

PROJECT

PROTEUSS

Pressurised Rotational Oil Transfer - Experimental Unit & System

Funding: European (Horizon 2020)

Duration: Jun 2019 - May 2022

Status: Ongoing

Total project cost: €2,271,334

EU contribution: €2,271,334



Call for proposal: H2020-CS2-CFP08-2018-01

[CORDIS RCN : 223579](#)

Objectives:

With the drive for engine cores to become smaller in size whilst operating at ever greater speeds and loads, the demands placed on the transmission systems are becoming ever greater.

Correspondingly, effective lubrication, liquid cooling and hydraulic actuation are increasingly essential to the performance and life span of engine transmission systems.

The above general trends, coupled with a recent resurgence of interest in open rotor engines, propel a need for new Oil Transfer Bearings (OTBs) to be developed. OTBs are required for two main reasons:

1. to provide both lubrication to bearings of planetary gears when the carrier of an epicyclic gearbox rotates and
2. to actuate movable objects on the rotating frame such as a blade pitch mechanism.

The proposed experimental rig and supporting computational model will investigate both of these conditions simultaneously.

UNOTT is well placed to carry out this work due to its experience in delivering high quality research relevant to bearings, seals, shafts and other parts of the gas turbine transmissions system that have become a feature in all recent engine development programmes at Rolls-Royce. This is an area of focus for the Gas Turbines and Transmissions Research Centre, which included a significant investment in research facilities that would allow research in this area of long-term strength at UNOTT to deliver benefits to the wider engines community and contribute to the global challenges we face to reduce noise and emissions.

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-CS2-2018-CfP08-LPA-01-49 Oil Transfer Bearing for Advanced Pitch Change Mechanism

Lead Organisation:

The University Of Nottingham

Address:

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EU Contribution: €2,271,334

Technologies:

Aircraft propulsion
Lubrication system technologies

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other