PROJECT

DACUS

Demand and Capacity Optimisation in U-space

Funding: European (Horizon 2020)

Duration: Jul 2020 - Dec 2022

Status: Ongoing

Total project cost: €1,910,731

EU contribution: €1,739,618

Call for proposal: H2020-SESAR-2019-2

CORDIS RCN : 229582

Objectives:

DACUS aims at the development of a service-oriented Demand and Capacity Balancing (DCB) process for drone traffic management. This overall objective responds to an operational and technical need in European drone operations for a tangible solution integrating the functionalities of the SESAR U-space services for Drone Traffic Management (DTM) to produce timely, efficient and safe decisions.

The project intends to integrate in a consistent DCB solution the relevant demand and capacity influence factors (such as CNS performances availability), definitions (such as airspace structure), processes (such as separation management), and services (such as Strategic and Tactical Conflict Resolution). Therefore, to achieve the overall DACUS objective, five specific objectives are set:

1. Develop a drone DCB process, from strategic to tactical phase, integrating uncertainty of planned operations and guided by the definition of a U-space performance scheme that include the development of metrics for airspace capacity appropriate for an environment with no human controller.
2. Develop innovative services algorithms and enabling models and technologies as functional blocks of DCB process, able to support large number of simultaneous operations and to design and manage efficient and safe drone trajectories.
3. Define a structure for Very Low Level (VLL) airspace and a set of airspace rules that optimises the trade-off between capacity and safety, including the definition of separation management process.
4. Find the optimal balance between on-board separation intelligence and U-space separation service intelligence in tactical separation depending.
5. Refine Communication, Navigation and Surveillance (CNS) requirements in support of tactical and procedural separation, with a focus on urban environment.

Parent Programmes:

H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Centro De Referencia Investigacion Desarrollo E Innovacion Atm, A.i.e.

Address:
Avda De Aragon 402 4 Edificio Allende
N/A Madrid
Spain

EU Contribution: €313,000

Partner Organisations:

Ingenieria Y Economía Del Transporte S.a.

Address:
Paseo Habana 138
28036 MADRID
Spain

Organisation Website:
http://www.ineco.es

EU Contribution: €140,500

Enaire

Address:
AVENIDA DE ARAGON S/N BLOQUE 330, PORTAL 2 PARQUE EMPRESARIAL LAS MERCEDES
28022 MADRID
Spain

Organisation Website:
http://www.aena.es

EU Contribution: €57,664

Eurocontrol - European Organisation For The Safety Of Air Navigation

Address:
Rue De La Fusée 96
1130 Bruxelles
Belgium

Jeppesen Gmbh

Address:
Frankfurter Strasse 233
63263 Neu-Isenburg
Germany

Organisation Website:
http://www.jeppesen.de

EU Contribution: €248,225

Boeing Research & Technology Center

Address:
Cañada Real de las Merinas 1-3, Edificio 4
28042 MADRID
Spain

Organisation Website:
http://www.boeing.com

EU Contribution: €188,453

Toulouse Metropole

Address:
6 RUE RENE LEDUC
31500 TOULOUSE
France

EU Contribution: €53,978

Technische Universitat Darmstadt

Address:
KAROLINENPLATZ 5
64289 DARMSTADT
Germany

Organisation Website:
http://www.tu-darmstadt.de

EU Contribution: €230,750

Netgengid Ehf.

Address:
GRENSASVEGUR 11
108 REYKJAVIK
Iceland

EU Contribution: €76,250

Sopra Steria Group

Address:
ZAE LES GLAISINS 3 RUE DU PRE FAUCON
74940 ANNECY LE VIEUX
France

EU Contribution: €225,916

Isa Software

Address:
St Georges House Chester Road 215-219
Manchester
M154JE
United Kingdom

EU Contribution: €204,883

Technologies:

Aircraft operations and safety
Drone traffic management system

Development phase: Research/Invention

STRIA Roadmaps: Network and traffic management systems

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport
Safety/Security, Other

Transport policies: specified

Geo-spatial type: Other