

PROJECT

FLEX

Flexible RTM tool with automated distortion correction

Funding: European (Horizon 2020)

Duration: Sep 2018 - Feb 2021

Status: Complete

Total project cost: €1,399,758

EU contribution: €1,399,758



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

[CORDIS RCN : 218288](#)

Objectives:

The FLEX proposal answers to the scope of JTI-CS2-2017-CfP07-AIR-01-33 call on the topic “Flexible RTM tool concept for composites with spring back adjustments capabilities”. The high-level challenge FLEX project will be addressing is to develop the next generation RTM tooling that can be easily adjusted to account for part spring back effect. The main aim of the project will be to design an RTM tooling system that will feature decreased lead times and increased productivity. It will feature a novel distortion compensation capability based on actively changing the mould shape.

The process is driven by accurate modelling of the spring back effects thanks to simulation of the phenomenon by analytical surrogate models. The mould will feature automation procedures in every production step. Areas of investigation will be the preform/fibre placement, the resin injection process and mould cleaning. It will also feature an advanced monitoring system that will offer unparalleled quality assurance. The technologies will be initially demonstrated on a small-scale mould that will feature all complexities of a real production piece. The final tool will be built according to the specification of the Topic Manager, verified for compliance and functionality and delivered to its premises.

Overall, FLEX will advance its technologies from TRL3 up to TRL5 and potentially reach TRL6. Within the project, the integrated system (tooling and technologies) will be developed and validated in relevant environment, thus TRL5 will be achieved upon its completion. The Call requires, the delivery of the demonstrator at the Topic Manager premises, so that TR6 will be achieved post- project within the Airframe ITD.

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-01-33 Flexible RTM tool concept for composites with spring back adjustments capabilities

Lead Organisation:

Twì Limited

Address:

Granta Park Great Abington
Cambridge
CB1 6AL
United Kingdom

EU Contribution: €148,750

Partner Organisations:

Loiretech Holding Sas

Address:

ZAC DE LA VERDIERE
44470 MAUVES SUR LOIRE
France

Organisation Website:

<http://www.loiretech.fr>

EU Contribution: €641,413

Engineering Technology Solutions Ee

Address:

ETHNARCHOU MAKARIOU 45
15343 AGIA PARASKEVI
Greece

EU Contribution: €178,250

Brunel University

Address:

Kingston Lane
UXBRIDGE
UB83PH
United Kingdom

EU Contribution: €315,000

Cranfield Aerospace Limited

Address:

Cranfield University Campus Hangar 2
Cranfield
MK43 0AL
United Kingdom

Organisation Website:

<http://www.cranfield.ac.uk>

EU Contribution: €116,345

Technologies:

Composite materials
Thermoplastic-based composite materials

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