PROJECT

LiTRAS

Linear Innovative Thrust Reverser Actuator System

Funding: European (Horizon 2020)

Duration: Sep 2020 - Feb 2023

Status: Ongoing

Total project cost: €1,158,855

EU contribution: €901,380

Call for proposal: H2020-CS2-CFP10-2019-01

CORDIS RCN : 229958

Objectives:

LiTRAS will develop a robust concept for an innovative Thrust Reverser Actuator System (TRAS) based on linear motor technologies that will allow further and deeper integration capability inside the pylon and nacelle structure and will greatly improve Thrust Reverser performances against the challenging Nacelle environment.

The LiTRAS concept will be compact, safe, reliable and easy to operate and will be able to withstand the harsh environmental conditions required.

In addition, the LiTRAS concept will provide locking functionality (PLS, Primary Locking System) preventing from any inadvertent Thrust reverser deployment in Flight and a Mechanical Deployment Unit (MDU) for manual opening of the cowls for maintenance operations. The system will also incorporate a TRCU (Thrust Reverser Control Unit) concentrating the power supply, control and monitoring electronic hardware of the linear actuator.

The main objectives of the LiTRAS project are:

- Investigate linear motor technologies applied to a thrust reverser module of a short middle range UHBR engines with further and deeper integration capability inside the pylon and nacelle structure.
- Improve cost, weight, efficiency and maintainability of the Thrust Reverser Actuation System by developing a compact, reliable actuator based on a linear motor without mechanical transmission and directly integrated with the nacelle structure.
- Investigate on the possible solutions that could be given to extreme environmental conditions if required.
- Bring the technology to TRL4
- Contribute to the reduction of the development time of the future engine architectures by 10%, through the optimisation of system integration for the power plant systems
- Provide a friendly design that is easy to use but ensures a safe operation of the TRAS.
- Deliver an Aircraft qualification assessment and define the necessary steps to bring the technology from TRL4 to an aeronautical and certifiable 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-LPA-01-73 Innovative Thrust Reverser Actuator System (ITRAS)

Lead Organisation:

Fundacion Tekniker

Address:
CALLE INAKI GOENAGA 5
20600 EIBAR GUIPUZCOA
Spain

Organisation Website:
http://www.tekniker.es

EU Contribution: €300,605

Partner Organisations:

Compania Espanola De Sistemas Aeronauticos

Address:
AVENIDA JOHN LENNON 4
28906 MADRID (GETAFE)
Spain

Organisation Website:
http://www.cesa.aero

EU Contribution: €358,575

Dr.-Ing. Ernst Braun Gmbh Entwicklung Elektrischer Maschinen, Antriebe Und Steuerungen

Address:
Martin-Luther-Strasse 1
88400 Biberach An Der Riss
Germany

EU Contribution: €242,200

Technologies:

Aircraft propulsion
Optimum turbofan engine design

Development phase: Validation

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Societal/Economic issues, Safety/Security

Geo-spatial type: Other