 'C3' to be **powered by electricity** in order to meet the essential requirements related to **emissions** set out in point 2 of Annex III of the new BR. Part 5 of the Annex to the draft DA does not contain provisions on emissions for unmanned aircraft in class 'C4', since they correspond to aeromodels operated in the 'open' category. Powered models use a variety of propulsion systems including electrical systems and small internal combustion engines and it was deemed disproportionate to restrict the access to the 'open' category to electrified models, considering the likely limited impact of their operations.

Finally, Articles 6 - 39 of the draft DA and Parts 7 - 12 of the Annex to the draft DA contain detailed provisions in line with the Community harmonisation legislation for products set out in Regulation (EC) No 765/2008 and in Decision No 768/2008/EC on the marketing of products. This is in line with Article 56(6) of the new BR as explained above.

A number of essential requirements from the EASA Basic Regulation related to unmanned aircraft are not further detailed in the draft DA as they are themselves sufficiently detailed, so that further specifications are neither necessary nor appropriate. This includes in particular point 2.2 of Annex IX and point 8 of Annex III to the new BR.

Finally, some essential requirements from the new BR related to the design, manufacture and maintenance of unmanned aircraft, intended to be operated in the 'open' category, are covered by other pieces of Union legislation. They include: Directive 2006/42/EC on machinery (for aspects not directly linked to the flight safety, e.g. the spraying function of an unmanned aircraft used for pesticide applications), Directive 2009/48/EC on the safety of toys (for 'C0' class unmanned aircraft considered toys in the meaning of the directive), Directive 2014/30/EU on electromagnetic compatibility and Directive 2014/53/EU on radio equipment (for what concerns essential requirements related to the electromagnetic compatibility and set out in point 2.5 of Annex IX to the new BR).

5. CONCLUSION

In conclusion, the proposed rules comply fully with the essential requirements set out in the new BR and the required delineation between IA and DA.