

PROJECT

EULOSAM II

European low speed aircraft model at high Reynolds II

Funding: European (Horizon 2020)

Duration: Oct 2018 - Jan 2021

Status: Complete

Total project cost: €1,383,000

EU contribution: €968,100



Call for proposal: H2020-CS2-CFP07-2017-02

[CORDIS RCN : 218768](#)

Background & policy context:

In laminar flow investigations, several parameters related to manufacturing quality of the aircraft wind tunnel model have to be considered since they can strongly affect the laminar-turbulent transition location. Model shape, steps and gaps, waviness and surface roughness of the model, are key parameters for the quality of laminar flow investigation.

Even if this effect is not so amply described in literature where few empirical and inaccurate correlations between the roughness height and the transition position can be found, experimental results have shown that distributed roughness strongly affects the laminar-turbulent transition. This phenomenon can be managed through a very good mechanical design able to avoid possible step and gap coming from the integration of different parts composing the model and taking care, in the manufacturing phase, of the waviness and of the surface refinement, both being challenging tasks. Last, but not least, the number of pressure sensors and their integration in the leading region (necessary to correctly capture the stagnation region) requires special and innovative solutions to avoid laminar flow contamination.

Objectives:

Fully in line with JTI-CS2-2017-CfP07-AIR-01-30, the overall objective of the project is to support the development and assessment of natural laminar aircraft integrating innovative aerodynamic control surfaces, and high lift technologies. The EULOSAM II project focuses on the modification and completion of a WT-model that allows analysing of the aerodynamic performance of innovative control surfaces and high-lift devices. Model main size is roughly 2.25 m in span for an area of around 1.2 m² with the Horizontal Tail Plane (HTP) of 0.8 m in span for an area of 0.26 m². The WT model has the high aspect ratio of around 11 and a low sweep angle of 20°.

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-CS2-2017-CfP07-AIR-01-30 Finalize and improve the manufacturing of the model of a laminar wing configuration bizjet (LSBJ)

Lead Organisation:

Nhoe - Societa' A Responsabilita' Limitata

Address:

VIA SANGRO 5
00040 POMEZIA
Italy

Organisation Website:

<http://www.nhoe.it>

EU Contribution: €189,875

Partner Organisations:**Ibk Ingenieurbuero Dr Kretzschmar****Address:**

Rehdorfer Str. 4
90431 NUREMBERG
Germany

Organisation Website:

<http://www.ibk-aero.com>

EU Contribution: €170,100

Industria Lavorazioni Meccaniche Srl**Address:**

VIA ANGELA VACCHI 20/26
04011 APRILLIA LT
Italy

Organisation Website:

<http://www.ilm-srl.com>

EU Contribution: €608,125

Technologies:

Aircraft design and manufacturing
Active flow control and interrelations with Reynolds stress

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other