

PROJECT

ORCHESTRA

Optimised Electric Network Architectures and Systems for More-Electric Aircraft

Funding: European (Horizon 2020)

Duration: Feb 2021 - Jan 2025

Status: Ongoing

Total project cost: €4,829,335

EU contribution: €4,829,335



Call for proposal: H2020-MG-2020-SingleStage-INEA

[CORDIS RCN : 232473](#)

Background & policy context:

ORCHESTRA combines:

- The leading University in Europe (UNOTT) on Aircraft electrification;
- Europe's leading Regional Aircraft Company (LDO VEL);
- The world largest provider of aircraft Systems (SAF & SEP);
- Leading experts on Thermal Management (CIRA&FhG) and Electrical Energy Storage Technologies (AIT);
- Innovative businesses specialising in technologies for Aircraft Electrification (SKLE, BSIM &AER); and
- Leading experts with decades of experience in aircraft certification (VR-ASP),

to deliver the "Technological Building Blocks" (TBB) that will form the foundation for the development of Much More Electric Aircraft (M2EA).

Objectives:

The key quantitative objectives achieved by ORCHESTRA will include overall EPS weight reduction by 25% and improvement in EPS efficiency by 10% compared to the current state-of-the-art.

The ORCHESTRA consortium will investigate all the relevant technical aspects including electrical architectures, machines, power management and control, harness solutions, thermal management, electric energy storage, experimental and virtual testing, as well as systems integration, to develop and deliver a holistic framework of innovative modular scalable "building blocks" that incorporate emerging technologies and breakthrough design ideas.

Each partner within the Consortium has been carefully selected due to their world-leading expertise in the technology areas. The involvement of VR-ASP, with decades of experience in aircraft certification, is noteworthy to ensure that TBBs delivered through ORCHESTRA will be designed with a clear path to certification from the outset. This will be complemented through the involvement of EASA on the Industrial Advisory Board.

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: MG-3-4-2020 Innovative electric network architectures and systems, optimising global energy, electrical power, data and communication for aviation

Lead Organisation:

The University Of Nottingham**Address:**

University Park
Nottingham
NG7 2RD
United Kingdom

EU Contribution: €1,123,276

Partner Organisations:**Ait Austrian Institute Of Technology Gmbh****Address:**

GIEFINGGASSE 4
1210 WIEN
Austria

Organisation Website:

<http://www.ait.ac.at/>

EU Contribution: €378,054

Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.**Address:**

HANSASTRASSE 27C
80686 MUNCHEN
Germany

Organisation Website:

<http://www.fraunhofer.de>

EU Contribution: €393,750

Aeromechs SRL**Address:**

VIA PARENTE 10
81031 AVERSA CE
Italy

EU Contribution: €369,500

Safran Sa**Address:**

2 Boulevard Du Gal Martial Valin
75015 Paris
France

Organisation Website:

<http://www.safran.com>

EU Contribution: €474,048

Skylife Engineering Sl**Address:**

CALLE AMERICO VESPUCIO N5, BLOQUE 1, LOCAL A 8-12
41092 SEVILLA
Spain

EU Contribution: €298,125

Vr Aviation Safety Partnership Ltd

Address:

120 STANTON ROAD
NOTTINGHAM
NG10 5EP
United Kingdom

EU Contribution: €48,750

C.i.r.a. Centro Italiano Ricerche Aerospaziali Scpa

Address:

VIA MAIORISE
81043 CAPUA
Italy

Organisation Website:

<http://www.cira.it>

EU Contribution: €372,724

Bsim Srl

Address:

CORSO GALILEO FERRARIS 16
10121 TORINO
Italy

EU Contribution: €281,870

Leonardo - Societa Per Azioni

Address:

Piazza Monte Grappa 4
195 Roma
Italy

EU Contribution: €683,691

Safran Electrical & Power

Address:

1 Rue Louis Bleriot Parc Dactivite Andromede
31702 Blagnac
France

EU Contribution: €405,548

Technologies:

Aircraft design and manufacturing
Electric aircraft

Development phase: Research/Invention

STRIA Roadmaps: Transport electrification, Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Societal/Economic issues, Environmental/Emissions aspects,

Transport policies: Safety/Security

Geo-spatial type: Other