PROJECT

EDEC

Enhanced Diesel Engine Control

Funding: European (Horizon 2020)

Duration: Jun 2017 - Dec 2019

Status: Complete

Total project cost: €638,824

EU contribution: €506,756

Call for proposal: H2020-CS2-CFP04-2016-02

CORDIS RCN : 210611

Objectives:

The Enhanced Diesel Engine Control (EDEC) project aims to develop a modern Electronic Control Unit for new light weight and efficient jet-fuel reciprocating engines for general aviation. Application of diesel engine technology will lead to a reduction of fuel burnt by 50% to 65% compared to a small turbine engine, and by 30% to 50% compared with an avgas engine, leading to significant environmental effects and drastic reductions in operating costs. It will also lead to a reduction of noise thanks to a lower speed of rotation.

In addition, proposed EDEC design aims to:

1. Bring the highest level of safety/reliability;
2. Adopt a modular design enabling flexible solutions for a wide range of users;
3. Introduce a special regime with only half of the engine's cylinders running to further minimise fuel burnt;
4. Research possibilities to use wireless data communication for maintenance purposes.

The proposed EDEC project has the ambition of introducing for the first time an aerospace engine control unit using a “control maps concept” to control and optimize engine operation in all modes. It will be able to, at the same time, optimize fuel burnt, emissions and ensure safe changes of engine operating modes.

Successful development of EDEC (for 6-cylinder jet-fuel reciprocating engines) will lead to a significant increase in European shares on the market of piston engines for general aviation, which is currently dominated by US companies. Proposed 6-cylinder engines well complements to smaller 4-cylinder diesel engines which enabled significant market success of the European Diamond Aircraft. The new engine has the potential to dominate the market of general aviation piston engines.

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:

Unis As

Address:
Jundrovska 33
624 00 Brno
Czech Republic

Organisation Website:

http://www.unis.cz

EU Contribution: €308,158

Partner Organisations:

Vysoke Uceni Technicke V Brne

Address:
Antoninska 548/1
60190 Brno
Czech Republic

Organisation Website:
http://www.vutbr.cz

EU Contribution: €198,598

Technologies:

Aircraft propulsion
Electronic Control unit for diesel aviation engines

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other