

PROJECT

SOCOSYS

Sensors for Oil COoling SYStem

Funding: European (Horizon 2020)

Duration: Feb 2017 - Jan 2019

Status: Complete

Total project cost: €481,025

EU contribution: €336,718



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

[CORDIS RCN : 208068](#)

Background & policy context:

Oil cooling machines are the preferred solution in the aeronautic field to cool electrical rotating machines as they allow more compact equipment and more efficient and stable heating transfer. However, they suffer some limitations: they provide only binary information, lack some health monitoring functions and demonstrate poor reliability/performance at high temperature.

Objectives:

The purpose of the project SOCOSYS is then to develop at TRL 5 two smart pressure sensors (absolute or gage and differential) for oil cooled starters and generators. The final objective is to replace the current mean of threshold detection, generally a mechanical switch, with a smart sensor and consequently to improve the health monitoring of the global oil cooling system.

The innovative characteristics of the sensors will be focused on the capacity to operate in ambient temperature range from -40°C to +180°C, on providing pressure measurement enabling health monitoring functionalities at the oil cooling system level, while matching all other operating requirements (cost, size, accuracy, environmental constraints like EMC susceptibility and vibration ...) and on meeting the reliability constraints expected from the Topic Manager.

SOCOSYS will allow developing a new generation of oil cooled starter generators that will contribute to more electrical, safe but also cost efficient future small aircraft as the SOCOSYS's output will lead to the extension of the mean time between maintenance 'MTBM'.

Methodology:

The project will be deployed following a Phase & Gate Approach from the specification freeze phase to the qualification of the sensors, including deliverables and reviews with the involvement of the Topic Manager. At the issue of the 18 months the project, two demonstrators of each type of sensors, having the TRL5, will be provided to the topic manager for further integration tests.

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:

Auxitrol Sa

Address:

Allee Charles Pathe 5

18941 Bourges Cedex
France

Organisation Website:

<http://www.auxitrol.com>

EU Contribution: €336,718

Technologies:

Condition monitoring
Sensor condition monitoring system

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security

Geo-spatial type: Other