

PROJECT

SWING

Sonaca WING flap process Development

Funding: European (Horizon 2020)

Duration: Oct 2019 - Sep 2022

Status: Ongoing

Total project cost: €1,170,468

EU contribution: €941,536



Call for proposal: H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225384](#)

Objectives:

SWING project aims to develop a material/process/design solution for a shielding flap for hybrid laminar flow control on wings of large passenger aircraft. The project target is to develop an In Situ Consolidation thermoplastic process to outperform existing process in terms of structural and economic performance.

Indeed, Hybrid Laminar Flow Concept will lead to more complexity in the structure of the wings and their accessories, and therefore an efficient process to manufacture flaps are needed to enable implementation of such system with an acceptable cost.

From a technical point of view, several challenges stay on the development road:

- Selection of a thermoplastic composite pre-impregnated tape that fulfil both the design, the process and the economic requirement.
- Process parameter control strategy to guarantee in situ consolidation of composite with the nominal performance of the material for the targeted complex geometry
- Efficiency of tape laying to match with the economic equation. Efficiency includes the maximum laying speed and the gestion of start and stop (loss of time, scraps...)
- Assembly solution to create a closed wing section that include the ribs and possibly other reinforcement (for mechanical fastening, at trailing edge....).

SWING aims at overcoming these challenges with significative achievement to allow the integration of the thermoplastic flap in demonstrator wings of hybrid laminar flow control. The Krueger flap develop inside the project will impact the CO2 emissions of the Large Passenger Aircraft demonstrator through two ways: by reducing the weight of the flap thus the fuel consumption and by allowing aerodynamics optimization.

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-CS2-2018-CfP09-LPA-01-66 - Shielding/High-lift composite thermoplastic flap manufacturing, tool design and manufacturing & process definition

Lead Organisation:

Centre Technique Des Industries Mecaniques

Address:

AVENUE FELIX LOUAT 52
60304 SENLIS CEDEX

France

Organisation Website:

<http://www.cetim.fr>

EU Contribution: €441,689

Partner Organisations:

Loiretech Holding Sas

Address:

ZAC DE LA VERDIERE
44470 MAUVES SUR LOIRE
France

Organisation Website:

<http://www.loiretech.fr>

EU Contribution: €271,367

Afpt Gmbh

Address:

TRINKBORNSTRASSE 10
56281 DORTH
Germany

Organisation Website:

<http://www.afpt.de>

EU Contribution: €228,480

Technologies:

Aircraft design and manufacturing
Hybrid wing blended body

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