

PROJECT

IVANHOE

Installed adVAnced Nacelle uHbr Optimisation and Evaluation

Funding: European (Horizon 2020)

Duration: Oct 2019 - Sep 2022

Status: Ongoing

Total project cost: €3,514,834

EU contribution: €3,514,834



Call for proposal: H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225382](#)

Objectives:

The introduction of UHBR engines poses new challenges on optimal nacelle design, both in geometry and in location. In response to the topic Cfp09 CS2-LPA-01-67, the IVANHOE project will address this challenge, resulting in a new multi-fidelity optimisation method, validated by advanced wind tunnel experiments. A consortium of an SME, an industry, an R&D institute and 3 universities with complementary skills will produce this result in close coordination with the topic manager in 36 months, asking for a grant of € 3 514 834.

Coordinator CTH will provide the design envelope and safeguard thrust/drag performance, HIT09 and UNIPD will jointly optimise a rapid design loop to down select options. TUB will validate the resulting design options with a high-fidelity CFD code, complemented by a high fidelity wind tunnel experiment of a Deharde powered nacelle model in DNW's High Speed Tunnel.

The project will advance the state of the art in nacelle design by smart use of various fidelity level aerodynamic modelling tools enabling fast iterations and down selection of nacelle geometries and locations. Wing/nacelle interference will be taken into account. This method will be validated by wind tunnel experiments with new and advanced wind tunnel model and measuring techniques.

The result of the nacelle optimisation for an UHBR installation on the Common Research Model will be delivered in full compliance with the call. Moreover, IVANHOE's will provide an improved design method, tools and facilities for use by the European aviation industry for future aircraft projects, unlocking the full potential of CO2 reduction of UHBR engines while increasing competitiveness by reducing costs for design and testing.

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-CS2-2018-Cfp09-LPA-01-67 - UHBR Installed Advanced Nacelle Optimisation and Evaluation Close Coupled to Wing

Lead Organisation:

Chalmers Tekniska Hoegskola Ab

Address:

-
41296 GOTHENBURG
Sweden

Organisation Website:

<http://www.chalmers.se>

EU Contribution: €469,069

Partner Organisations:

Deharde Gmbh

Address:

AM HAFEN 14A
26316 VAREL
Germany

Organisation Website:

<http://www.deharde.de>

EU Contribution: €736,003

Stichting Duits-Nederlandse Windtunnels

Address:

VOORSTERWEG 31
8316 PR Marknesse
Netherlands

Organisation Website:

<http://www.dnw.aero>

EU Contribution: €1,318,750

Universita Degli Studi Di Padova

Address:

Via 8 Febbraio 1848 2
35122 Padova
Italy

Organisation Website:

<http://www.unipd.it>

EU Contribution: €152,525

Technische Universitaet Braunschweig

Address:

Pockelsstrasse
38106 Braunschweig
Germany

Organisation Website:

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

EU Contribution: €383,438

Hit09 Srl

Address:

PIAZZETTA BETTIOL GIUSEPPE 15
35137 PADOVA PD
Italy

EU Contribution: €455,050

Technologies:

Aircraft design and manufacturing
Morphing engine nacelle

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other