INTELLICONT

Development and Manufacturing of Intelligent Lightweight Composite Aircraft Container

Funding: European (Horizon 2020)
Duration: Mar 2018 - Feb 2021
Status: Ongoing
Total project cost: €2,506,235
EU contribution: €1,999,945

Call for proposal: H2020-CS2-CFP06-2017-01
CORDIS RCN: 213818

Background & policy context:
Air cargo has experienced tremendous growth. Essential components and open field of technological advancement are air-cargo containers (ULDs) which have not followed the technological advances of aircraft structures and systems. The faced challenges are: reduce ULD and aircraft weight; enhance container fire/smoke detection and suppression; eliminate permanent moving and locking hardware; enhance flight safety, loading/unloading logistics and maintenance.

Objectives:
The main goal of the proposal is to develop, manufacture and validate a new intelligent lightweight aircraft cargo container with integrated functions for restrain, transportation, fire/smoke suppression, with sensing and wireless monitoring capabilities. The outlined approach entails development of a full composite ULD, manufactured by low cost, high output methods (pultrusion, RTM). Following common certification practice, a building block approach is employed to design and validate the container. A self-moving platform allowing the motion of the ULD inside and outside the aircraft. Low-cost and low-energy sensors in the container track status (ID, location, locking state) and detect critical events, fire/smoke, impacts and accidental misuse. The status of each container will be available to the pilots though a wireless communication network, such that problems would be detected, and proper measures would be taken.

Methodology:
Lab-scale and full-scale tests are proposed for the validation of the ULD. Obtained numerical and test data will pave the routes to certification and industrialization. The ambition of the project is to provide a major break-through in the state of the art of current ULD technology and aircraft cargo operations. Substantial impact is anticipated on the CleanSky program, the reduction of aircraft payload and weight, safety, maintenance and lean aircraft operation processes. INTELLICONT will be a game changer for the air-cargo industry with substantial broader impact on air-cargo handling operations.

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)
Other programmes: JTI-CS2-2017-CFP06-LPA-02-16 SmartContainer

Lead Organisation:

Skandinavian Abionix Gkris Anonimietareia Emporia Kai Ypiresies Ilectronikon Sistimaton
**Partner Organisations:**

**Manchester Metropolitan University**

**Address:**
All Saints Building, Oxford Road
MANCHESTER
M15 6BH
United Kingdom

**Organisation Website:**
http://www.mmu.ac.uk

**EU Contribution:** €383,954

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**National Technical University Of Athens**

**Address:**
Heroon Polytechniou 9 (polytechnic campus)
15780 ZOGRÁFOS
Greece

**Organisation Website:**
http://www.martrans.org

**EU Contribution:** €366,926

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**Prisma Electronics Abee**

**Address:**
Dimokratias Avenue 87
68100 ALEXANDROUPOLIS
Greece

**Organisation Website:**
http://www.prisma.gr

**EU Contribution:** €308,342

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**Panepistimio Patron**

**Address:**
University Campus- Rio
26500 Patras
Greece

**Organisation Website:**
http://www.upatras.gr

**EU Contribution:** €340,082

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**Acciona Construccion Sa**

**Address:**
Avenida De Europa 18
28108 Alcobendas
Spain
Organisation Website: http://www.acciona-infraestructuras.es
EU Contribution: €275,680

Technologies:
Freight transport technologies
Smart secure cargo container to eliminate screening and tampering
Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing, Infrastructure
Transport mode: Air transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Safety/Security, Digitalisation
Geo-spatial type: Other