

ECO-CLIP will validate the feasibility of manufacturing high added-value structural aircraft parts using recycled materials

- ECO-CLIP will substitute current clips and brackets materials and manufacturing methods for near-net-shape cost efficient and easy to implement processes such as injection moulding and 3D printing of thermoplastic composites.
- Framed within the Clean Sky 2 Programme, the consortium is made up by AIMEN, leader of the project, and AITIIP Technology Centre.

Wednesday, 7th of October 2020.- AIMEN Technology Centre leads the **ECO-CLIP** project, title “*Eco-friendly frame clips and system brackets for a fuselage demonstrator*”, which aims to demonstrate the technical, environmental and economic feasibility of manufacturing high added-value structural aircraft parts (frame clips and system brackets) using recycled carbon fibre reinforced high-performance thermoplastics (CF/LMPAEK) obtained from factory waste. The initiative, funding by the European Commission with 0.5 million euros, is framed within the **Clean Sky 2 Programme**.

To achieve this objective, ECO-CLIP will substitute current clips and brackets manufacturing methods for near-net-shape cost efficient and easy to implement processes such as injection moulding and 3D printing. Moreover, ECO-CLIP will develop a specific **welding procedure** for joining the developed parts to the aircraft fuselage, avoiding the need of fasteners which will allow not only economical cost reductions but also will reduce its environmental impact.

In this way, ECO-CLIP will contribute to the **aerospace industry** with the benefits of thermoplastic composites used for lower half of MFFD (Multifunctional Fuselage Demonstrator) development in Clean Sky Programme.

Main innovations

ECO-CLIP project will contribute to the Clean Sky 2 objectives with an **in-depth study of the behaviour of new CF/LMPAEK recycled composites**, the definition of a manufacturing process with reduced energy consumption and the validation of the proposed methodology from an environmental and economical point of view. ECO-CLIP will also demonstrate the feasibility for the industrial implementation of the proposed materials and the associated recycling, manufacturing and joining technologies.

The project results will be demonstrated through the implementation of developed frame clips and system brackets in a thermoplastic composite fuselage (MFFD – Multifunctional Fuselage

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Demonstrator, included within Large Passenger Aircraft (LPA) platform 2 defined and developed by Clean Sky JU).

Consortium

The consortium is made up by AIMEN, as coordinator of the project, and AITIIP, a Technology Centre located in Zaragoza. For ECO-CLIP, AITIIP brings its wide experience in design and engineering of plastic products, mechanical manufacturing of in-house designed moulds and plastic transformation technologies to achieve the project objectives.

AIMEN will develop mainly the new materials based on recycled composites obtained from factory waste, thus the recycling process too, as well as will do the validation of the new parts manufactured by 3D printing, and the development and validation of the ultrasonic welding procedure to join the new developed parts to the fuselage structure.

ECO-CLIP is a CS2 funded project and that this has been initiated as part of the CS2 funded project STUNNING WP2.1.5 of LPA led by GKN-Fokker.

Details

Title: Eco-friendly frame clips and system brackets for a fuselage demonstrator

Partners: 2

Countries: 1

EU Funding: 0.5 M€

Start Date: 01/05/2020

Project Duration: 30 months

Call: H2020-CS2-CFP10-2019-01 – Type of action: CS2-IA

Topic Manager: GKN-Fokker

Project Consortium:



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