

PROJECT

AMTRAS

Adaptive Multifunctional Test Rigs for Aeronautical Structures

Funding: European (Horizon 2020)

Duration: Jan 2017 - Oct 2020

Status: Complete

Total project cost: €349,375

EU contribution: €349,375



Call for proposal: H2020-CS2-CFP03-2016-01

[CORDIS RCN : 207253](#)

Objectives:

CleanSky2 has addressed the development of new aircraft concepts and architectures including new materials and manufacturing. In this respect, Adaptive Multifunctional Test Rigs for Aeronautical Structures (AMTRAS project) will contribute to the CleanSky2 objectives with the development of innovative multifunctional Test Rigs, with high performance instrumentation and multishape capability ready to test structural behaviour of new materials (panels) and full-scale demonstrators (Tail unit)

To achieve flexibility with multiaxiality and asynchronous loading conditions, AMTRAS will be built by:

- A flexible parallel kinematics 6-DOF actuator and the multishape fixture
- Machine Vision based Non-contact deformation monitoring and measurement system
- Non-Destructive Testing based on IR Thermography for the detection of structural defects

The flexibility and accuracy provided by AMTRAS Test Rigs will contribute to time-to-market minimisation, reducing the time span from concept to validated design. This is in line with the topic JTI-CS2-2016-CPF03-AIR-02-22 since preparation and assembly of different multifunctional testing benches will no longer be necessary.

In addition, AMTRAS contributes to one of the targeted achievements defined in Challenge 2 "Maintaining and extending industrial leadership" FlightPath 2050 Goals in the Strategic Research & Innovation Agenda (SRIA) of ACARE (Advisory Council for Aviation Research and Innovation in Europe). According to the SRIA, innovation in aviation is complex, capital intensive and takes time; typically, 15 years can elapse between the generation of a concept and technology being fully developed for a specific application on the next generation of air vehicles. However, market demands shorter cycles of new technology integration, therefore demanding greater efficiency in processes (design, test, validation, certification, manufacture) to facilitate faster and more frequent introduction of innovations addressing market needs.

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:

Asociacion De Investigacion Metalurgica Del Noroeste

Address:

Calle Relva Torneiros 27A
36410 Porrino

Spain

EU Contribution: €349,375

Technologies:

Non destructive testing
New NDT and repair methods for ALM parts

Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other