

Tactical **IN**strumental Deconfliction
And In flight Resolution



THE CONSORTIUM

An innovative European team

The project gathers innovative companies from start-ups to market leaders, as well as research institutes and a competitiveness cluster. A European team from four countries: France, Italy, Spain and the United Kingdom, with one shared goal:

Enabling Urban Air mobility.



2-year project (2021-2022)
€4 million budget

A **SESAR H2020**
Very Large-Scale Demonstrator

**Four demonstrations to test
U-space deconfliction services
in live Urban Air Mobility conditions**



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THE CONTEXT

One goal: enabling the safe integration of drones in European skies

New aircraft types are coming onto the market with alternative propulsion and new vehicle designs, all increasingly automated and remotely piloted, such as flying taxis and drones. These have the potential to meet the demand for alternative modes of transportation in large cities. But before lift-off, they need to be integrated safely into the skies, alongside existing manned aviation and air traffic control.

To tackle this issue, the research and innovation programme SESAR Joint Undertaking is pooling Europe's resources and expertise to develop new operational concepts, on the safe and secure integration of drones. This set of services, called U-space, relies on a high level of digitalisation and automation of functions, and on specific procedures designed to support safe, efficient and secure access to airspace for large numbers of drones. It is in this context that the TindAIR project was launched.

U-SPACE FUNCTIONS ADDRESSED:

- E-identification, tracking and position reporting, surveillance data exchange
- Geo-awareness, geo-fence provision
- Strategic and Tactical deconfliction
- Dynamic capacity management
- Traffic information
- Emergency management

THE PROJECT

PURPOSE

The objective of this Very Large-Scale Demonstration project is to deliver strategic and innovative technologies that can drive competitiveness and urban air mobility growth, while demonstrating the safe integration of urban aircraft as additional airspace users.

HOW WE DO IT:

The creation of a tactical deconfliction service

The aim of the project is to provide U-space users with a tactical deconfliction service. As urban areas are very dense and many aircraft with different sizes and speeds will be sharing the same airspace, a service to prevent and avoid collisions is necessary. This service includes systems and devices that detect possible conflicts and provide alerts in a timely manner. Through a safe communication link, it sends appropriate instructions to change the aircraft speed, altitude and/or heading as needed to safely and efficiently deconflict and to guide the re-routed aircraft back to course once the conflict is solved.



A series of demonstrations

The TindAIR consortium will operate a series of demonstrations, covering a range of representative and operational use cases, featuring a combination of manned and unmanned aircraft. Operational scenarios address existing urban needs ranging from medical emergency transport to a mix of freight and passenger flights, including extreme cases like sector saturation capacity and emergency landing. They also involve different types of platforms with various capacities and levels of automation, all sharing the same airspace volume. The regions of Toulouse and Bordeaux are hosting these full-scale trials.



USE CASES:

Autonomous drones flight management in context of medical emergency

Autonomous drones flight & eVTOL flight management

Autonomous drones flight & light vehicles management

Emergency landing