

PROJECT

SAIS

Next Generation Smart Active Inceptors System development for Tilt Rotor application

Funding: European (Horizon 2020)

Duration: Jun 2020 - Nov 2023

Status: Ongoing

Total project cost: €4,894,464

EU contribution: €3,500,000



[CORDIS RCN : 229131](#)

Objectives:

The SAIS project is aimed at designing, developing, manufacturing and qualifying a smart active inceptors system for the cockpit of the next generation civil tiltrotor.

The design will focus on inceptors' mechanical interfaces and at the same time studies on ergonomics, electromechanical senso-actuators, haptic capabilities, command logic including diagnostic capabilities will be part of SAIS commitment. The project will culminate with the achievement of SOF (Safety of Flight) qualification of the system in order to permit flight trials activities, and with the delivery of one EFA shipset to be installed on NGCTR-TD aircraft.

Support to WAL for integration into Flight Control System (FCS) rig and into NGCTR-TD cockpit, at WAL's facility, is part of the final goal. Starting from a preliminary system specification provided by WAL at the project start, the SAIS consortium will compile the compliance matrix to be issued at SRR, then the consortium will proceed with the system design, in order to achieve the best inceptor configuration, by considering weight, volumes, power consumption, complexity, integration, availability, reliability and ergonomics as KPIs.

Trade-off activities and a technological innovation assessment with the final aim to identify the possible ergonomic architectures that match the WAL requirements and the tilt rotor specific application will be performed. The system will be integrated into FCS rig and into Tilt-Rotor cockpit at WAL premises. A modelling and simulation tool of the flight control inceptors will be also developed and shared with WAL in order to support NextGen CTR FCS.

During the development, special care will be dedicated at exploring and assessing mechanical designs and solutions, which enhance piloting effectiveness for tiltrotor application, at improving functionalities by capitalizing on active features by introducing world-class innovations for such a kind of equipment.

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-CS2-2019-CFP10-FRC-01-29 Smart Active Inceptors System development for Tilt Rotor application

Lead Organisation:

Mare Engineering Spa

Address:

VIA EX AEROPORTO SNC
80038 POMIGLIANO D' ARCO NA

Italy

Organisation Website:

<http://www.marengineering.it>

EU Contribution: €447,563

Partner Organisations:

Lin Up Srl

Address:

VIA EX AEROPORTO SNC
80038 POMIGLIANO D'ARCO NA
Italy

EU Contribution: €390,597

Cbl Electronics Srl

Address:

VOCABOLO BODOGLIE 148/P/3
06059 TODI
Italy

EU Contribution: €280,438

Universita Di Pisa

Address:

N/a
56122 Pisa
Italy

Organisation Website:

<http://www.unipi.it>

EU Contribution: €246,250

Umbria Aerospace Systems Spa

Address:

VIA BUFALORO 21
06089 TORGIANO
Italy

EU Contribution: €2,135,153

Technologies:

Sensor technologies

Flight test instrumentation for rotorcraft

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Digitalisation

Geo-spatial type: Other