



## MILITARY AND U-SPACE: GUIDELINES

Unmanned aircraft systems (UAS), commonly called drones, are a growing business in Europe, performing operations in all kind of environments, including urban areas. In this context, the concept of U-Space has emerged, offering a set of new services relying on a high level of digitalisation and automation of functions and specific procedures designed to support the safe, efficient, and secure access to airspace for large numbers of drones.

With the strong increase in the number of drones expected to be operating at low altitude in the coming years, it is important that the military sector also engages with all other airspace users and authorities in order to avoid negative implications on safety, security, and defence.

This low-level airspace is regularly used by military aircraft for operations and training. Taking into account the fact that those military aircraft will not be able to be compliant with all U-space requirements, **the key objectives are to maintain the level of safety for military (low-level) operations, to guarantee the security of infrastructures, assets and operations, and to quantify the financial impact of the U-Space implementation on the military.**

During 2021 the EDA study "Military and U-Space: guidelines" addressed four key questions:

1. Can the military ignore U-space?
2. What are the likely impacts on military missions and operations?
3. How could the military mitigate the related risks?
4. How much will it cost for the military to adapt to U-space?

This study was meant to help better understand military operations in the future U-space environment. It raised significant interest and participation from both military and civilian actors as it was destined to facilitate a smooth and effective coexistence of civil and military operators in the future U-space drone 'ecosystem'.

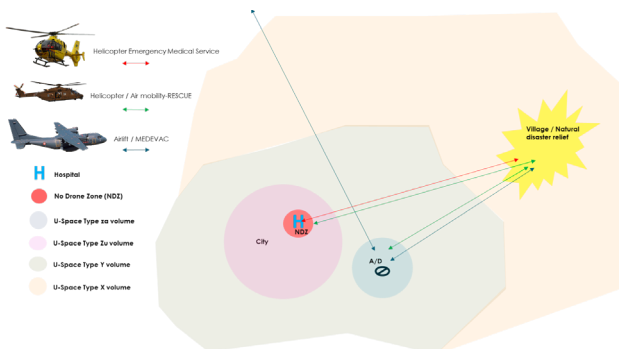


The deliverables of the 2021 study include:

## D1 - U-SPACE EVALUATION

Interactions between unmanned civilian activities and military activities in lower airspace (below 500 feet) were investigated through the development of 7 use cases:

- Use Case 1: Low-level airspace management
- Use Case 2: Recognized Air Picture
- Use Case 3: Air Policing mission (QRA)
- Use Case 4: Search and Rescue (SAR)
- Use Case 5: Maritime: Air mobility between warship and harbour
- Use Case 6: Large force training mission: Personnel Recovery (PR)
- Use Case 7: Natural disaster relief: MEDEVAC - Airlift (See diagram below)



The 4 main principles to be followed in the U-space were detailed in D1:

- Static & dynamic U-space airspace management
- Dynamic airspace reconfiguration
- Coordination and communication between military Air Traffic System and Command and Control Unit, U-Space Service Providers (USSP), UAS operators
- Connectivity methods between Air Navigation Service Providers, Common Information Service (CIS) Providers, U-Space Service Providers (USSP), UAS Operators

The military objectives and constraints need to be part of the U-space's development. The right not to be conspicuous to the USSP, and to control the sharing of information on military flights with civil entities is emphasised.

## D2 - COST AND BENEFIT ANALYSIS (CBA)

The implementation and operating costs were estimated, based on assumptions as several U-Space parameters are not yet defined. It showed that there are some financial savings, but no revenue. The preliminary cost estimation varies between €25.5 million and €850.9 million for the required adaptation of the U-space depending on the level of cooperation targeted by the military.

## D3 - PROPOSED RECOMMENDATIONS

The study findings point to the need to have the military involved in the U-Space definition and proposes ways ahead to involve civil and military stakeholders in regulation, U-Space airspace design and management and interoperability of civil and military systems. Indeed, the military should monitor the progress of U-space implementation, be systematically involved in the rulemaking process, and regularly update their position.

### Next steps

EDA continues to monitor the development and implementation of the U-space and will regularly update the deliverables of the U-Space study, including the recommendations for a safe and secure drone 'ecosystem'.

EDA will also launch additional studies on open questions related to the U-Space, such as the interfaces needed between USSPs/CISPs and the military from operational and technical perspectives, the management of lower-level airspace, or the e-conspicuity issues for military assets in/out of U-space airspace.

More information and all deliverables are available on [eda.europa.eu/u-space-study](https://eda.europa.eu/u-space-study)

