

ADACORSA Short Project Description

ADACORSA is a project to develop sensor and communication technologies for drones to give drones the chance being safe and efficient “elements” for observation, analysis, or transport in an extended out of line-of-sight operation range. The strategic aim is to:

- Helping unlock potential in long-range and BVLOS drone operations
- Contributing to higher public and regulatory acceptance of drone use
 - More robust and reliable technologies through functional redundancy
 - Better sensors via fusion and more reliable communications via integration of data links
- Further strengthen the integration of automotive and drone industry
 - World-class sensors from automotive industry
 - Commercial off-the-shelf data communication technologies and services
 - Design for automotive-style efficient production of components and subsystems

In order to keep the leading competitive strength, and to respond to the global challenge, the ECSELJU project ADACORSA has gathered Europe’s leading semiconductor companies, suppliers, and research institutes to create a pan-European eco-system, which has the critical mass to initiate standards and to provide relevant sensors, components, architectures and subsystems for a completely new type of drones.

Frequentis SC 6 Leader in the ADACORSA Project

SUPPLY CHAIN 6 TECHNICAL VERIFICATION IN THE CONTEXT OF UTM: SC6 develops environments for the crucial service of verification of selected elements of the ADACORSA technology stack in the context of UTM, hence representing the aspect of organised interaction between drones and ground and between drones and other aircraft in potentially dense airspace of the future. The supply chain is led by Frequentis, who also develop the flight information management system. Blockchain technology developed by CEA, industrial research partners, ensures integrity and traceability of messages from drone to ground-based UTM systems, and a UTM traffic simulation environment is developed by Almende and Bauhaus Luftfahrt to provide the verification capabilities in a simulation environment. NLR provides a testbed for DAA systems, and an on-board layer to monitor onboard safety issues in collaboration with ground-based systems and other vehicles are developed by UniBW, in collaboration with Almende and Syrphus to support the use of this novel technology for regulatory compliance.

Frequentis Project Results in the ADACORSA Project

In this project, Frequentis has created a demonstrator comprising a Registration, Identification, Tracking. The proposed pre-operational Flight Information Management System (FIMS) comprises an interoperability architecture for integrating existing commercial off the shelf (COTS) UTM components as well as other infrastructures to perform demonstration activities based on operational scenarios and concepts of operations with respect to registration, identification, tracking and payload sensor data processing. The demonstrator will show the fitness for purpose of combining COTS components to demonstrate all phases of drone operations with focus on pre-flight and flight execution. The concept

translates the workflow into services and interactions with external parties and other infrastructures enabling shared situational awareness for all aviation stakeholders. A proposed microservice-oriented data exchange layer provides standard protocols to connect various UTM services allowing for automated drone traffic management and situational awareness. The proposed architecture underlines that the proposed data exchange layer might be subject to a centralised regime owned by the ANSPs (in accordance with current ICAO rules and regulations). Ultimately, the whole concept shall comply and integrate with existing ICAO regulations (ATM/UTM integration) by simultaneously providing a service-oriented infrastructure to enable new business models for the UTM service provider landscape.

ADACORSA Project Facts

- Short Name: ADACORSA
- Full Name: Airborne Data Collection on Resilient System Architectures
- Duration: 1/05/2020 – 1/05/2023 (36months)
- Total costs: Up to 42 M €
- Requested EU Contribution: ~12 M€
- Consortium: 49 Partners out of 12 countries along the exploitation chain
- Coordinator: Infineon Technologies AG
- Website: <https://adacorsa.eu/>
- ADACORSA has received funding from the ECSEL Joint Undertaking (JU) under grant agreement No 876019.

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