

PROJECT

DEFLECT

DEvelopment of Functionalizable materiaLs for Electrical CabineTs

Funding: European (Horizon 2020)

Duration: Feb 2018 - Jul 2020

Status: Complete

Total project cost: €599,660

EU contribution: €599,660



Call for proposal: H2020-CS2-CFP06-2017-01

[CORDIS RCN : 213590](#)

Background & policy context:

To meet its customers' requirements and improve its competitiveness, the European aerospace industry needs to design lightweight, cheaper and less pollutant aircrafts to obtain a decisive competitive advantage.

Objectives:

The objective of the present project is the functionalization of composite materials for the manufacturing of electrical cabinets to be used for hosting and protecting on-board electrical and avionic devices. This functionalization will be performed implementing electrically conductive elements in the composite laminate, either internally or surface integrated.

The goal is the demonstration that lightweight composite materials are an affordable alternative for the manufacturing of electrical cabinets. Studies performed in the line of electronics enclosure indicate there is a tendency for the near future to replace the current aluminium electronics housings with lightweight composite housings. Modern structures built in composite technology are able to provide important mass savings compared to conventional designs. In addition, composite materials are 'functionalizable'. That means that during the manufacturing process, foreign materials/elements can be embedded inside the laminate, providing an extra function to the structural role itself, further reducing mass and complexity of the system.

The composite solution adopted will allow a 30% weight reduction compared to its aluminium counterpart, at cost equity and will prevent the need of hazardous surface treatments (e.g. chromic acid anodising and alodine) which use the harmful Cr6+. If a composite reference material is considered, the development proposed in DEFLECT project will allow reducing the length of the wiring and even its insulation, reducing the mass of the harness required. In addition, cost savings related to easier and safer assembly steps (less time required) will also be obtained.

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:

Fundacion Tecnalia Research & Innovation

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EU Contribution: €344,785

Partner Organisations:

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EU Contribution: €254,875

Technologies:

Composite materials

Composite materials for the manufacturing of electrical cabinets

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport
Societal/Economic issues, Environmental/Emissions

Transport policies: aspects

Geo-spatial type: Other