



DACUS

Demand and Capacity
Optimisation for U-Space

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KEEP THE BALANCE IN DRONE TRAFFIC

We created four focus groups that state a precise thematic research area to facilitate the communication with experts, stakeholders and other research projects.

We would be pleased if you like to be part of one of our research areas.



SEPARATION & CNS REQUIREMENTS

Coordination with BUBBLES,
USEPE, ATC and CNS experts



DCB CHALLENGES

Coordination with UTM and
DCB experts



UAV BUSINESS MODELS

Coordination with drone
operators



URBAN ENVIRONMENTS

Coordination with Smart
Cities initiatives and EASA

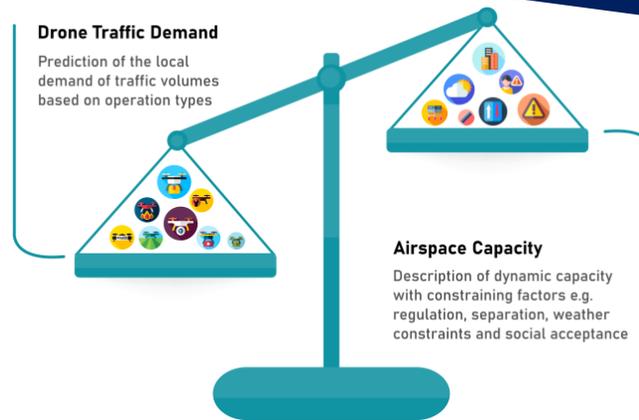


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As demand for drones over populated areas explodes, there will be a need for limiting the number of operations. Future Demand and Capacity Balancing (DCB) management processes in the context of U-space shall assist concurrent flight planning by multiple drone operators to ensure fair access to airspace and adequate balance between system capacity and demand of drone operations. Because of the ad-hoc and more dynamic nature of the drone mission trajectories, the system needs to deal with diverse and multiple changes affecting flight plans that can be received at short notice.

DACUS aims at the development of a **service-oriented DCB process for drone traffic management in urban environments.**

The project intends to integrate in a consistent DCB solution the relevant demand and capacity influence factors (such as CNS performances availability), boundary conditions (such as airspace structures or regulatory framework), processes (such as separation management), and other U-space services that are part of the overall DCB process (such as Operational Plan processing or Strategic Conflict Resolution services)



EXPECTED OUTCOME

- Demand and Capacity Balancing (DCB) operational concept and service-oriented architecture.
- Requirements of U-space services: Weather Information, Operation Plan Preparation & Optimization, and Dynamic Capacity Management
- U-space performance framework that will drive the overall DCB process.
- Algorithms to improve demand prediction (based on AI) and characterize capacity in U-space.
- Societal impact model addressing noise metrics based on population density.
- Impact of CNS performances on U-space capacity and separation requirements
- Urban airspace structures, rules and separation procedures.
- Fast-time simulation tool suitable for drone operations in urban environments.

DACUS CONSORTIUM

