



The project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement N°101017677.



25th March 2021

Launch of TindAIR, -Tactical INstrumental Deconfliction And in flight Resolution- a new European project for large-scale demonstrations on urban air mobility

As the demand for the use of unmanned air vehicles (UAV) in urban settings grows, so does the need to ensure the unlimited, unrestricted and safe cohabitation of all airspace users in our skies. To address this challenge, a group of innovative companies and research laboratories from France, Italy, Spain and the United Kingdom, coordinated by Innov'ATM under the aegis of the SESAR Joint Undertaking, have teamed up to launch TindAIR, a series of very large-scale demonstrations on urban air mobility, with a focus on strategic deconfliction.

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 and the challenge of reducing noise and CO₂ emissions. But before lift-off, these new air vehicles need to be integrated safely into the skies alongside existing manned aviation and air traffic control.

This is where U-space comes in, and the research and innovation programme of the SESAR Joint Undertaking, which is pooling Europe's resources and expertise to develop new operational concepts, underpinned by existing and new technologies, on the safe and secure integration of drones. It is in this framework that the TindAIR (Tactical INstrumental Deconfliction And In-flight Resolution) project – a very large-scale demonstration project – has been launched. The objective is to demonstrate that the acceptance of this new "traffic" in urban areas is possible, while ensuring the safety and respecting the privacy of people and property. The aim is also to show how this new and complex environment can be integrated safely with existing manned aviation and air traffic control.

In order to achieve this goal, the TindAIR consortium will operate a series of demonstrations covering a range of representative and operational user cases and featuring a combination of manned and unmanned aircraft. Operational scenarios will address existing urban needs or compelling use cases, from medical emergency transport to a mix of freight and passenger flights, including extreme cases like sector saturation capacity and emergency landing. And all this using aircraft of various types and capacities with varying levels of automation, all sharing the same volume of airspace.

Forseen for 2022, the TindAIR demonstrations will be take place in the suburban - urban areas of the French cities of Toulouse and Bordeaux, and will focus on strategic and tactical assistance to conflict detection and resolution. The aim will be to validate concepts of operations and target architecture for conflict detection and resolution function for all airspace users and will offer validated and experienced U-space services to the future users of these modes of urban air mobility (UAM). This effort is also the opportunity to demonstrate operations of a tactical conflict resolution service module that embeds an artificial intelligence algorithm, which will can be integrated into the future U-space deployments.

The TindAIR consortium is looking forward to a successful cooperation with a perfect set of innovative startups, research labs, air taxi and industrial providers coordinated by Innov'ATM, French company, a well-known specialist in AI for UTM/C-UAS.

TindAIR is funded by the European Union's Horizon 2020 research and innovation programme (Grant Agreement No. 101017677), under the : **SESAR-VLD2-03-2020 "U-space capabilities and services to enable Urban Air Mobility" call for proposal.**

All the TindAIR consortium members are proud to take part in this ambitious, pragmatic and innovative project aimed at carrying out full-scale experiments to enable the emergence of tomorrow's transport modes and industries.

Consortium information:

The consortium consists of the following organizations:

- Coordinator: Innov'ATM, France, www.innov-atm.com
- ONERA (Office National d'Etudes et de Recherches Aéropatiales), France, www.onera.fr
- Pildo Consulting SL, Spain, www.pildo.com
- ISSNOVA (Institute for Sustainable Society and Innovation), Italy, www.issnova.eu
- Rockwell Collins France SAS, France, www.collinsaerospace.com
- Skyports Limited, United Kingdom, www.skyports.net
- CIRA (Centro Italiano Ricerche Aerospaziali SCPA), Italy, www.cira.it
- Aerospace Valley, France, www.aerospace-valley.com
- Fundacion TECNALIA Research & Innovation, www.tecnalia.com
- Skybirdsview, France, www.skybirdsview.com
- APSYS, an AIRBUS company, France, www.apsys-airbus.com



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