PROJECT

INAFLOWT

INnovative Actuation Concepts for Engine/Pylon/Wing Separation FLOw Control (Design, Build and Wind Tunnel Test)

Funding: European (Horizon 2020)

Duration: Jun 2017 - Sep 2020

Status: Complete

Total project cost: €1,146,750

EU contribution: €700,000

Call for proposal: H2020-CS2-CFP04-2016-02

CORDIS RCN : 210820

Objectives:

The objective of the INAFLOWT project is to use combinations of existing active flow control (AFC) concepts to generate a major advance in AFC aerodynamic efficiency and reliability. Steady suction in combination with oscillatory blowing will be combined using arrays of the no-moving parts SaOB actuator. Active boundary layer separation control concepts will be studied using numerical simulations, as well as with bench-top, simplified geometry and small scale wind tunnel testing. The most promising concept will be tested, integrated as real-scale prototypes in a large wind tunnel model representative of the ultra-high bypass ratio (UHBR) engine/pylon/wing/high-lift system configuration, already tested within AFLONEXT, at realistic Reynolds number, to prove results in near industrial environment.

The INAFLOWT consortium consist of known experts with vast experience and extensive excellence record of collaborations in the areas of AFC, high-lift aerodynamic, wind tunnel testing and CFD simulations. These capabilities and features will guarantee the successful realization of the ambitious goals of the INAFLOWT project and will progress the proposed AFC configuration beyond the State-of-the-Art. The outputs are ambitious and innovative and will pave the way to operational use of UHBR engines in commercial aircraft which will provide significant operational benefits of future European aviation products.

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:

Tel Aviv University

Address:
Ramat Aviv
Tel Aviv 69978
Israel

EU Contribution: €360,000

Partner Organisations:

Israel Aerospace Industries Ltd.

Address:
Ben Gurion International Airport
Lod 70100
Israel

Organisation Website:
http://www.iai.co.il

EU Contribution: €80,000

Federal State Unitary Enterprise Aerohydrodynamic Institute

Address:
1, Zhykovsky str.
ZHUKOVSKY, MOSCOW REG
140180
Russia

Organisation Website:
http://www.tsagi.ru

EU Contribution: €0

Vyzkumny A Zkuebni Letecky Ustav, A.s.

Address:
Beranovych 130
19905 PRAHA - LETNANY
Czech Republic

Organisation Website:
http://www.vzlu.cz

EU Contribution: €130,000

Universitaet Paderborn

Address:
Warburger Strasse 100
33098 Paderborn
Germany

Organisation Website:
http://www.uni-paderborn.de

EU Contribution: €130,000

Technologies:

Aircraft propulsion
Ultra-high bypass ratio jet engine

Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other