

PROJECT

ReINTEGRA

Innovative End of Life procedures for REcycling INTEGRAL welded Al-Li Aerostructures

Funding: European (Horizon 2020)

Duration: Jul 2020 - Apr 2023

Status: Ongoing

Total project cost: €349,863

EU contribution: €349,863



Call for proposal: H2020-CS2-CFP10-2019-01

[CORDIS RCN : 229410](#)

Objectives:

The REINTEGRA Project focuses on development of dismantling and recycling procedures for integral welded panels, that are under development for new lightweight and cost-effective aircraft structures within the Eco-Design for Airframe (EDA) activity in the Clean Sky programme. This project will investigate different cutting strategies, ranging from cutting only for size reduction to full separation of all materials, and determine their influence on recyclability of 3rd generation of Al-Li alloys.

Furthermore, the need to eliminate primer and topcoats and different decoating methods will be investigated. The separated metallic fractions will be processed in a pilot melting facility and the produced metallic alloys characterised in order to establish a ranking in terms of costs, environmental impact and effectivity, that allows to select the best option for recycling Laser Beam Welded (LBW) and Friction Stir Welded (FSW) panels.

Also, a recycling compatibility tool (software) will be developed to determine compatibility of different Al-Li alloys, filler material and coatings. First, the theoretical composition of mixed materials per weld length will be calculated and then, this composition will be corrected with experimental data from remelting tests regarding element fading/enrichment. The results will be compared with commercial alloys and the recycling compatibility with primary alloys estimated. The aim is to valorize as much as possible of the valuable alloying elements.

The proposed new procedures for dismantling and recycling will be tested both, at coupon level and at live panel dismantling experiment, in which materials will be identified, sorted and pre-treated. The separated metallic fractions will be processed in a pilot melting facility and the produced metallic alloys characterised. Materials and energy flows, emissions and waste generation will be inventoried during the new End of Live process tested and provided to TM for the Life Cycle Assessment (LCA)

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 Azterlan

Address:

ALIENDALDE 6
48200 DURANGO
Spain

EU Contribution: €231,100

Partner Organisations:

Societe Nationale De Construction Aerospatiale Sonaca Sa

Address:

Route Nationale Cinq
6041 Gosselies
Belgium

Organisation Website:

<http://www.sonaca.com>

EU Contribution: €40,188

Fundacion Cidetec

Address:

PASEO MIRAMON 196 PARQUE TECNOLOGICO DE MIRAMON
20014 SAN SEBASTIAN
Spain

Organisation Website:

<http://www.cidetec.es>

EU Contribution: €78,575

Technologies:

Life cycle analysis
End of life recycling technologies

Development phase: Research/Invention

STRIA Roadmaps: Other specified

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other