

PROJECT

AGENT

Adaptive self-Governed aerial Ecosystem by Negotiated Traffic

Funding: European (Horizon 2020)

Duration: Feb 2016 - Jan 2018

Status: Complete

Total project cost: €598,750

EU contribution: €598,750



Call for proposal: H2020-SESAR-2015-1

[CORDIS RCN : 200133](#)

Objectives:

Present traffic alert and collision avoidance system, TCAS II, was designed to operate in traffic densities of up to 0.3 aircraft per square nautical mile (NM), providing an excellent performance in pairwise encounters but with some shortages due to induced collision scenarios that could emerge in certain surrounding traffic scenarios. Therefore, this project proposal seeks to implement a new framework extending the functionalities of TCAS to act at pre-operational (i.e. tactical) and at operational level as a robust collision avoidance system for different context scenarios in which human behaviour and automatism interdependencies will be considered with realistic aircraft performances.

The project proposes the development of an Adaptive self-Governed aerial Ecosystem by Negotiated Traffic that provides mechanisms and tools for induced collision avoidance while dynamically creating virtual Ecosystems of aircrafts as soon as a conflict is forecasted (considering uncertainties) providing different negotiation based resolutions both at the conflict resolution and collision avoidance levels accounting for safety, security, capacity and cost-efficiency aspects.

Based on machine-to-machine communication, this approach will prevent from TCAS failure scenarios due to multithread and induced collisions by a dynamic state space analysis and monitoring of surrounding traffic enhancing the TCAS range.

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:

Universitat Autònoma De Barcelona

Address:

Campus De La Uab Bellaterra
8193 Cerdanyola Barcelona
Spain

EU Contribution: €183,750

Partner Organisations:

Technische Universitaet Braunschweig

Address:

Pockelsstrasse
38106 Braunschweig
Germany

Organisation Website:

<http://www.tu-braunschweig.de>

EU Contribution: €135,000

Aslogic 2011 SI**Address:**

AVDA ELECTRICIDAD 1 PLANTA 2 PUERTA 1
08191 RUBI
Spain

EU Contribution: €133,750

Cranfield Aerospace Limited**Address:**

Cranfield University Campus Hangar 2
Cranfield
MK43 0AL
United Kingdom

Organisation Website:

<http://www.cranfield.ac.uk>

EU Contribution: €146,250

Technologies:

Sensor technologies
Collision avoidance system

Development phase: Research/Invention

STRIA Roadmaps: Network and traffic management systems

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security

Geo-spatial type: Other