

PRESS RELEASE

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Daher, Safran and Airbus exhibit EcoPulse, a hybrid-electric distributed propulsion aircraft demonstrator, at the Paris Air Show



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Paris Air Show, Le Bourget, France – June 21, 2023

EcoPulse, the hybrid-electric distributed propulsion aircraft demonstrator jointly developed by Daher, Safran and Airbus, makes its first public appearance, revealing its final external configuration, at the Paris Air Show. After passing successfully the first ground tests, the demonstrator will perform its first flight with hybrid-electric propulsion later this year.

This demonstrator - supported by CORAC (the French Civil Aviation Research Council), and co-funded by DGAC (The French Civil Aviation Authority) through France Relance and NextGeneration EU- is one of the major collaborative projects in France in the field of aviation decarbonization. EcoPulse aims to evaluate the operational advantages of integrating hybrid-electric distributed propulsion, with specific emphasis on CO₂ emissions and noise level reduction. This disruptive propulsion architecture enables a single independent electrical power source to provide power to several engines distributed throughout the aircraft. The demonstrator will also evaluate the overall energy efficiency of the onboard system, including high-voltage electrical propulsion with battery and turbogenerator, and control laws involved in such architecture.

Based on a Daher TBM aircraft platform, EcoPulse is equipped with six integrated electric thrusters or e-Propellers (supplied by Safran), distributed along the wings. Its propulsion system integrates two power sources: a turbogenerator, i.e an electric generator driven by a gas turbine (supplied by Safran), and a battery pack (supplied by Airbus). At the heart of this architecture is a Power Distribution and Rectifier Unit, responsible for protecting the high-voltage network and for distributing the available electrical power, as well as high-voltage power harnesses (both provided by Safran).

Since the announcement of this collaboration between Daher, Airbus and Safran at the previous Paris Air Show in 2019, the demonstrator has successfully passed key milestones, leading to its maiden flight in 2022 with its conventional thermal engine (without electric system operational). The ground and flight tests conducted recently in 2023 validated its aerodynamics and systems configuration.

“After endurance ground test campaign for the e-Propellers, the first hybrid-electric flight with the six e-Propellers activated will be an important milestone for our technology roadmap as Safran's objective is to position itself as the leader in future hybrid and all-electric aircraft systems,” said Eric Dalbiès, Executive Vice President Strategy and Chief Technology Officer for Safran.

“Hybridization and electrification are key to the aerospace sector's decarbonization journey. With EcoPulse, we learned a lot from developing the high-power battery pack entirely, from the monitoring system to the thermal runaway and short-circuit tests. Some of these key learnings are already applied in several of our demonstrators with the common ambition to lower emissions. We are now all eager to see this technology flying and continue to progress on our electrification roadmap,” said Sabine Klauke, Chief Technical Officer at Airbus.

“The demonstrator has so far amassed around 27 hours of flight time with the electric propellers feathered. Flight tests of the hybrid-electric powertrain are due to begin later this summer. We are going to learn a lot. From this demonstration program, we plan to develop our future product roadmap and basically spec the hybrid aircraft we intend to produce by the end of our five-year plan. We expect by the end of 2027 to be able to offer our first hybrid aircraft to the market,” said Pascal Laguerre, Chief Technology Officer at Daher.

These latest steps further paved the way for the demonstrator's first appearance in public at the Paris Air Show and for subsequent flights powered by electricity, later this year.

About Daher - www.daher.com

As an aircraft manufacturer, manufacturer, manufacturing services provider and logistician, Daher achieved a revenue of 1.3 billion euros in 2022. Backed by its family shareholding, Daher has been focused on innovation since its creation in 1863. With more than 10,500 employees and offices in 13 countries, mainly in Europe and North America, Daher designs and develops value-added solutions for its aeronautical and industrial customers and partners.



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About Safran - www.safran-group.com

Safran is an international high-technology group, operating in the aviation (propulsion, equipment and interiors), defense and space markets. Its core purpose is to contribute to a safer, more sustainable world, where air transport is more environmentally friendly, comfortable and accessible. Safran has a global presence, with 83 000 employees and sales of 19.0 billion euros in 2022, and holds, alone or in partnership, world or regional leadership positions in its core markets.

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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