

DACUS Demand and Capacity Optimization in U-space

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Key Principles:

- Collaborative Decision Making
- Prioritize the fulfilment of Drone Missions
- "Free-route" operations when constraints allow
- Minimize changes to requested plans
- Incorporate uncertainty in the DCB process
- Shared Drone Operation Plan (DOP) as "single point of truth"

What is drone DCB? As demand for drones overpopulated areas will increase, 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 much more diverse set of challenges than DCB then traditional ATFCM.



Drone Traffic Demand

Prediction of the local demand of traffic volumes based on operation types



Airspace Capacity

Description of dynamic capacity with constraining factors e.g. regulation, separation, weather constraints and social acceptance

- 1 Strategic Planning using AI demand model Pre-Tactical Planning with submitted DOPs
- 2 Safety/Risk assessment by collision risk and social impact models
- 3 Performance analysis addressing U-Space Key Performance Areas and KPI
- 4 Equitable DCB Measures consider Airspace Structures, Rules & Mission Objectives



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