ASPIRE

Aerodynamic and acoustical for high-by-Pass ratio turbofan integration

**Funding:** European (Horizon 2020)

**Duration:** Jan 2016 - Sep 2018

**Status:** Complete

**Total project cost:** €3,406,735

**EU contribution:** €2,908,234

**Call for proposal:** H2020-CS2-CFP01-2014-01

**CORDIS RCN:** 199347

**Objectives:**

The ASPIRE proposal, gathering DLR, NLR, ONERA and TsAGI, responds to the topic JTI-CS2-2014-CFP01-AIR-01-01 “Aerodynamic and acoustic capabilities developments for close coupling, high by-pass ration turbofan Aircraft integration”. The comprehensive experience of the partners working on innovative engine aircraft integration concepts both individually and in previous collaborative efforts motivated their common application.

The high level objectives of the ASPIRE proposal lead to improve and validate numerical and experimental capabilities to assess the aerodynamic and acoustic performance of innovative aircraft configurations equipped with ultra-high by-pass ratio turbofan (UHBR). For that purpose, the numerical activities will be performed on a reference configuration partially designed by the consortium (generic fan/OGV combination) and by the lead industrial partner (nacelle, pylon, wing). Cross-comparison of codes are foreseen in specific tasks to improve the reliability of tools and better understand the tremendous interactions between airframe and UHBR engines. The experimental activities aim at improving the efficiency of acoustic means during wind-tunnel and flight tests.

The ASPIRE total grant request to EC is 2 908 235 € for DLR, NLR and ONERA, the activities conducted by TsAGI being funded outside (national grant). The project will be conducted over 2 years in close alignment with the overall LPA-IADP and AIRFRAME-ITD needs and in agreement with the concerned IADP & ITD industrial coordinators and further selected and involved core partners and/or partners. The ASPIRE proposal will also be conducted in manner consistent with the other research activities performed in the AIRFRAME-ITD and the LPA-IADP.

The integration of experimental and numerical capabilities will significantly contribute to ACARE SRIA 2, in terms of the greening of air transport, improving industrial leadership, and bringing enhanced mobility.

**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 Aérospatiales

**Address:**

29, avenue de la Division Leclerc
BP72 CHÂTILLON CEDEX
France
Organisation Website: http://www.onera.fr
EU Contribution: €1,434,531

Partner Organisations:

Stichting Centrum Voor De Ontwikkeling Van Transport En Logistiek In Europa
Address:
Van Nelleweg 1
3044 BC Rotterdam
Netherlands
Organisation Website: http://www.cetle.org
EU Contribution: €463,710

Deutsches Zentrum Fr Luft Und Raumfahrt E.v
Address:
Linder Hhe
12489 KLN
Germany
Organisation Website: http://www.dlr.de
EU Contribution: €1,009,993

Federal State Unitary Enterprise Aerohydrodynamic Institute
Address:
1, Zhykovsky str.
ZHUKOVSKY, MOSCOW REG
140180
Russia
Organisation Website: http://www.tsagi.ru
EU Contribution: €0

Technologies:
Aircraft propulsion
Ultra-high bypass ratio jet engine
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