

PROJECT

## REPRISE

### Reliable Electromechanical actuator for PRImary Surface with health monitoring

**Funding:** European (Horizon 2020)

**Duration:** Jul 2016 - Dec 2018

**Status:** Complete

**Total project cost:** €1,309,063

**EU contribution:** €995,469



**Call for proposal:** H2020-CS2-CFP02-2015-01

[CORDIS RCN : 205606](#)

#### Objectives:

The REPRISE project responds to the call JTI-CS2-2015-CFP02-SYS-03-01.

The objective of the project is the design and development of an innovative electromechanical actuation system with health monitoring for primary-control-surface of a small aircraft. It is well-known that the electromechanical actuation will lead to weight saving and life-cycle cost reduction but some critical issues of this technology need to be addressed. The REPRISE project will thus be focused on overcoming these issues and improving technology performance, reliability and safety using new technologies and health-management algorithms.

Project activities will start testing an available EMA (electromechanical actuator) and ECU (electronic control unit), which meets in general the requirements reported in the CfP, on an available test rig until mechanical failures occur. These tests will allow the development of a Health Monitoring System (HMS) able to detect degradations of the mechanical components before they will evolve into failures. New sensors will be added, to those already embedded into the available EMA, to verify their capability to detect part degradation. The EMA will be then redesigned in order to improve reliability and reduce weight and envelope through the introduction of new technologies into EMA/ECU, new sensors and the HMS. Finally, the improved EMA and ECU will be tested to demonstrate both performances and effectiveness of HMS.

Pointing at the success of the project, the REPRISE consortium strength lies in the association of different expertise, from different type of active members (SME, academia and industry). This association will benefit to all involved partners by sharing resources, skills and competencies on a high technological field with a major growth potential. From a wider point of view, this challenging project opens the small aircraft market sector to cutting edge technologies and will be beneficial to the whole aeronautical market as well.

#### 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:

**Umbragroup Spa**

**Address:**

Localita Paciana Zona Industriale  
6039 Foligno Perugia  
Italy

**EU Contribution:** €545,344

## **Partner Organisations:**

### **Universita' Degli Studi Di Bergamo**

**Address:**

Via Salvecchio 19  
24129 Bergamo  
Italy

**EU Contribution:** €263,750

### **Zettlex Uk Limited**

**Address:**

NEWTON COURT TOWN STREET NEWTON  
CAMBRIDGE  
CB22 7PE  
United Kingdom

**EU Contribution:** €186,375

## **Technologies:**

Aircraft design and manufacturing  
Electro-Mechanical Actuators (EMAs)

**Development phase:** Research/Invention

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Air transport

**Transport sectors:** Passenger transport

**Geo-spatial type:** Other