

PROJECT

DEVILS

DEVILS (Development of Vhbr engines Innovative Lubrication System)

Funding: European (Horizon 2020)

Duration: Feb 2017 - May 2021

Status: Complete

Total project cost: €2,898,250

EU contribution: €2,898,250



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

[CORDIS RCN : 208056](#)

Background & policy context:

Aircraft Engines are normally assisted by a number of complementary systems that have to guarantee performance throughout the whole flight envelope of the aircrafts for which they are designed. Among these systems Oil lubrication and heat management system is the most important due to its roles in:

- Removing the heat generated in the highly loaded rolling bearings and the gears found in the Engine power and accessory gearboxes
- Lubricating bearing and Power and Accessory gear boxes.

The current trend of developing aircraft engines that consume less fuel put a lot of pressure on the oil lubrication system cooling requirements due to higher speeds, loads and temperatures in engines. This is much more true for Very High By-pass Engines due to the integration of high-power gearboxes (allowing high by-pass ratio) and high-power starter-generators.

For this reason, Engine manufacturers are deeply looking to innovative design for oil lubrication and heat management system implementing architectures that are able to meet the new cooling and lubricating requirements without negatively impacting the Engine weight or operational and maintenance costs.

Objectives:

The overall objective of project DEVILS Project is to research, develop and validate the robustness of a new variable oil flow approach towards the design an innovative variable flow oil pump to be integrated in a high performance aircraft lubrication systems architecture with the aim of reducing fuel and oil consumption.

Objective of DEVILS project is as well to research, implement and validate smart fault detection and health monitoring algorithms to assist the system in reducing oil low flow rate needs and prognostic functions.

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:

Protom Group Spa

Address:

VIA FORO BUONAPARTE 70
20121 MILANO
Italy

EU Contribution: €573,750

Partner Organisations:

Euro.soft Srl

Address:

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80143 NAPOLI
Italy

EU Contribution: €428,875

A.Abete SRL

Address:

ZONA INDUSTRIAL NOLA MARIGLIANO SNC
80035 NOLA NA
Italy

EU Contribution: €1,006,438

Universita Degli Studi Di Napoli Federico II

Address:

CORSO UMBERTO I, 40
80138 NAPOLI
Italy

Organisation Website:

<http://www.unina.it>

EU Contribution: €195,125

Consiglio Nazionale Delle Ricerche

Address:

Piazzale Aldo Moro
185 Roma
Italy

Organisation Website:

<http://www.cnr.it>

EU Contribution: €319,375

Tat Technologies Ltd

Address:

REEM INDUSTRIAL 2 NETA BLVD BNEY AYISH
GEDERA 7075002
Israel

EU Contribution: €374,688

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: Safety/Security

Geo-spatial type: Other