

Press Release - JANUARY 2020

Investigation and Maturation of Technologies for Hybrid Electric Propulsion

European aviation research and industry initiate IMOTHEP, an ambitious technological program on Hybrid Electric Propulsion

In Brussels on 20 January 2020, ISAE-SUPAERO with its aviation research and industry partners officially launched the IMOTHEP project, an ambitious research initiative on hybrid electric propulsion funded by the European Commission under Horizon 2020.

Reducing greenhouse gas emissions is key for aviation to pursue its development in the service of society and people mobility. This calls for ambitious research and disruptive solutions well beyond the continuous improvement of current aircraft technologies.

Under the leadership of ONERA, the French aerospace research lab, a consortium of thirty-three key aviation industry and research stakeholders is engaging in an ambitious research project on hybrid electric propulsion for commercial aviation, a technology that opens a new design space for aircraft and may provide a revolutionary step in improving their efficiency.

IMOTHEP (*"Investigation and Maturation of*

Technologies for Hybrid Electric Propulsion"), a 4-year Research and Innovation Action receives a 10.4 M€ grant from the European Commission under the Horizon 2020 framework program.

IMOTHEP will perform an in-depth investigation of electric technologies for hybrid electric aircraft in close connexion with advanced aircraft configurations design and innovative propulsion architectures taking advantages of synergies between propulsion and airframe.

Analysing potential technologies and technical issues at the relevant scale is fundamental for hybrid electric propulsion and addressing the challenge of climate change requires exploring the technology for commercial aircraft that represents the bulk of current airlines' fleets and aviation's emissions. This is the central focus of IMOTHEP.

The ultimate goal of the project is to achieve a key step in assessing the potential of hybrid electric propulsion for reducing the emissions of commercial aviation and eventually to build the technology roadmap for its development.

The IMOTHEP consortium gathers the major European aircraft manufacturers (Airbus and Leonardo), leading engines manufacturers (Safran, GE Avio, MTU, ITP, and GKN), European aeronautic research organisations from EREA (ONERA, CIRA, DLR, AIT, ILOT, INCAS and NLR),

higher education organisations (Université de Lorraine, ISAE-SUPAERO, Strathclyde University, TU Braunschweig, Politecnico di Bari, Chalmers University, and University of Nottingham), a think tank (Bauhaus Luftfahrt), an intergovernmental organisation (Eurocontrol), and a consulting company in innovation management (L'Up). IMOTHEP receives support also from EASA as third party.

In addition, IMOTHEP develops international cooperation with Russia, with the involvement of five leading research organisations (CIAM, GosNIIAS, MAI, NRC, TsAGI), as well as with Canada (NRC-CNRC).

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