CORUS five

Thematic Area 7:
Service Delivery Management Information Services
Short Term Horizon

Tom Lutz (Frequentis) and Vadim Kramar (VTT)

CORUS five 3nd Workshop

sesar JOINT UNDERTAKING
Co-funded by the European Union
Co-funded by EUROCONTROL

SDM: The U-plan as the Centrepiece

CORUS five

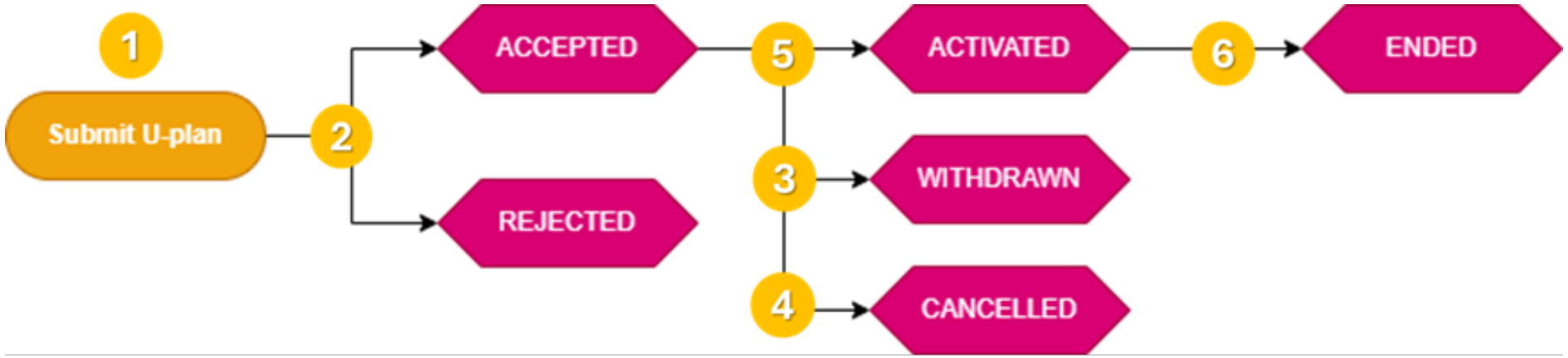
- **Core Concept:** The U-plan serves as the foundational agreement between the Unmanned Aircraft System Operator (UASO) and the U-space Service Provider (USSP), driving predictability and safety.
- The provision of U-space services begins with the U-plan submission
- USSPs only provide services to flights for which they have issued a UAS flight authorisation (U-plan)

U-space Service	From U-plan submission to its activation (or until rejected, cancelled, or withdrawn)	While the U-plan is active
Network Identification		✓
Geo-Awareness	✓	✓
Flight Authorisation	✓	✓
Traffic Information		✓
Weather Information*	✓	✓
Conformance Monitoring*		✓
* Optional U-space services are only provided if required for each instance of U-space airspace.		

sesar JOINT UNDERTAKING
Co-funded by the European Union
Co-funded by EUROCONTROL

U-plan Lifecycle

CORUS five



1) The Flight Authorisation Service receives a Flight Authorisation Request (submission of a U-plan) from the UAS Operator (UASO).

2) The Service performs a comprehensive assessment of the request, including syntactic and semantic validation, verification of operator registration, airspace capacity checks, verification against Dynamic Airspace Reconfiguration (DAR) or other restrictions, and conflict detection with already authorised flights of equal or higher priority.

   a) If any of these checks fail, the request is rejected, and the UASO is informed of the reasons. In case of a conflict, a modified proposal may be suggested.

   b) If all checks are successfully passed, the flight authorisation is accepted, assigned a unique identifier, and the UASO is informed, together with the applicable Terms and Conditions.

3) After acceptance and before activation, the authorisation may be withdrawn if a higher-priority flight intersects with the operation or if the airspace becomes subject to DAR or new restrictions.

4) Prior to activation, the UASO may cancel the flight (e.g., if they assess they cannot conform to the accepted U-plan) and submit a new request if needed.

5) Shortly before starting the flight, the UASO requests the U-plan activation. A final verification is performed to ensure that no withdrawal conditions apply; if successful, the flight becomes active, and the USSP provides in-flight services, such as the Network Identification Service (NIS) and the Traffic Information Service (TIS).

6) After completion of the operation, the UASO ends the U-plan by informing the Flight Authorisation Service that the flight is no longer active.

Common Information Service (CIS)

CORUS five

- CIS is essential to maintain a shared, consistent, and up-to-date operational picture, avoiding information asymmetry.
- Member States may decide on one of the following:
  - Single CIS Service Provider (CISP) – needs to be certified
  - Multiple CISPs designated to different regions – need to be certified
  - No CISP – USSPs should ensure information sharing, but must ensure a single point of truth for any part of common information.
- Access to common information services is non-discriminatory.

Information to be shared

CORUS five

- Airspace Organisation (horizontal and vertical limits of U-space airspace, adjacent U-space airspace(s), static and dynamic restrictions)
- Operational requirements (UAS capabilities & performance, U-space services performance, applicable operational conditions and airspace constraints)
- Service Providers' repository of the U-space services and their terms and conditions.

USSPs information exchange mechanism

CORUS five

- Airspace Management (U-plans, Geo-awareness)
- Air traffic-related (Network Remote ID, Traffic Information)
- Conflict Management (Conformance Monitoring, contingency measures, and procedures)
- Demand and Capacity Balancing

UAS Operators (UASOs) contribute with the following

CORUS five

- U-plans -> Airspace Management
- surveillance data -> Air Traffic
- contingency measures and procedures -> Conflict Management

CDM in Practice

- The so-called ‘tactical services’, i.e., network identification, traffic information, and conformance monitoring, are only provided during the flight execution.
- UASO uses Common Information (CI) during the initial stages of flight planning, before submitting the U-plan to their USSP: U-space airspace details, its UAS capability and performance requirements, etc. U-plan is active: U-space services are directly from USSP.
- USSP continuously uses the CI: Geo-Awareness, and Traffic Information services are continuously updated.
- UASO -> Network Identification Service -> USSP -> Traffic Information (including relevant Common Information) -> other USSP -> Traffic Information presenting the entire picture to all concerned parties (USSPs, UASOs, etc).
- Conformance Monitoring Service – yet another piece of information to be shared with all the concerned parties.

Questions to Discuss

- U-plan lifecycle – any improvements?
- U-space service provisioning – does it make sense that UASO access those before submitting the U-plan?
- Traffic Information service – anything to improve?
- Common Information Services – what else is relevant?
- Multiple USSP – what are the collaboration requirements and challenges for Collaborative Decision Making?

sesar JOINT UNDERTAKING
Co-funded by the European Union
Co-funded by EUROCONTROL

CORUS five

THANK YOU
FOR YOUR ATTENTION