

PROJECT

DJINN

Decrease Jet-Installation Noise

Funding: European (Horizon 2020)

Duration: Jun 2020 - May 2023

Status: Ongoing

Total project cost: €4,995,210

EU contribution: €4,995,210



Call for proposal: H2020-MG-2019-TwoStages

[CORDIS RCN : 227997](https://cordis.rcn.europa.eu/227997)

Objectives:

With the aim of reducing the environmental impact of noise caused by aircraft during take-off, the prediction and mitigation of jet-airframe interaction noise sources remain significant challenges for closely integrated propulsion-airframe architectures.

The ambition of the DJINN project is therefore to develop a new generation of reliable computational fluid dynamics (CFD) methods, most of them belonging to the field of hybrid methods, for assessing promising noise-reduction technologies, with support and validation from reduced-scale experiments. This key ambition is tied to the provision of advanced tools for coupled aerodynamics-aeroacoustics to enable design optimisation in future industrial environments and to reach a new level of noise reduction through a highly collaborative effort.

The DJINN project denotes a breakthrough in designing quieter and greener aircraft through both improved CFD methods and better physical understanding. The ability to understand, model and predict jet-airframe noise is the key to conceive efficient noise reduction technologies and optimise future industrial designs. Important noise reductions of future integrated propulsion aircraft are foreseen with 5 dB reduction of the jet-airframe interaction noise peak level at low frequencies. This objective cannot be reached by investigating the engine/nozzle and airframe systems separately. Improved CFD methods for multi-physics modelling utilizing high-performance computing are expected to reduce design times and costs by around 25% compared to large-scale testing.

The DJINN project will make a major impact on economic and environmental factors and secure the leadership of the European aeronautics industry in the highly competitive global market.

The consortium is formed by major industrial aeronautical companies, well-known research organisations and academic groups, with an SME acting as the coordinator.

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:

Cfd Software - Entwicklungs- Und Forschungsgesellschaft Mbh

Address:

Wolzogenstrasse 4
14163 Berlin
Germany

EU Contribution: €594,285

Partner Organisations:

Imperial College Of Science Technology And Medicine

Address:

Exhibition Road, South Kensington
LONDON
SW7 2AZ
United Kingdom

Organisation Website:

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

EU Contribution: €339,500

Safran Aircraft Engines

Address:

2 Bvd Du General Martial-Valin
75724 Paris
France

Organisation Website:

<http://www.safran-aircraft-engines.com>

EU Contribution: €290,765

Rolls-Royce Deutschland Ltd & Co Kg

Address:

Eschenweg 11
15827 BLANKENFELDE-MAHLOW
Germany

Organisation Website:

<http://www.rolls-royce.com/deutschland>

EU Contribution: €334,650

Airbus Operations Sas

Address:

ROUTE DE BAYONNE 316
31060 TOULOUSE
France

Organisation Website:

<http://www.airbus.com>

EU Contribution: €387,344

Office National D'etudes Et De Recherches Aerospatiales

Address:

CHEMIN DE LA HUNIERE
91120 PALAISEAU
France

Organisation Website:

<http://www.onera.fr>

EU Contribution: €436,500

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

Linder Hoehe
51147 KOELN
Germany

Organisation Website:

<http://www.dlr.de>

EU Contribution: €836,384

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: €320,059

Dassault Aviation**Address:**

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

Organisation Website:

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

EU Contribution: €339,500

University Of Southampton**Address:**

Highfield
Southampton
SO17 1BJ
United Kingdom

Organisation Website:

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

EU Contribution: €305,500

Institut Von Karman De Dynamique Des Fluides**Address:**

Chaussee De Waterloo 72
1640 Rhode Saint Genese
Belgium

EU Contribution: €287,278

Queen Mary University Of London**Address:**

327 MILE END ROAD
LONDON

E1 4NS
United Kingdom

Organisation Website:

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

EU Contribution: €213,400

Centre National De La Recherche Scientifique

Address:

3 rue Michel-Ange
75794 PARIS
France

Organisation Website:

<http://www.cnrs.fr>

EU Contribution: €310,046

Technologies:

Noise testing, modelling and reduction
Aircraft noise reduction at source

Development phase: Research/Invention

STRIA Roadmaps: Other specified

Transport mode: Air transport

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

Transport policies: specified

Geo-spatial type: Other