# U-SPACE REGULATORY FRAMEWORK WORKSHOP
## 14-15 MAY 2019 – COLOGNE

# SUMMARY OF CONCLUSIONS

## 1. WHAT IS THE U-SPACE AND WHAT IS THE OBJECTIVE OF THE REGULATION?

*Main points discussed:*

- *The EC policy is to develop a strong EU drone services market;*
- *Definition of U-space: indication of composing elements such as airspace vs services, automation, digitalisation and interaction with ATM/ANS;*
- *Need for a separation between ATM and U-space;*
- *Member States prerogatives on designation of airspace;*
- *Need for a separate airspace classification for U-space;*
- *List with examples of types of service to be provided in the U-space;*
- *Clear definition of roles and responsibilities, accountability of U-space actors;*
- *Responsibilities of cities, municipalities, local authorities.*

***SUMMARY OF CONCLUSIONS:***

- *EC´s main objective is to develop drone services market;*
- *The operations must remain safe, secure, green and respect privacy;*
- *U-space is the enabler of the drone service market;*
- *U-space is a set of services in a volume of airspace provided by a digital system;*
- *U-space is characterised by its high degree of automation and digital connectivity;*
- *U-space needs to take into account the way cities can take a leading role in U-space (e.g. in view of speed of innovation and local needs).*

## 2. WHY A SEPARATE U-SPACE REGULATION AND NOT USE EXISTING RULES?

*Main points discussed:*

- *Airspace and designation of U-space;*
- *Current ATM not adapted for managing UAS traffic, therefore U-space needed;*
- *Drone services market is the goal by enabling services;*
- *Full list of services not defined, not mature today. List of services not completed;*
- *Role of the authorities, in particular cities;*
- *Definition in relation to other documents (like the SESAR blueprint);*
- *Integration between ATM and U-space framework.*

***CONCLUSIONS***

- *There is a need for a separate U-space regulation to reflect the innovative character and the paradigm shift, distinct from, yet building on other aviation safety regulations; e.g. ATM present regulatory framework;*
- *There is a regulatory need to define:*
    - *flight rules and airspace where U-space services will apply;*
    - *roles and responsibilities of the actors, what applies and who is affected.*

## 3. How can U-space be established?

*Main points discussed:*

- *Manned vs unmanned operations – level of integration;*
- *Coordination, interface, interaction between ATM and U-space;*
- *U-space services in the cities: applicability of the existing flight rules and SERA;*
- *Geographical scope of the regulation and airspace classification;*
- *Different approach below and above VLL to be applied;*
- *Use of technologies, infrastructure.*

***CONCLUSIONS:***

- *Member States have sovereign powers to designate the volumes of airspace where U-space services will be available/provided;*
- *Member States to decide where services will be provided based on traffic complexity;*
- *Need to define performance requirements when establishing the U-space;*
- *Member States to decide who will act as authority at national, regional, local level;*
- *Cities to have a complementary role to address societal concerns;*
- *Unless segregation-like approach is applied, the same flight rules should apply in the same airspace for all airspace users;*
- *The draft regulation needs to be technology neutral; open standards to be applied (source may come from industry standards);*
- *The draft regulation should ideally contain an airspace classification for U-space;*
- *ICAO framework should not to be ignored when establishing U-space regulatory framework.*

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

*Main points discussed:*

- *Robust interface is crucial;*
- *Role of ATCO;*
- *VLOS, BVLOS;*
- *CTR traffic is complex, involvement of drone operators still needed;*
- *Reliability of data.*

***CONCLUSIONS***

- *ATM and U-space are distinct but complementary frameworks;*
- *The traditional human centric ATM/ANS is not always suitable for data driven drone operations (small and medium-sized drones);*
- *ATCO additional workload to be avoided;*
- *Imperative to have clear rules on the interaction between U-space and ATM.*

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

*Main points discussed:*

- *Performance of services;*
- *Criteria to establish services, classification of services;*
- *Common information service/function;*
- *Geo-awareness and airspace authorisation;*
- *Take into consideration State operations;*
- *Common altitude reference system;*
- *CORUS proposes extensive list of services and airspace classification to be considered.*

***CONCLUSIONS:***

- *There is a regulatory need for a list of basic services in the regulation, in order to make clear what is being regulated;*
- *The minimum list of services needed depends on traffic complexity in that airspace and its environment;*
- *A short list would be sufficient as it can always be extended later;*
- *Identification, airspace authorisation and geo-awareness are seen as crucial services;*
- *Leave flexibility to the authorities.*

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

*Main points discussed:*

- *Interface with ATM;*
- *U-space architecture centralised vs de-centralised;*
- *Certification/approval of U-space service providers;*
- *Types of services to be provided;*
- *Service level agreements.*

***CONCLUSIONS:***

- *Need to introduce competition;*
- *Those organisations meeting the requirements to qualify as U-space services can provide U-space services across the EU (mutual recognition of U-space services providers certificates is one of the main benefit of the U-space regulation);*
- *Need to establish service level agreements, in particular for non-regulated services to meet the required performance level for the UAS operations.*

## 7. WHAT ARE THE BASIC RULES THAT WOULD APPLY IN THE U-SPACE?

*Main points discussed:*

- *Need for specific rules for U-space;*
- *Applicability of SERA regulation;*
- *Need to establish priority rule on air traffic or flight rules for UAS operations;*
- *Need for other airspace classification specific for U-space.*

***CONCLUSIONS:***

- *SERA not suitable for UAS operations in the U-space;*
- *U-space flight rules may be built on SERA but need to be adapted to drone operations;*
- *Ideally flight rules specific for UAS operations in the U-space should be developed (however this requires more time for demonstration);*
- *Unclear at this stage if new classifications of airspace will be required.*

## 8. HOW IS U-SPACE EXPECTED TO BE FINANCED?

*Main points discussed:*

- *U-space needs to be beneficial for all citizens (value chain);*
- *Protection of the general public must be ensured;*
- *How to ensure financial level playing field;*
- *Consideration of costs for ANSP;*
- *Costs of critical and/or centralised infrastructures;*
- *Costs to be covered by tax payers such as for road traffic.*

***CONCLUSIONS:***

- *Agreement on the user-pays principle;*
- *Need to develop EU market to scale operations;*
- *Effective competition will reduce the costs.*