Daher, Airbus and Safran team up to develop EcoPulse™, a distributed hybrid propulsion aircraft demonstrator

Paris International Air Show, June 17, 2019 - As part of their innovation strategies, Daher, Airbus and Safran announce their collaborative partnership for the design and development of the wing-mounted EcoPulse™ distributed hybrid propulsion demonstrator with a scheduled maiden flight date of 2022. Based on Daher’s TBM platform, this project kick-started by CORAC (the French Civil Aviation Research Council) with support from DGAC (the French Civil Aviation Authority) will develop technologies that boost the environmental efficiency of aircraft and meet the new needs of air travel.

The aviation industry as a whole is committed to the development of cleaner aviation

The overall approach spans 3 areas of research and development:

- The distributed hybrid propulsion system will be provided by Safran.
- Airbus will have responsibility for the aerodynamic optimization of the distributed propulsion system, the installation of high energy density batteries and the use of those batteries to power the aircraft.
- Component and systems installation, flight testing, overall analysis and regulatory construction will be undertaken by Daher using its TBM platform.

The purpose of this three-way collaboration is to validate technologies designed to reduce polluting emissions and noise pollution, and create new uses for air transportation.

“Reducing the environmental impact of aircraft is a concern for every part of the industry. So it is with enthusiasm and determination that we welcome the opportunity to be part of this unique partnership alongside Airbus and Safran to succeed in the ambitious challenge set by CORAC. We are determined to make it a distinctive feature of the French aircraft industry, and are certain that all stakeholders will unite around it,” explains Nicolas Orance, SVP Aerospace and Defense BU at Daher.

Safran will supply the entire EcoPulse™ distributed hybrid propulsion system (excluding batteries), consisting of a turbogenerator (a combined turbine and power generator), an electric power management system and integrated electric thrusters (or e-Propellers) including electric motors and propellers. The electric thrusters will be integrated into the EcoPulse™ wing and will provide propulsion thrust, at the same time as delivering aerodynamic gains (reducing wing surface area and wingtip marginal vortices, and therefore drag).

The installation of a distributed propulsion system on a TBM aircraft is an exciting opportunity to boost its efficiency, diversify its missions, reduce its environmental footprint and cut its operating costs.

“Safran has developed a technology roadmap for the installation of electric thrusters on aircraft. EcoPulse™ offers us an excellent opportunity to evaluate and identify the specific features expected by this market, particularly in terms of new hybrid propulsion aircraft projects. Safran intends to position
itself as the market leader in this type of propulsion system by 2025," says Stéphane Cueille, Head of R&T and Innovation at Safran.

Airbus will be involved in the aerodynamic modeling of the demonstrator, both to support configuration choices and to enable the development of flight control laws. All these considerations should make it possible to demonstrate the benefits of distributed propulsion, and provide the baselines for the design of optimized distributed propulsion aircraft in terms of methods, tools and outcomes.

("This distributed hybrid propulsion demonstrator is a very important step towards preparing the certification standards for a more electric aircraft. It also gives us the opportunity to improve our simulation models and consider their use on larger aircraft," confirms Jean-Brice Dumont, EVP Engineering at Airbus.

A propos de DAHER – www.daher.com

DAHER est un avionner et un équipementier industrie et services. DAHER affirme son leadership dans 3 principaux métiers - construction d’avions, équipements et systèmes aéronautiques, services logistiques et supply chain - et a réalisé un chiffre d’affaires de 1,2 milliard d’euros en 2018. Fort de son actionnariat familial, DAHER est tourné vers l’innovation depuis sa création en 1863. Aujourd’hui présent dans 13 pays, DAHER s’impose comme un acteur de référence de l’industrie 4.0, en concevant et développant des solutions à valeur ajoutée pour ses partenaires industriels.

DAHER est également sur les réseaux sociaux :
- @DAHER_official
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A propos d’Airbus

Airbus is a global leader in engineering, manufacturing and support for commercial jetliners, military transport aircraft, space transportation, defense electronics, and business and general aviation. With 2018 revenues of $64 billion and approximately 134,000 employees, Airbus is the world’s largest aerospace company.

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A propos de Safran

Safran is an international high-technology group, operating in the aircraft propulsion and equipment, space and defense markets. Safran has a global presence, with more than 92,000 employees and sales of 21 billion euros in 2018. Working alone or in partnership, Safran holds world or European leadership positions in its core markets. Safran undertakes Research & Development programs to meet fast-changing market requirements, with total R&D expenditures of around 1.5 billion euros in 2018.

Safran is listed on the Euronext Paris stock exchange, and is part of the CAC 40 and Euro Stoxx 50 indices

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