

PROJECT

INVENTOR

INnoVative dEsign of iNstalled airframe componenTs for aircraft nOise Reduction

Funding: European (Horizon 2020)

Duration: May 2020 - Apr 2024

Status: Ongoing

Total project cost: €5,166,845

EU contribution: €4,990,595



Call for proposal: H2020-MG-2019-TwoStages

[CORDIS RCN : 227996](#)

Objectives:

Mitigating aircraft noise on both modern and future aircraft is a significant challenge for the EU considering the increase of air traffic and extension of urban areas together with the increasing public health concern. Aircraft noise results from the combination of engine noise, significantly reduced after decades of intensive research, and airframe noise, mostly generated by landing gears (LGs) and high-lift devices (HLDs). Strong integration constraints imposed by other considerations than acoustics and our limited knowledge of the complex flow physics mechanisms generating airframe noise have so far limited the development of noise reduction technologies (NRTs) on airframe components such as LGs and HLDs. Direct design of low-noise airframe components based on multi-disciplinary criteria (including acoustics), remains a challenge as well.

Therefore, the primary goal of INVENTOR is to better understand the physics of noise generated by LGs and HLDs thanks to intensive use of new, advanced numerical methods. The ultimate goal is to decrease the external noise from business jet and short-medium range transport aircraft through the development of innovative low-noise installed LG and HLD components as well as new promising NRTs, thus contributing to the achievement of the Flightpath 2050 goals pursued by ACARE SRIA on aviation noise. T

The main Key Performance Indicator in terms of noise reduction will be to lower far-field noise generated by installed LGs and HLDs at landing/approach by respectively 2-3 and 1dB(A). Considering an equal contribution of engine and airframe to noise, we aim to reach an overall gain of about 1 dB(A) on full aircraft extrapolation in approach certification conditions. INVENTOR, gathering 16 partners (RTOs, large industries, SMEs) from 7 EU countries with a budget of €5 M will significantly contribute to Europe's leadership in aircraft noise reduction and solutions; and increase the competitiveness of the European aviation industry.

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:

Office National D'etudes Et De Recherches Aerospatiales

Address:

CHEMIN DE LA HUNIERE
91120 PALAISEAU
France

Organisation Website:

<http://www.onera.fr>

EU Contribution: €844,406

Partner Organisations:**Stichting Nationaal Lucht En-Ruimtevaartlaboratorium****Address:**

Anthony Fokkerweg 2
1059CM AMSTERDAM
Netherlands

Organisation Website:

<http://www.nlr.nl>

EU Contribution: €182,013

The Provost, Fellows, Foundation Scholars & The Other Members Of Board Of The College Of The Holy & Undivided Trinity Of Queen Elizabeth Near Dublin**Address:**

College Green
2
DUBLIN
Ireland

Organisation Website:

<http://www.tcd.ie>

EU Contribution: €180,648

Safran Landing Systems**Address:**

7 RUE GENERAL VALERIE ANDRE INOVEL PARC SUD
78140 VELIZY-VILLACOUBLAY
France

Organisation Website:

<http://www.safranmbd.com>

EU Contribution: €291,620

Rheinisch-Westfaelische Technische Hochschule Aachen**Address:**

Templergraben
52062 Aachen
Germany

Organisation Website:

<http://www.rwth-aachen.de>

EU Contribution: €180,136

Airbus Operations Sas**Address:**

ROUTE DE BAYONNE 316
31060 TOULOUSE
France

Organisation Website:

<http://www.airbus.com>

EU Contribution: €445,500

Deutsches Zentrum Fr Luft Und Raumfahrt E.v**Address:**

Linder Hoehe
51147 KOELN
Germany

Organisation Website:

<http://www.dlr.de>

EU Contribution: €943,135

Centre Europeen De Recherche Et De Formation Avancee En Calcul Scientifique**Address:**

Avenue Gaspard Coriolis 42
31057 Toulouse
France

Organisation Website:

<http://www.cerfacs.fr>

EU Contribution: €180,000

Dassault Aviation**Address:**

9, Rond-Point des Champs-Élysées - Marcel Dassault
75008 PARIS
France

Organisation Website:

<http://www.dassault-aviation.com>

EU Contribution: €583,294

University Of Southampton**Address:**

Highfield
Southampton
SO17 1BJ
United Kingdom

Organisation Website:

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

EU Contribution: €179,629

University Of Bristol**Address:**

BEACON HOUSE QUEENS ROAD
BRISTOL
BS8 1QU
United Kingdom

Organisation Website:

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

EU Contribution: €182,896

Institut Von Karman De Dynamique Des Fluides

Address:

Chaussee De Waterloo 72
1640 Rhode Saint Genese
Belgium

EU Contribution: €181,250

Erdyn Consultants

Address:

Rue Vergniaud 23
75013 Paris
France

EU Contribution: €133,750

Technische Universiteit Delft

Address:

STEVINWEG 1
2628 CN DELFT
Netherlands

Organisation Website:

<http://www.tudelft.nl>

EU Contribution: €181,309

Upstream Cfd Gmbh

Address:

BISMARCKSTR 10-12
10625 BERLIN
Germany

EU Contribution: €120,000

Chalmers Tekniska Hoegskola Ab

Address:

-
41296 GOTHENBURG
Sweden

Organisation Website:

<http://www.chalmers.se>

EU Contribution: €181,010

Technologies:

Aircraft noise reduction at source"

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Societal/Economic issues, Environmental/Emissions aspects, Other

Transport policies: specified

Geo-spatial type: Other