



Thales to lead EU project on drone geofencing technologies to secure future U-space



Paving the way for future drone traffic increase, SESAR Joint Undertaking (SESAR JU) is supporting the European Commission U-space initiative by researching and developing new services for safe, efficient and secure access to airspace of a large number of drones. The Geosafe project is part of

the founding services for the development of drones operation. Engaged in the creation of solutions that will make tomorrow's mobility possible, Thales will manage the project, supported by the competences of Aeromapper, AirMap, Atechsys, Airmarine and SPH Engineering.

By securing the flight pattern of drones to avoid determined zones, geofencing solutions are key safety enablers. They are notably mandatory to ensure that drones do not fly in protected perimeters around critical infrastructures, such as power plants or airports. The objectives of Geosafe are to establish state-of-the-art geofencing solutions regarding U-space regulation and to propose improvements and recommendations for future geofencing system definition.

Geosafe will be based on a one-year long flight-test campaign, assessing a number of commercially-available geofencing solutions in order to propose improved geofencing system for tomorrow and technological improvements for automated drones.

Thales, world class leader in military drones, commercial avionics and air traffic management, designs systems ensuring the highest security and safety levels for future air mobility. As the leader of the project, the group will organize all tests and will provide recommendations for the European geofencing system.

"Thales is playing a leading role in shaping the autonomous world," said Christian Bardot, Thales VP in charge of Helicopter and UAV Avionics Business. "Together with SESAR JU and the Geosafe partners, we will strengthen the foundations of drones safe and secure operations unleashing the potential of this tremendous market.

The 280 flight tests will be conducted in France, Germany and Latvia, along the year. These tests are intended to test all possible situations that an automated drone will face in urban and rural areas.



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ABOUT SESAR

As the technological pillar of the Single European Sky initiative, SESAR aims to modernise and harmonise air traffic management in Europe. The SESAR Joint Undertaking (SESAR JU) was established in 2007 as a public-private partnership to support this endeavour. It does so by pooling the knowledge and resources of the entire ATM community in order to define, research, develop and validate innovative technological and operational solutions. The SESAR JU is also responsible for the execution of the European ATM Master Plan which defines the EU priorities for R&D and implementation. Founded by the European Union and Eurocontrol, the SESAR JU has 19 members, who together with their partners and affiliate associations represent over 100 companies working in Europe and beyond. The SESAR JU also works closely with staff associations, regulators, airport operators, airspace users, the military and the scientific community.

Learn more about SESAR: www.sesarju.eu/U-space

ABOUT U-SPACE

Research and innovation is underway in SESAR to ensure that the increase of drone traffic in Europe's skies can be managed safely, in particular in relation to commercial air transport. Much of it is done within the framework of U-space, an initiative by the European Commission to ensure the safe and secure integration of drones across Europe. The aim of U-space is to put in place a set of new services relying on a high level of digitalisation and automation of functions and specific procedures designed to support safe, efficient and secure access to airspace for a large numbers of drones, with an initial look at very low-level (VLL) operations. The services and technologies are categorised as: foundation services (U1), initial services (U2), advanced services (U3) and full services (U4). U-space In this context, in 2017 the SESAR launched a series of U-space projects addressing everything from the concept of operations for drone operations, critical communications, surveillance and tracking, and information management to aircraft systems, ground-based technologies, cyber-resilience and geo-fencing. In 2017-2018, Large-scale demonstrations got underway to showcase already matured U-space services and technologies for visual line of sight (VLOS) and BVLOS drone flights. The scope covers operations in rural and urban areas, in the vicinity of airports, in uncontrolled and controlled airspace, and in mixed environments with manned aviation. Projects are, for example, examining how to handle VLL operations where general aviation, commercial aviation and drones share the airspace.



ABOUT THALES

The people who make the world go round – they rely on Thales. Our customers come to us with big ambitions: to make life better, to keep us safer.

Combining a unique diversity of expertise, talents and cultures, our architects design and deliver extraordinary high technology solutions. Solutions that make tomorrow possible, today. From the bottom of the oceans to the depths of space and cyberspace, we help our customers think smarter and act faster, mastering ever greater complexity at every decisive moment along the way.

With 66,000 employees in 56 countries, Thales reported sales of €15.9 billion in 2018.



PARTNERS OF THE GEOSAFE PROJECT



Aeromapper is a manufacturer and operator of long range UAVs specialized in cartography and surveillance.

Aeromapper provides Geosafe with test capabilities on fixed-wing drones for beyond line of sight flights. Aeromapper will work closely with AirMap and Thales to make Geofencing responsive and compatible with the future European UTM system.



AirMap is the leading global UAS Traffic Management (UTM) platform for drones with solutions for geo-awareness, flight management, authorization, and real-time traffic deconfliction. For GEOSAFE, AirMap will equip each drone operation with dynamic airspace information related to advisories, regulatory requirements, and weather conditions. Once airborne, the drone shares telemetry with the AirMap platform to receive real-time alerts of changes in airspace conditions, including temporary flight restrictions, restricted areas, and live positioning of nearby air traffic for enhanced situational awareness and safety.



AIR MARINE has been performing air missions for more than 25 years.

AIR MARINE's combination of airplane/helicopter and drone commercial pilots allow the company to address accurately and efficiently the drone operational challenges with the manned-aviation related concerns.

AIR MARINE will bring to GEOSAFE project its experience in multiple drone systems fleet operations to challenge and test in real flight conditions the performances of the geofencing features provided by the drone manufacturers.



Atechsys Engineering (ATE) provides a drone powered solution for 10 years. With Thalès and Hionos, ATE will be in charge of tests, in flight, of the Geosafe solution performances developed by partners. The CEEMA, sub-contractor of ATE, will give access to its privatized aerial zone with a runway."



Unmanned systems integration services and software development, and world's premier mission planning software UgCS are the main specialization of SPH Engineering. As one of the partners of the project SPH Engineering will provide respective testing of geofencing solutions to validate the compliance of the current drone features regarding to U-space services. Tests will be performed in Latvia.