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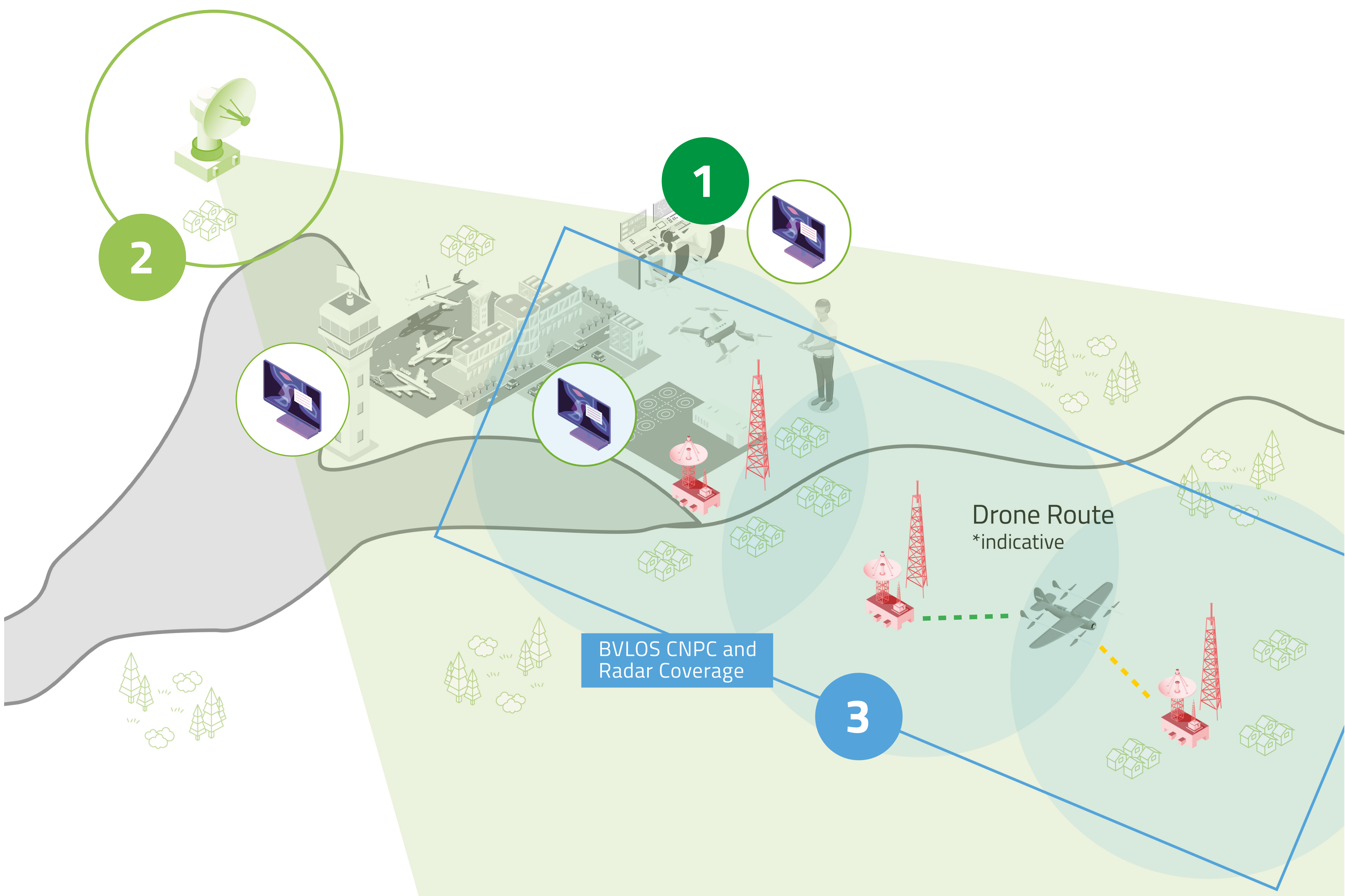


Digital Sky Demonstrator

ÉALÚ-AER

Enhanced Automation for U-Space/ATM integration

ÉALÚ-AER is a project co-funded by the European Union under the Connecting Europe Facility programme, managed by CINEA, and supported by the SESAR 3 Joint Undertaking. The project aims to demonstrate U-space operations and their integration with Air Traffic Control using world-class drone traffic management technologies. A major milestone of ÉALÚ-AER is the establishment of Ireland’s first Digital Sky Demonstrator, located at the Future Mobility Campus vertiport site in Shannon, Ireland.



1 U-SPACE SERVICES

This solution targets the delivery of U1 and U2 mandatory U-space services and increasing the automation and digitalisation of these services, therefore providing a better outlook for the expected U3 and U4 services, and enabling safe, secure and reliable Beyond Visual Line of Sight (BVLOS) UAS operations within Class-C airspace with multiple Stakeholders. The solution integrates a set of U-space services delivered by a U-space Service provider (USSP) and Common Information Service Provider (CISP). This solution targets the delivery of U1 and U2 mandatory U-space services and increasing the automation and digitalisation of these services, therefore providing a better outlook for the expected U3 and U4 services, and enabling safe, secure and reliable BVLOS UAS operations within Class-C airspace with multiple Stakeholders. The solution integrates a set of U-space services delivered by a U-space Service provider (USSP) and Common Information Service Provider (CISP).

2 SKYLER® AESA RADAR

This solution proposes a U-Space architecture with a surveillance enabler, Skyler® Radar, to track any non-cooperative aircraft within the area, in order to enhance the situational awareness of the U-space stakeholders, acting as gap filler radar, enabling the safety of BVLOS operations. The solution is demonstrated via a range of different BVLOS operations within Controlled/Uncontrolled airspace from a vertiport.

3 CNPC RADIO INFRASTRUCTURE

This solution focuses on providing a ground infrastructure and onboard Control and Non-Payload Communications (CNPC) UAS equipment for a Command-and-control (C2) link. The demonstrated CNPC system continuously provided real-time, user friendly connectivity and link health information to the UAS operator via the USSP HMI, thus helping keep the user informed of the health of their C2 connection and overall operability of the CNPC network. Assessing and communicating the health and performance of the C2 network is an important step in documenting compliance to connectivity requirements, building user and stakeholder trust, improving the system, and ensuring suitability of the system for BVLOS operations.



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