



Drone Alliance Europe Comments on 5 October 2018 Revised Draft Implementing and Delegated Regulations

The Drone Alliance Europe (“DAE” or the “Alliance”) appreciates this opportunity to provide comments on the third draft of the Delegated Regulation (also called the Delegated Act) and Implementing Regulation (also called the Implementing Rule). While we recognize the desire to publish final rules by the end of this year, and share EASA’s interest in expediting a regulatory framework for pan-European UAS operations, we suggest there remain a few matters requiring further consideration and revision.

Delegated Regulation

- **Member State authority**

The Alliance reiterates the concern it previously raised with EASA regarding Article 38(1), when read in conjunction with whereas clause (10). This clause states:

Member States should take the necessary steps to ensure that UAS are made available on the market and put in service only where they do not compromise the health and safety of persons, domestic animals or property, when normally used.

Article 38(1) provides:

Where, having carried out an evaluation under Article 36(1), a Member State finds that *although the product is in compliance with this Regulation*, it presents a risk to the health or safety of persons or to other aspects of public interest protection covered by this Regulation, it shall require the relevant economic operator to take all appropriate measures to ensure that the product concerned, when placed on the market, no longer presents that risk, to withdraw the product from the market or to recall it within a reasonable period, commensurate with the nature of the risk, as it may prescribe.

Emphasis added. This Article directs Member States to require UAS operators to take “all appropriate measures” to eliminate a risk presented by the UAS (“product”) identified by the Member State. The Alliance is concerned that even though a UAS is in compliance with the Delegated Regulation, a Member State may nonetheless substitute its own notion of safety and direct additional measures to be taken with the threat of a recall if the measures are not deemed sufficient. Directing Member States to make safety determinations is also reflected in Article 10.

Because this Member State authority is contained in the Delegated Regulation, commercial UAS manufacturers and operators face the potential of varying design requirements that are imposed on a UAS product – after its manufacture – that in the view of the Member State presents a “risk.” This would be equivalent to requiring an automobile manufacturer to design retrofit variants of a car model based on 28 different Member State emissions requirements.

These provisions invite each Member State to impose additional requirements beyond EASA performance and/or design requirements. These provisions run counter to a single, uniform regulatory framework in the EU. At a minimum, a Member State finding of risk and methodology of determining the level of risk should be coordinated with EASA, and a Member State should not take action to remove or recall the UA from the market without having consulted with the UA manufacturer and obtaining EASA’s concurrence.

- **Noise**

The most recent draft Delegated Regulation includes significant revisions to the noise provisions, including new Parts 13, 14, and 15. The new provisions rely heavily on ISO 3744:2010, without identifying and restating the relevant portions of the noise measurement procedures in that document.

Parts 13 and 14 are not clear about the relationship of sound pressure level to sound power level. Part 13 states that sound pressure level is used for calculating the sound power level, but does not explain what this calculation is.

Regarding Part 13, we are concerned that the requirement to conduct noise measurements of a UA that is firmly attached to the ground (paragraph 2) but with UA motors “working at the speed corresponding to the motor speed when the UA is hovering under MTOM” (paragraph 3) will not provide a realistic measurement. Noise should be measured while the UA is in flight, at various altitudes, as this will provide more realistic settings to determine the impact on persons present or in the vicinity of a UA operation. As we previously stated, ISO 3744:2010 was developed to address noise from stationary machines. That document did not contemplate noise from small drones, much less noise from small drones under operational conditions with full power or accelerating when changing its position. To account for the difference in operating characteristics, the Alliance believes that noise should be measured at stationary hover for multi-rotor drones and at stationary horizontal flight at cruise speed for fixed wing drones.

Noise measurements could be taken in a chamber to promote consistency in measurements, although we recognize that such measurements may be more costly.

We also note that the noise provisions are intended to cover UA classes 1, 2, and 3, but Part 15 does not provide maximum sound power levels for UA class 3.

The maximum sound power levels in Part 15 for UA class 2 are unclear. The addition of “+18,5 lg $m/900$ ” is not explained. Each element in this equation, lg , m , and $m/900$ should be explained, and examples given for a representative sample of m .

As we expressed in previous comments, there is no explanation of the basis used to choose these levels. It is not clear how these maximum power levels compare with other noise-emitting products used on the ground or what consideration has been given to the fact that UAs will be operated at various altitudes and only near the ground during takeoff and landing. There is no indication that EASA is relying on any noise sensitivity study that compares the noise emanating from a UA with other noises and gauges human response to the various noises. Further, these limits are lower than the limits Germany has imposed on UA under 25 kg – a category that include UAs in classes 1, 2, and 3 – as we noted in our previous comments.

Finally, Part 15 provides that the maximum power levels will be reduced two years after the regulations enter into force and then again two years later. While UA technology is constantly evolving, we are not aware of any study that empirically predicts noise emissions can and will be reduced in the coming years, or what the financial burden might be in doing so. Noise limits for manned aircraft were changed after many years of operations and when the technology to achieve noise reductions was available. The Delegated Regulation does not address the question of whether these reduced maximum sound power levels will apply only to newly designed UAs or whether they will apply to UAs already in the market or sold to end users. The Alliance believes that it is premature to require phased reductions in maximum sound power levels. If EASA nonetheless decides to retain phased reductions, these maximum sound power levels should apply only to UAs manufactured after the levels are effective.

- **Remote identification system**

In the Annex, we note two remote identification requirements common to UAS classes C1, C2, and C3. UAs in each of these classes are required to have “a unique physical serial number compliant with standard ANSI/CTA-2063 *Small Unmanned Aerial Systems Serial Numbers* affixed to the UA and its packaging or its user’s manual in a legible manner.” With respect to a remote identification system, UAs in each of these three classes must include both—

- The UAS operator registration number
- The unique physical security number of the UA compliant with ANSI/CTA-2063

We believe that the operator registration number should suffice when it exists. When it does not exist, using the physical security number should be the other means to identify the UA. Requiring the unique physical security number may allow for public tracking of flights and flight history in a way that affect the UA operator’s privacy

There is also the common requirement for UAS classes C1, C2, and C3, that the data must be “transmitted on the 2.4 or 5 GHz frequency band, using an open and documented transmission protocol,” so that it “can be received directly by mobile devices within the broadcasting range.” We believe all the necessary data may also be received directly by mobile devices tied to a network with lower equipage requirements, faster adoption and higher compliance.

Draft Implementing Regulation

- **Definitions**

The definition of “unmanned aircraft system” is not identical to the definition in the Delegated Regulation, which includes “software or application provided with it.”

- **Member State authority**

The Alliance strongly supports the revision of whereas clause (2) to state that “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.” We remain concerned, however, with other whereas clauses that recognize Member State authority over privacy and environmental matters:

(19) UAS operators and remote pilots should ensure that they are adequately informed about applicable Union and national rules related to the intended operations, in 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 sound power level of noise for unmanned aircraft operations 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 minimizes nuisances to people and animals. [Emphasis added.]*

(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.

These clauses may be understood as simply a reminder that UAS operations must also comply with *existing* European Union and national law. However, these clauses may be read to invite Member States to impose *additional* – and varying and arbitrary –

requirements on UAS operations, which raises serious concerns that Member States may frustrate or limit the standardization and harmonization of drone rules throughout the EU.

- In particular, whereas clause (19) refers to national safety rules, The Alliance believes EASA should set a single set of safety rules for the EU.
- Whereas clause (20) has been revised to note the Delegated Regulation's maximum sound power levels (see language in italics above), it also suggests that Member States may impose additional noise limitations. This tension should be clarified.
- Whereas clauses (19) and (23) reference "environmental protection": Apart from noise, it is unclear what this term is intended to cover. This term should be explained.

In Article 18, Task of the competent authority, the previous draft included the responsibility of "making available information on *airspace restrictions*[:]" the revised draft includes the responsibility of "making available information on the *local conditions* applicable in the territory of the Member State." Emphasis added. It is not clear what is intended by the term "local conditions."

Further, Article 15 gives authority to Member States to *define* both permissive and restrictive geographic zones. Member States are given authority, when establishing a geographic zone, to, inter alia, "prohibit, or request prior authorization for, certain or all UAS operations" and "allow access to certain UAS classes only[:]" The Alliance urges EASA to include in the Implementing Regulation protections against arbitrary or unreasonable time, place, or manner restrictions by Member States or Member State political subdivisions. The absence of any limit or constraint on Member State authority to impose restrictions on UAS operations poses a grave risk that the myriad beneficial uses of drones will be denied to the public in certain Member States and political subdivisions. Such a restrictive and varying regulatory climate would significantly deter investments in operations that would take place in and among multiple Member States.

On a more fundamental point, we believe that development and implementation of a U-Space system will better facilitate awareness in UA operators of time, place, and manner restrictions in geographic zones than individual Member State publication and dissemination of such restrictions.

- **Joule limits for specific category operations under a standard scenario**

Limits for the UA's kinetic energy appears for the first time in the third draft of the Implementing Regulation. In the absence of any explanation from EASA, we assume these limits in UAS.SPEC.20 are deemed warranted because the operator will be required only to make a declaration to the competent authority and not be required to

obtain an operational authorization. UAS.SPEC.20 also is limited to UA operations under a standard scenario. That said, we request that EASA define the terms “controlled area” and “populated environment” in Article 2. A “controlled area” should mean that persons in such an area are aware of the risk, and mitigations have been taken to ameliorate such risk. If so, the 1 meter wingspan limit for BVLOS operations within a controlled area should be reconsidered.

The basis for the different joule limits in UAS.SPEC.20 is also not explained. We would expect the joule limit for VLOS operations in a populated environment to be more conservative than in a controlled area within such an environment, but the former is subject to limit of 700 joules while the latter is subject to a limit of only 34 joules. We suggest that such a low limit is not warranted for operations within a controlled area and will mean very few VLOS operations will be conducted under a standard scenario, regardless of the very low risk the UA operation poses.

- **Privacy and the environment in open and specific categories**

The latest draft includes a revised requirement in UAS.OPEN.070(2)(b).

During the flight, the remote pilot shall . . . discontinue the flight when continuing the flight may pose a hazard to other aircraft, people, animals, environment or property.

A similar requirement applies to the specific category, UAS.SPEC.070(3)(b).

During the flight, the remote pilot shall . . . discontinue a flight when continuing it may pose a hazard to other aircraft, people, animals, environment or property.

These provisions replace draft language that would have required the remote pilot only to respect privacy rights and the environment. The Alliance previously expressed concern that requiring “respect” provides little guidance to remote pilots while at the same time creating public expectations and exposing such pilots to enforcement actions. The revised language, which now directs a remote pilot to “discontinue the flight,” raises a different concern. A remote pilot who can eliminate or adequately minimize the actual or potential hazard by, for example, changing a route or hovering in place, should be allowed to continue the flight.

Accordingly, we recommend that this requirement be revised to read:

During the flight, the remote pilot shall . . . take all necessary actions as necessary to avoid posing hazard to other aircraft, people, animals, environment or property, including discontinuing the flight, altering the flight profile, returning to base, or going to an alternate location.

- **Design requirements in Implementing Regulation**

A new section (3) added to UAS.SPEC.050 (UAS operator responsibilities) appears to impose UA design requirements more appropriately included in the Delegated Regulation.

The UAS operator shall . . . Use UAS which, a[t] a minimum, are designed in such a manner that a probable failure will not lead the UAS to fly outside the operation volume or to cause a fatality. In addition, Man Machine interfaces shall be such to minimise the risk of pilot error and shall not cause unreasonable fatigue.

This provision raises several questions. The terms “operation volume,” “Man Machine interfaces” and “probably failure” are not defined. There does not appear to be standard for what constitutes “unreasonable fatigue” or any explanation of when fatigue becomes “unreasonable.” While requiring such interfaces “to minimise the risk of pilot error” appears appropriate as an objective, it is uncertain how EASA views compliance with this objective.

- **Application of 120 meter altitude limit**

Annex Part A, UAS.OPEN.010, imposes a 120 meter limit, which may be increased up to 50 meters above the height of a fixed obstacle taller than 70 meters, but only “at the request of the entity responsible for the obstacle.” The Alliance believes this new limitation is not warranted for safety or other reasons. It is also not practical: who is the responsible entity for multi-part business or dwelling? If the operation above a tall structure creates a safety risk, such as when it is controlled airspace near manned aircraft operations, the primary responsibility rests with the remote pilot to avoid such risk. Where such an operation should be limited because of the proximity of the fixed obstacle to other obstacles or other aircraft operations, the Member State may impose such airspace restrictions as may be necessary.