

PROJECT

U-HARWARD

Ultra High Aspect Ratio Wing Advanced Research and Designs

Funding: European (Horizon 2020)

Duration: May 2020 - Oct 2023

Status: Ongoing

Total project cost: €2,510,939

EU contribution: €2,510,939



Call for proposal: H2020-CS2-CFP10-2019-01

[CORDIS RCN : 227648](#)

Objectives:

U-HARWARD will consider the use of innovative aerodynamic and aeroelastic designs in a multi-fidelity multi-disciplinary optimal design approach to facilitate the development of Ultra-High aspect ratio wings for large transport aircraft.

A conceptual design study, building on the current state of the art, will perform trade-off studies to determine the potential gains of different wing configurations and loads alleviation concepts in terms of aerodynamics, weight, noise, fuel-burn and range.

Scaled model wind tunnel tests will be used to validate parametric variations in the aerodynamic and acoustic characteristics. Starting from a reference aircraft, the preliminary design of the best candidate configuration will be completed and the estimated gains validated using high fidelity tools and a larger scale aeroelastic test.

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:

Politecnico Di Milano

Address:

Piazza Leonardo Da Vinci 32
20133 Milano
Italy

Organisation Website:

<http://www.polimi.it>

EU Contribution: €581,250

Partner Organisations:

Ibk-Innovation Gmbh & Co. Kg

Address:

BUTENDEICHSWEG 2

21129 HAMBURG
Germany

Organisation Website:

<http://www.ibk-innovation.de>

EU Contribution: €561,250

Institut Superieur De L'aeronautique Et De L'espace

Address:

AVENUE EDOUARD BELIN 10
31055 TOULOUSE
France

Organisation Website:

<http://www.isae.fr>

EU Contribution: €133,000

Siemens Industry Software Sas

Address:

150 AVENUE DE LA REPUBLIQUE IMMEUBLE LE DIAGONAL
92320 CHATILLON
France

Organisation Website:

<http://www.ugsplm.com>

EU Contribution: €322,500

Office National D'etudes Et De Recherches Aeronautiques

Address:

CHEMIN DE LA HUNIERE
91120 PALAISEAU
France

Organisation Website:

<http://www.onera.fr>

EU Contribution: €540,193

University Of Bristol

Address:

BEACON HOUSE QUEENS ROAD
BRISTOL
BS8 1QU
United Kingdom

Organisation Website:

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

EU Contribution: €372,746

Technologies:

Aircraft design and manufacturing
Improved aerodynamic design tools

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport
Environmental/Emissions aspects, Other

Transport policies: specified

Geo-spatial type: Other