

PROJECT

## BLINDFAST

### BLINDFAST: INNOVATIVE BLIND FASTENER MONITORING TECHNOLOGY FOR QUALITY CONTROL

**Funding:** European (Horizon 2020)

**Duration:** Feb 2016 - Jan 2019

**Status:** Complete

**Total project cost:** €433,000

**EU contribution:** €433,000



**Call for proposal:** H2020-CS2-CFP01-2014-01

[CORDIS RCN : 199336](#)

#### Objectives:

BLINDFAST project aims at developing a new and robust method for online monitoring the installation of blind fasteners that will allow performing a quality control of the blind fastener formed head. The monitoring process will allow the fast and accurate classification of blind rivets and detecting defects that cannot be detected from the accessing face. Nowadays, due to the uncertainty about the quality of the rivet, the Design Office need to increase the design loads. Thus, blind fasteners joints are penalised in rivet number, rivet weight, and manufacturing time, increasing both assembling direct and indirect costs, and also aircraft operational costs due to heavier components. New monitoring method will prevent from using these extra fasteners that nowadays have to be installed to compensate the incorrectly installed fasteners.

The new concept will be based on a multi-signal approach that will analyse fastening data acquired during the insertion of the fastener and will extract from them relevant data related to fastener quality. A smart test-bench for blind fastener installation will be prepared to allow multi-signal and multi-sensor approach. During sample preparation defects will be forced in order to have appropriate input data. Later the application of advanced data mining and artificial intelligent techniques to the acquired signals will be conducted to look for patterns related to rivet quality. If multi-signal approach for fastening monitoring does not lead to satisfactory results, other non-destructive techniques as frequency response analysis will be also considered.

The topic addressed is JTI-CS2-2014-CFP01-LPA-02-01 which relates to Platform 2 "Innovative Physical Integration Cabin-System-Structure". BLINDFAST contributes to the development of intelligent automation and zero defects manufacturing lines by allowing the early detection of defects, the reduction of extra fasteners and by providing security about quality of the installed fasteners.

#### 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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Parque Tecnológico De Bizkaia - Calle Geldo - Edificio 700  
48160 Derio  
Spain

**Organisation Website:**

<http://www.tecnalia.com>

**EU Contribution:** €433,000

### **Technologies:**

Manufacturing processes  
Advanced joining technologies

**Development phase:** Research/Invention

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Air transport

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

**Geo-spatial type:** Other