

EASA/EC workshop on the U-space regulatory framework
Discussion with Member States and industry
Cologne - 14 – 15 May 2019

The European Commission wants to develop the drone services market and is therefore creating an enabling regulatory framework. The Commission will publish the first two drone regulations by the end of this month. These regulate drones (what classes of drones – what quality requirements, etc.?) and drone operations (what are the conditions to fly a drone – what operational envelope, what pilot competence and what class of drone?).

Yet, in order to make longer distance drone operations possible, drones need to be identified and need tracking. The U-space is the digital system that would keep such operations safe, secure and green.

That is why the “Amsterdam Declaration” called for “Developing, in close cooperation with Member States, an institutional framework for a competitive U-space services market and how drones need to be operated in the European airspace;”.

Meanwhile the Commission and EASA have set-up a small working group to develop U-space rules. This group composed of a limited number of Member States representatives has been meeting five times. The discussions have identified a limited number of key issues that would need to be addressed.

The Commission and EASA now want to discuss these basic questions with a wider audience of Member States and industry participants on these basic questions. You will find these questions in this document together with the elements of an answer that the working group tended to converge upon. The elements are not meant to constitute the most complete or perfect answer – they are meant to drive the drafting of the U-space regulation.

Please note that this document is not an official position of the Commission or of EASA.

This consultation should provide the basis to continue the work of the working group with the view to producing a first draft regulation in the coming months.

1. What is the U-space precisely and what would be the objective of the Regulation?

- *U-space is the European “brand” of UTM. The “U” of U-space has deliberately been left open.*
- *The U-space could be defined as a digital system delivering a set of automated functions, services and procedures to ensure safe, secure, sustainable and efficient aircraft operations in a specific volume of airspace. So, the U-space is the combination of three elements: a digital system, provision of services and procedures (which are linked to the type of operation and may evolve over time) and airspace (to be designated).*
- *The objective of the U-space initiative is to make a further step in opening the drone services market and enable more complex and longer distance operations – so-called beyond visual line of sight operations. Many commercial operations are expected to fall under the specific category, where the Specific Operations Risk Assessment would require a robust mitigation action for the air risk.*
- *We are facing a chicken and egg problem. Investors see the opportunities of drone technologies and many projects are working on concrete solutions but they do not know*



whether their solutions would fit in the future regulatory framework. The initiative would give the direction of the rules without imposing a particular technological solution and would set a concrete timetable.

Your views and opinions are welcome and appreciated

2. Why do we need a separate U-space regulation and why can we not use existing rules?

- *The U-space is a data driven digital system, devised to providing fully automated services to feed highly automated aircraft operations. A separate regulatory initiative on the U-space is the best way to mark the shift of paradigm between the human centric ATM and the data-centred U-space.*
- *The U-space regulation is seen as a natural development of the traditional aviation regulations, which are based on the interaction between a pilot and an air traffic controller. The existing rules cannot be tweaked to adapt them to the digital nature of drone operations where these automated systems need to be fed with the right information to keep the operation safe, secure and green. The U-space also needs its own flight rules and airspace classification.*
- *The U-space rules should be inspired by aviation and other sectoral legislations, like IT or telecom. A U-Space regulation separate from the existing ATM regulation appeared to be the most appropriate way forward to take due account of the digital nature of U-space and the role of data/digital data and data oriented services contributing to information society concept.*
- *A separate regulation is best suited to grant fair access to drone operators in a cost-effective manner through a competitive U-space services market. In addition to the safety elements, the separate U-space regulation should make the competition element clearly visible, including possibilities to assess a dominant market position. The European U-space rules will allow scalability, so that U-space service providers can benefit from economies of scale to keep costs of U-space services low while preserving profitability.*



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3. How should the U-space be established?

- *The specific regulation will give a solid legal basis for the U-space ('legalising' U-space as a specific jurisdiction).*
- *Member States are sovereign over their airspace. It will be up to the Member States to define the volume of airspace where U-space services would be provided. It is generally expected that States will start with low airspace (up to 500 ft or below VFR minima in an urban environment) and build on growing expertise.*
- *In addition, local authorities – cities and regions - should be involved from the beginning to manage societal concerns and ensure integration in the urban and regional environment. This should not lead to fragmentation.*
- *The establishment of U-space is possible only if there are clear performance requirements for U-space services in the designated volume of airspace.*

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4. What is the relation between U-space and ATM?

- *The two systems - U-space and ATM - are complementary, each governing its own volume of airspace. If a Member States designates a volume of airspace as U-space, then the question is whether this volume of airspace should still be subject to ATM rules or whether aircraft in the U-space would become subject to U-space rules.*
- *The two systems will, inevitably, have strong interactions and need a robust interface.*
- *The effective exchange of data between U-space system and the ATM system is indispensable to achieve a high target level of safety.*



Your views and opinions are welcome and appreciated

5. What are the U-space services that need regulation?

- *Drone and U-space technologies are expected to continue evolving fast. In addition, the market should also play and come up with innovative services.*
- *Yet, the regulation must establish a short list of services that are common in the U-space and that are key requisites for certification, oversight and enforcement. The proposed short list could contain the following services: communication, registration, identification, geo-awareness, airspace authorisation, rule awareness service, tracking and flight planning. The inclusion of this list will help creating a harmonized U-space services market and is necessary to assess the competence of U-space service providers.*
- *These services should reflect a clear process of how the flow of data could be organised in practice, for instance how the registration can deliver a unique identifier per operation. Requirements for UAS operators and for the U-space service providers need to be clarified.*

Your views and opinions are welcome and appreciated

6. What organisations may become U-space service providers?

- *Depending on the required quality level and the safety criticality, services in the U-space may be provided 1) subject to approval; 2) on basis of a declaration; or 3) not subject to any approval or oversight.*
- *U-space service providers should obtain an approval by the competent authority in accordance with performance-based requirements laid down in a regulation. The U-space regulation should therefore lay down clear rules for U-space service providers*



and for the process to obtain a certificate. The quality of the service (required performance level) must be linked to the approval process.

- *Some U-space providers may combine service provision with their own fleet management in order to achieve economies of scale.*
- *EASA could become the competent authority for EU wide service providers, who would like to roll-out EU wide U-space services or would provide Pan-European U-space services, e.g. for very high-altitude operations.*

Your views and opinions are welcome and appreciated

7. What would the specific airspace rules that would apply in the U-space?

- *SERA rules will not apply in the U-space. The draft U-space regulation should establish specific rules on U-Flight rules (completing IFR-VFR rules), on priority of air traffic and on U-space classes (in function of the expected air traffic and the demand for U-space services). These rules would then apply to all air traffic in the U-space, both manned and unmanned.*
- *These rules should facilitate the harmonised application of U-space and at the same time reflect possible differences in application. Relevant parts of SERA on airspace class, flying rules and priority rules may be used as a source of inspiration and duly adapted to the particularities of small drone size operations and highly automated flights.*

Your views and opinions are welcome and appreciated

8. Who will pay for the U-space?

- *The user – in this case the aircraft operators flying in the U-space – will pay for the U-space services. The cost of the U-space services will depend on the type of drone operation and the exact need for quality services.*



- *The U-space market is subject to competition between various U-space service providers in the same volume of airspace. U-space service providers will be entitled to provide their services, once approved by the competent authority, in the airspace volumes designated as U-space.*
- *The cost for U-space services are expected to be substantially lower than current ATM costs: 1) the U-space can make best use of existing infrastructure; 2) the U-space is above all digital; 3) U-space service providers should benefit from huge numbers of drone operations and from economies of (EU) scale.*
- *The development is partly borne by public entities; yet, important private companies are ready to invest as soon as the rules of the game will become clear.*

Your views and opinions are welcome and appreciated

