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Thematic Area 3:
Airspace User Operations Short Term Horizon

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CORUS five 3nd Workshop

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U-space Airspace Access Conditions

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- UAS operations within U-space airspace to be conducted according to the **EU regulatory framework**:
  - Operators **registered.**
  - Limitations for the **Open** category.
  - Operational declaration or authorisation for **Specific** category.
  - **Certified** category operations not foreseen.
  - Applicable **capability and performance requirements** for the U-space airspace.
  - In receipt of **U-space services** provided by a **certified USSP**.
  - Conditions imposed by existing **UAS geographical zones**.

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U-space Airspace Initial Demand

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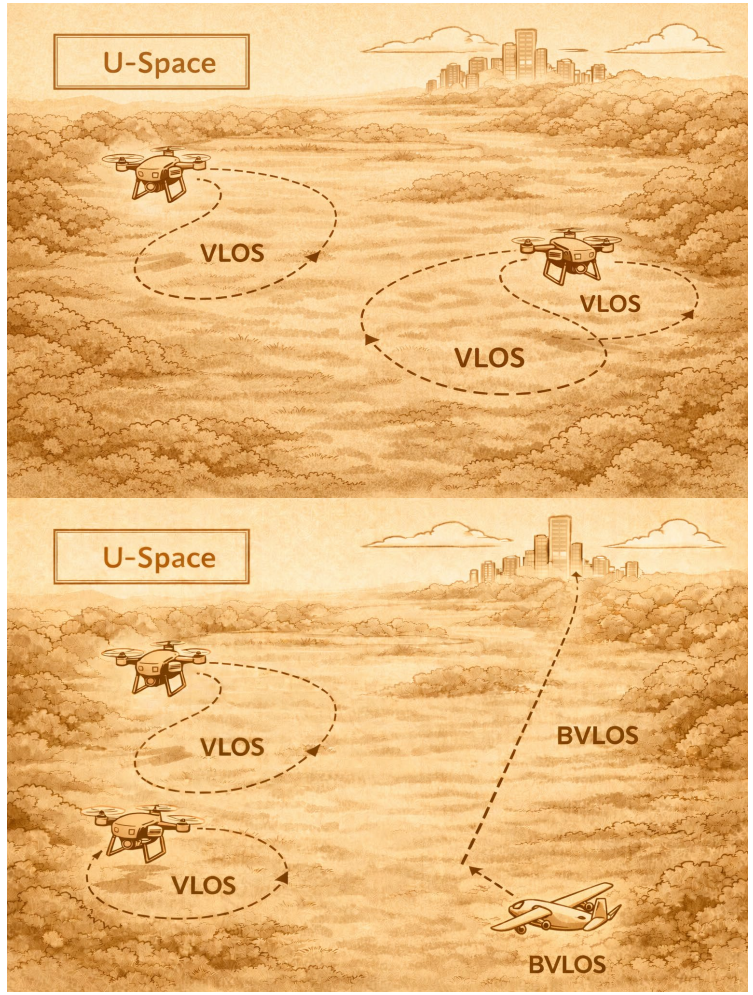
- U-space airspace **demand progressively increasing** but with limitations in its initial capacity:
  - Mostly initial **VLOS** operations.
  - Extending to a combination of **VLOS / BVLOS**.
  - Conflict management assumes that potential **collisions** will have **limited impact**.
  - Further **mitigations** may be necessary to enable **safe high-risk UAS operations**.
  - Special UAS operations are expected including **emergency and police operations**.
  - Conditions are expected to be **specific to each State** and thus outside U-space ConOps.



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U-space Airspace Initial Demand

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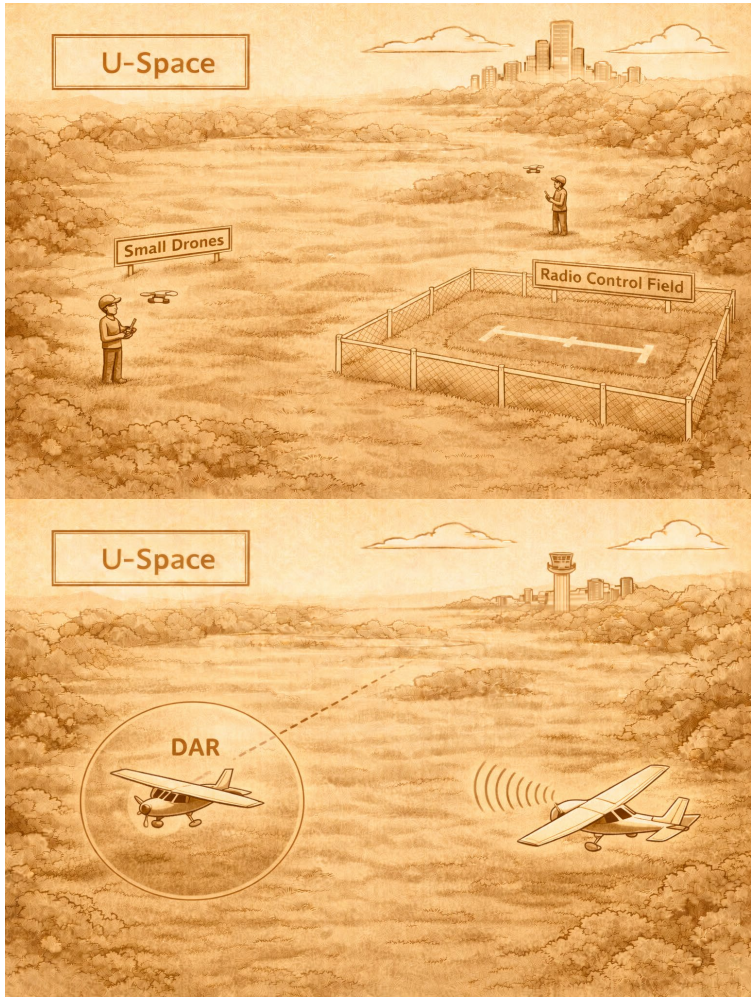
- U-space airspace would be **shared** with other airspace users:
  - **C0** UAS in **A1** Open category under specific rules.
  - **Aircraft model** authorised clubs protected by geographical areas.
  - **Manned** aircraft:
    - **Under ATC control**, Dynamic Airspace Reconfiguration (**DAR**) may be employed to protect the aircraft transit.
    - **Not under ATC**, must be electronically conspicuous, broadcasting information to USSPs (how?).
    - **No U-space services** provided to **manned aircraft** or a direct communication between aircraft operators and USSPs.



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U-plan as an authorization

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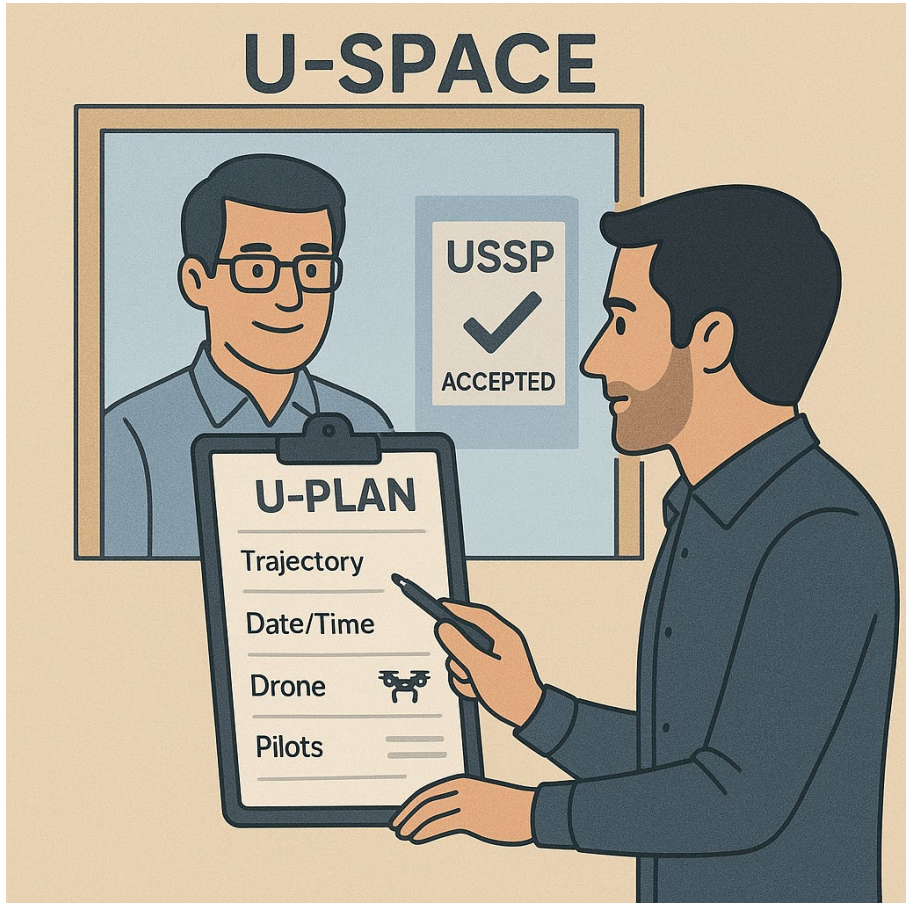
- The plan for an operation in U-space is referred to as a **U-plan**:
  - Describes the U-space access **request.**
  - When accepted describes an **authorization**.
  - The request is managed through your selected **USSP provider**.
  - U-plan defines:
    1. Operator details
    2. Type of operation
    3. Where (trajectory / volume)
    4. When
    5. Drones



U-plan design by operator

- The **U-plan** must be defined by the UAS operator according to the **mission objectives** and U-space airspace:
  - UAS operators fly **preferred trajectories** (U-plan request), **unless** in conflict with previously accepted U-plans or no-fly areas**.**
  - U-plan design lies **in the hands of the UAS operator**.
  - Assumed that the definition of the 4D trajectories may be **imprecise, conservative, and highly inefficient** in terms of airspace.

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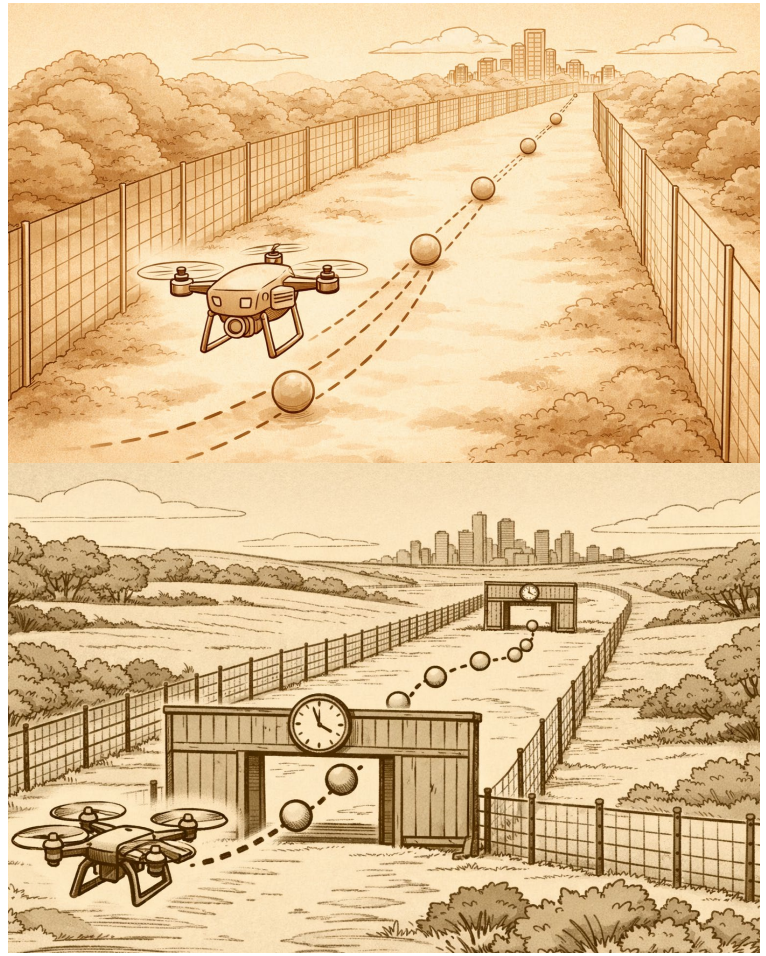
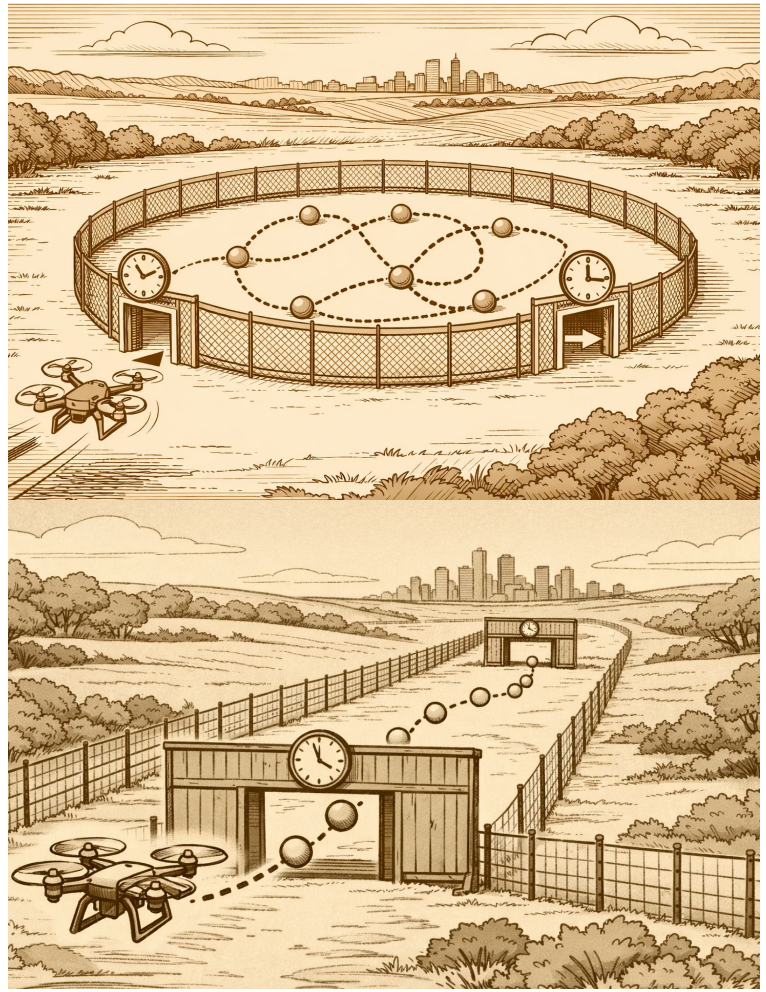
U-plan protection by U-space

- The **U-plan** is protected from other U-space operators by wide 4D volumes surrounding the intended trajectory:
  - Each trajectory segment is **protected** by horizontal and vertical “fences” that prevent other UAS to enter in conflict.
  - Protection volumes have **timing** associated to their **activation** and **deactivation**.



U-plan protection by U-space

- The **U-plan** is protected from other U-space operators by wide 4D volumes surrounding the intended trajectory:
  - Volumes may be associated to **timed trajectory segments** but also to **timed mission areas**.
  - Safety **margins are determined by the operator**, and depend on the UA performance and characteristics.



Operational control and U-plan update

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- The pilot retains the **authority** and **responsibility** for initiating, conducting, and terminating a flight.
  - UAS should conduct the flight with **adherence** to the **4D trajectory**.
  - Retain the ability to **respond to abnormal situations** and modify mission execution.
  - Pending **challenge** is the **amendment of active U-plans**, where coordination between USSPs and UAS operators is needed to react to dynamic situations.

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