PROJECT

BinCola

Evaluation of the Benefits of innovative Concepts of laminar nacelle and HTP installed on a business jet configuration

Funding: European (Horizon 2020)

Duration: Nov 2018 - Feb 2020

Status: Complete

Total project cost: €1,555,576

EU contribution: €1,555,576

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

CORDIS RCN : 218818

Objectives:

The global target of the project “BinCola” is the experimental verification of benefits coming along with the replacement of classically designed nacelles and HTP by enhanced components specifically developed for natural laminar flow (NLF) development. To ensure a realistic evaluation and assessment of benefits relevant wind tunnel tests will be performed at flight Mach and Reynolds numbers.

An existing basic model of a business jet configuration will be made available by the Topic Manager and serve as the reference configuration. He is also responsible for the provision of the laminar design of the components to be replaced while their detailed design, manufacturing and assembly are part of this proposal.

Methodology:

Transition monitoring is generally performed at cryogenic conditions by using temperature sensitive paint (TSP). To visualize laminar and turbulent areas a positive or negative temperature step has to be performed in a wind tunnel violating by nature the consistency of all flow parameters. New developments at ETW and DLR offer to overcome this deficit by innovative surface heating concepts which are proposed here for application. This approach will make temperature steps superfluous; hence, allow taking images during continuous incidence polars, the standard testing sequence in ETW

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-01-31 Evaluation of the benefits of a laminar nacelle and a laminar HTTP installed on a bizjet configuration

Lead Organisation:

European Transonic Windtunnel Gmbh

Address:
ERNST MACH STRASSE
51147 KOLN
Germany

Organisation Website:
http://www.etw.de

EU Contribution: €1,217,563

Partner Organisations:

Deharde Gmbh

Address:
AM HAFEN 14A
26316 VAREL
Germany

Organisation Website:
http://www.deharde.de

EU Contribution: €238,014

Laserline Gesellschaft Fur Entwicklung Und Vertrieb Von Diodenlasern Gmbh

Address:
FRAUNHOFER STRASSE
FRAUNHOFER STRASSE MULHEIM KARLICH
Germany

EU Contribution: €100,000

Technologies:

Aircraft design and manufacturing
Reduced engine nacelle drag

Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing, Infrastructure

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other