



Drone Alliance Europe comments on EASA Opinion No 01/2020 and Draft Implementing Regulation

The Drone Alliance Europe (DAE) is pleased to express its strong support for EASA Opinion No 01/2020 and the draft Implementing Regulation. In particular, DAE welcomes the commitment of the Commission and EASA to a competitive and federated U-space services market, and supports the selection of four mandatory services for U-space service providers (USSPs). DAE supports harmonisation of U-space requirements throughout the EU, and is therefore encouraged by the statement that “implementation should be sufficiently harmonised across the EU[,]” which we hope will lead to the consistent application of rules and guidelines at the Member State and local levels, as well as across Member States. A lack of harmonisation would undermine the creation of a European drone market as well as its scalability. DAE is also pleased that EASA will serve as the competent authority to review and approve USSPs that intend to operate in more than one Member State. DAE expects that the draft Implementing Regulation, subject to the recommendations in these comments, will help support a safe and thriving UAS industry throughout Europe. It is DAE’s view that U-space will not be implemented all at once because different aspects of it will have different degrees of maturity. It should be implemented in all of its aspects gradually, wherever possible according to safety and other requirements, as technologies, procedures and standards are ready for it.

DAE has some suggestions and questions with respect to several additional matters.

Remote identification

DAE asks for clarification of the statement on remote identification (remote ID) on page 16 of the Opinion, which addresses the mandatory network identification service. DAE supports the statement that no additional equipment or capabilities are required for operations in U-space airspace beyond what is contained in the Delegated Regulation (Regulation (EU) 2019/945).

In addition, it is now specified that both broadcast and network information shall be received. This is consistent with the upcoming amendment to Regulation (EU) 2019/945 and supports the redundancy under certain use cases, although limited to certain cases of U-space airspace implementation.

DAE seeks further explanation of the “certain use cases” where both broadcast and network “shall be received.” DAE asks who is to receive the broadcast and network

information. In particular, DAE seeks clarification that this requirement is on the USSP, rather than on the UAS operator. USSPs should not be required to receive broadcast since the USSP functionally exists as a network function. DAE also requests that any amendment to the Delegated Regulation should include industry consultation.

Role and responsibility of Common Information Service (CIS)

As DAE explained in its [U-space Whitepaper Version 2.0](#), U-space should consist of a connected network and common information exchange protocols, with interoperability facilitated by the distributed network of USSPs, rather than a centralized entity of authority. It is unclear whether the CIS is intended to facilitate interoperability. That model introduces the risk of single point failures, which could effectively shut down an airspace block if the CIS goes offline – if the CIS is expected to play a real time role in flights. It also introduces the potential for airspace monopolies given the critical role each CIS would play and the dependence of USSPs and operators on CIS-provided information. Federated systems can facilitate interoperability between USSPs without requiring a single CIS.

Regardless of whether there is one or more CIS in a volume of U-space airspace, DAE believes that the final Implementing Regulation should clearly articulate the extent of information and responsibility offered through the CIS. Additionally, the CIS should abide by strict anticompetitive rules set out in the regulation. The regulation should also require a CIS to adhere to international standards to provide certainty for USSPs to continue to operate and to mitigate contingencies when a CIS is unavailable.

According to the Opinion, at page 6, the CIS “will enable the exchange of essential information between the U-space service providers (USSPs), the UAS operators, and the air navigation service providers (ANSPs) and all other participants in the U-space airspace.” The objective is to ensure that the information comes from trusted sources and that it is of sufficient quality, integrity, and accuracy, as well as security. Opinion, at 12. This is achievable by setting performance-based rules for USSP to USSP communication. While the CIS can be a gateway for certain kinds of authoritative data, USSPs can facilitate interoperability for other data, such as UAS flight position and intent.

It is essential that the CIS function is properly defined. The CIS should not facilitate information exchange between or among USSPs. That would undermine the safety, security, and cost benefits of a decentralized architecture. Information exchange between and among USSPs can be facilitated by USSPs themselves, in accordance with performance-based rules. This architecture has been demonstrated in practice in other States. From the Opinion, DAE understands that the CIS will communicate aeronautical information relevant to the U-space airspace, so in this respect it is accurately described more as a function than a service. The CIS is not expected to provide this data in any way; that is the role of the USSPs. However, Article 5(5) states that the CIS should provide a “single point of access for exchange of information and coordination procedure[.]” DAE recommends clarifying that the functions of the CIS do not include the exchange of information among USSPs.

In Article 5 of the draft Implementing Regulation, the CIS is required to make the following information available by using interoperable open communication protocols. DAE urges the Commission to ensure that there is a single interoperability protocol across Member States and that it is consistent with international standards development bodies. Allowing multiple sets of interoperability requirements will not serve either safety or efficiency. Moreover, if the CIS were rendered inoperable, that would also hinder the exchange of information, even with open communication protocols.

DAE also requests confirmation that all qualified and certified USSPs will have unrestricted access to the following information maintained by the CIS:

- (a) Horizontal and vertical limits of U-space airspace
- (b) UAS capabilities and performance requirements set by competent authorities
- (c) List of certified USSPs
- (d) Operational conditions and airspace constraints
- (e) Any adjacent U-space airspace(s)
- (f) Connectivity methods, constraints and cybersecurity protection measures
- (g) Terms and conditions for UAS flight authorisation, include deviation thresholds
- (h) Requirements re: public key infrastructure, identity management, and authentication
- (i) List of all authorities that can be contacted with regard to the common information

Also:

Member State geographical zones

This information requires machine-readable data to achieve a safe consistent outcome among all CISs and USSPs. EUROCAE has recently completed a first iteration of a standardisation initiative of UAS geographic zones (which is the same as U-space airspace). ASTM has defined how USSPs could communicate between each other, next to how ASTM also defined some of the data models (e.g., flight intent).

DAE supports the statements in Article 5 that the CIS may not be related or connected to a USSP and shall not provide any U-space services.

Flight authorisation

Article 12 outlines the functions of the mandatory flight authorisation service. This Article makes clear that USSPs must authorize each flight.

DAE disagrees with the draft Implementing Regulation requirement that UAS operators must request flight authorisation 30 minutes before each flight. This proposed requirement would severely limit as well as preclude many current types of UAS operations. Further, the requirement that the flight authorisation be provided “in a timely manner” does not explain what constitutes “timely.”

Further, flight authorisations should not be required in uncontrolled airspace. Operators are responsible for safe and lawful operations in uncontrolled airspace, and USSPs are not responsible for “authorizing” those operations.

DAE offers several recommendations for the Flight Authorisation Request Form.

(1) Aircraft identification: the form should inquire as to whether there are multiple drones to operate in formation

(4) Category of operation: the form should inquire as to whether the operation is pursuant to a standard scenario or an operational authorization under a SORA

(5) Flight path: in a particular open or specific category operation, it is conceivable that a flight path does not exist as the drone operator reacts on what is encountered during a flight, including wind and weather changes. DAE suggests using an operational volume (with markers to designate one or multiple landing/takeoff locations) rather than a flight path.

(12) Contact URL: DAE suggests also a phone number in case there is not connectivity

(14) Applicable emergency for C2 loss: DAE requests clarification of what information is required.

U-space operations in controlled airspace

DAE supports the statements in Article 7 that manned aircraft should provide situational information to the USSPs when operating in either uncontrolled or controlled airspace that is designated U-space airspace, and in Article 12 that when U-space airspace is within controlled airspace, the relevant USSPs and ANSP shall establish a procedure to coordinate the flight authorisation requests. However, there are statements in the Opinion that appear to be in tension with the draft Implementing Regulation. The Opinion at page 16 states that the flight authorisation service does not apply to manned aircraft. On page 11, the Opinion states, “Within controlled airspace, U-space airspace...is dynamically managed by the ANSP” and that “manned and unmanned aircraft will not mix with each other as they are strategically segregated and ANS and U-space services are not provided at the same time in the same volume of airspace.” Statements more consistent with Article 12 are included in the following paragraph on page 11.

DAE requests clarification of the roles of the ANSP and USSPs in U-space airspace, whether controlled or uncontrolled, and whether ANSPs and USSPs may act in the same airspace and if so, under what protocols.

Article 4 (3) states that where the U-space airspace is designated within controlled airspace, ANSPs should be responsible for the provision of services to manned aircraft, “and for the dynamic reconfiguration of the airspace within the designated U-space

airspace to ensure that manned and unmanned aircraft remain segregated.” DAE asks what is meant by dynamic airspace reconfiguration.

For example, when a drone is flying in U-space airspace up to 450 feet AGL (using GPS as an altitude reference), and a helicopter flying VFR is allowed to fly down to 500 feet AGL barometric. While this may appear to provide separation in reality there is no physical separation. This would pose a safety risk, as the drone might even fly above the helicopter and separation is not guaranteed. DAE asks why a USSP cannot act in the same airspace as an ANSP. This would be a much safer solution.

Traffic Information Service – Article 13

Even though it is the responsibility of the UAS to yield the right of way to a manned aircraft, information flow to the manned aircraft pilot should also be considered. The manned aircraft pilot should be able to opt in to an increased level of situational awareness of drone flights, particularly near airports.

Article 13(2) requires this service to provide real-time 3D position of the known air traffic, which may include manned and UAS operators. DAE requests confirmation that the position of the “air traffic” is the position of the aircraft and not the operator. The information required in Article 13(3) should include whether the air traffic is manned or unmanned, and whether the unmanned aircraft is fixed-wing or multi-rotor.