

PROJECT

IDEN

Innovative Distributed Electrical Network

Funding: European (Horizon 2020)

Duration: Oct 2018 - Nov 2021

Status: Ongoing

Total project cost: €1,399,038

EU contribution: €1,399,038



Call for proposal: H2020-CS2-CFP07-2017-02

[CORDIS RCN : 218792](#)

Background & policy context:

With the introduction of the more electric aircraft greater emphasis is placed on the power generation and distribution architecture as a result of increased power demands and higher efficiency needs, as well as the interest in using electrical power for more flight critical applications.

Together with the steady drive for reduced weight, increased reliability and reduced maintenance, this leads to the requirement for new approaches for the aircraft electrical supply generation and distribution, managed intelligently to maximise efficiency and ensure safe aircraft operation under all conditions.

Objectives:

The prime aim of the project is the design, development and test of an 'Innovative Primary & Secondary Electrical Distribution Network for Regional A/C' based upon state-of-the-art power semiconductors and enhanced electrical energy management (E2-EM).

The EPGDS to be designed comprising 2 Primary Power Centres - PPC, 4 Secondary Distribution Units - SDU, 2 AC/DC converters, solid-state based contactor/breakers - SSPC and externally provided System Supervisor & DC/DC converter interface between HV & LV primary bus bars.

The system will be designed to interface to the REG Iron Bird facilities.

Methodology:

The design of each LRU will be based upon the use of state-of-the-art power semiconductor devices, innovative circuit topologies and embedded intelligence.

A foundation stone of the EPGDS system is the effective modelling of each of the LRU's and the overall system to enable the investigation of diverse operating conditions, permit verification of correct functionality and highlight any deficiencies at an early stage. In addition, it will permit the use of automatic code generation of each LRU embedded controller.

All designs will take into account the specification requirements for avionic equipment in order to facilitate future development to production & certification. Thermal, vibration and EMC survey of key elements will be performed.

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-CfP07-REG-01-15 Innovative Primary and Secondary Electrical Distribution Network for Regional A/C

Lead Organisation:

Blu Electronic Srl

Address:

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Italy

EU Contribution: €543,599

Partner Organisations:

Fundacion Tecnalia Research & Innovation

Address:

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20009 DONOSTIA/SAN SEBASTIAN (GIPUZKOA)
Spain

Organisation Website:

<http://www.tecnalia.com>

EU Contribution: €319,375

The University Of Nottingham

Address:

University Park
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United Kingdom

EU Contribution: €245,999

Asociacion Centro Tecnologico Ceit

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20018 SAN SEBASTIAN
Spain

Organisation Website:

<http://www.ceit.es>

EU Contribution: €290,065

Technologies:

Aircraft design and manufacturing
Energy management model

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Transport electrification, Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other