

PROJECT

## TABASCO

### Testing Advanced Basic Structures with novel Low-Cost Solutions

**Funding:** European (Horizon 2020)

**Duration:** Oct 2019 - Jul 2022

**Status:** Ongoing

**Total project cost:** €1,606,669

**EU contribution:** €1,124,668



**Call for proposal:** H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225385](#)

#### Objectives:

The work of this consortium will be the experimental verification by means of a test campaign (Level 2-3) of a novel design, material, structural and industrial process for the Advanced Rear End (ARE) demonstrator included in WP1.2 on Platform 1 of Cleansky project.

This project has 2 objectives:

1. Implement new methodologies to support, validate and correlate Virtual Testing Models.
2. Research advanced test setups and instrumentation solutions to improve quality of results reducing cost and time of the test campaign.

To achieve these objectives, the following IT tools, methodologies and novel instrumentation will be researched:

- Digital Image Correlation with improved uncertainty and new algorithms to measurements in Real-time during the test.
- Acoustic Camera to quickly hot-spot de-bonding and first Failure cracks.
- Nonlinear ultrasonic stimulated thermography to live monitoring damage growth.
- Improved wireless Strain gauges to reduce the test setups time and complexity and allow Structural Monitoring of the tested part.
- Applus E-Testing© monitoring service. This technology allows correlating real-time video recording and measured data (load, stress...) with FEM predictions.
- Applus Matereality© database to generate material cards used by the Virtual Testing simulation.
- Applus PICSCI© tool that provides a robust, scalable database infrastructure for storing, analysing, and comparing structural test data and Virtual test results. This IT tool will be used to implement a verification and validation methodology developed by APPLUS called CAETestBench methodology.
- Applus Absolute Accurate Methodology to provide comprehensive information about the real experimental boundary condition when developing the Virtual Test Models.
- Virtual Fields Method that takes advantage of Digital Image Correlation to reduce the number of tests required to obtain material properties by dealing with more complex test configurations leading to non-uniform states of deformation.

#### 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-CS2-2018-CfP09-LPA-01-62 - Rear End Structural Test Program – Component & Subcomponent tests

#### Lead Organisation:

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**Lgai Technological Center Sa****Address:**

Campus Universitat Autònoma De Barcelona Facultat De Medicina  
8193 Cerdanyola Barcelona  
Spain

**Organisation Website:**

<http://www.applus.com>

**EU Contribution:** €1,037,292

**Partner Organisations:****Thiot Ingenierie****Address:**

ROUTE NATIONALE  
46130 PUYBRUN  
France

**EU Contribution:** €87,377

**Technologies:**

Aircraft design and manufacturing  
Aircraft design model

**Development phase:** Research/Invention

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Air transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Other specified

**Geo-spatial type:** Other