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VAERIDION completes first functional validation tests of multi-engine propulsion concept

Vaeridion GmbH, a Munich based aircraft manufacturer that is accelerating the green transformation of aviation with a battery-electric regional aircraft, has **successfully started an extensive functional test campaign** of its Electric Propulsion Unit (EPU) demonstrator.

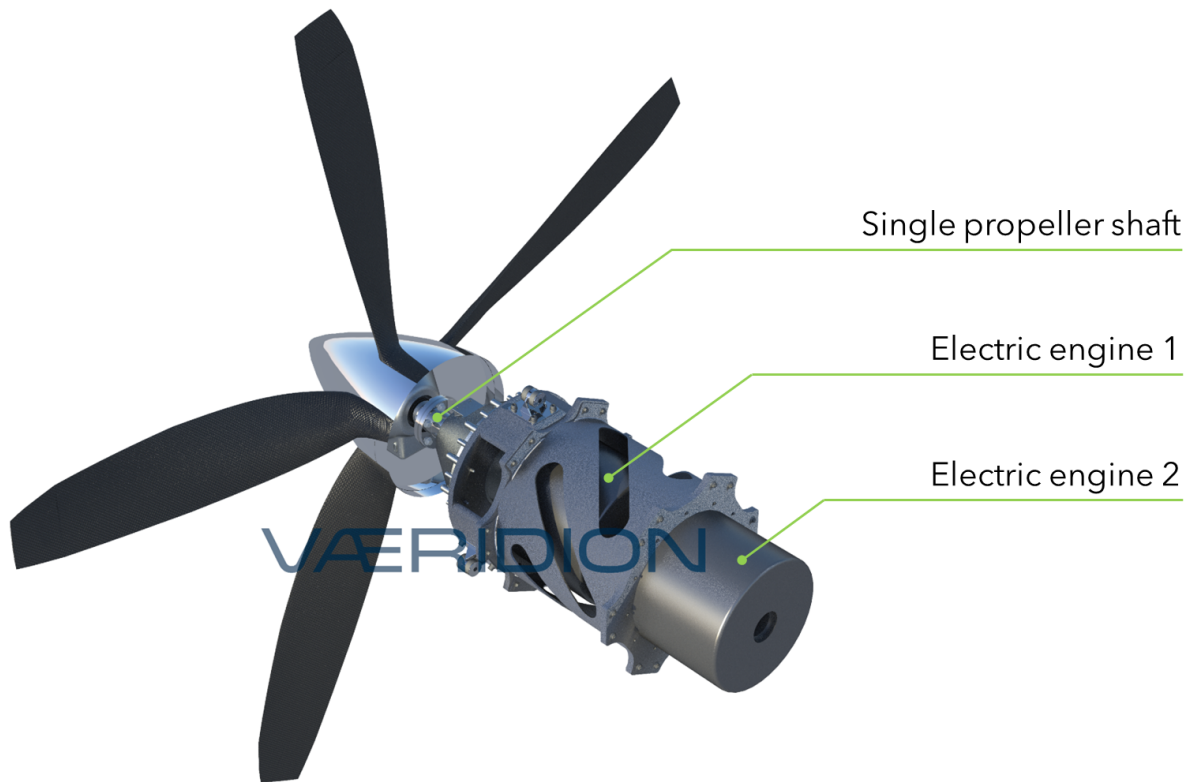
VAERIDION's novel electric propulsion system powers a single nose-mounted propeller by redundant and isolated electric drives. In accordance with current certification definitions, each independent drive is denoted as "electric engine". In case of an engine failure, the remaining engine(s) continue to drive the propeller. **This electric powerplant architecture is unique in fixed-wing aircraft to date.**

The test campaign validates the functional EPU behaviour for normal operation as well as engine failure conditions. Dedicated mission scenarios are run in a total of more than 150 test points. **We are demonstrating that power loss failures of an engine will not stop or interrupt propeller operation.**

The equipment under test comprises of two electric engines based on aviation qualified hardware and their respective mechanical coupling as well as the single output shaft, while the propeller is simulated by a laboratory load machine. The setup is at reduced scale regarding the final aircraft level performance rating.

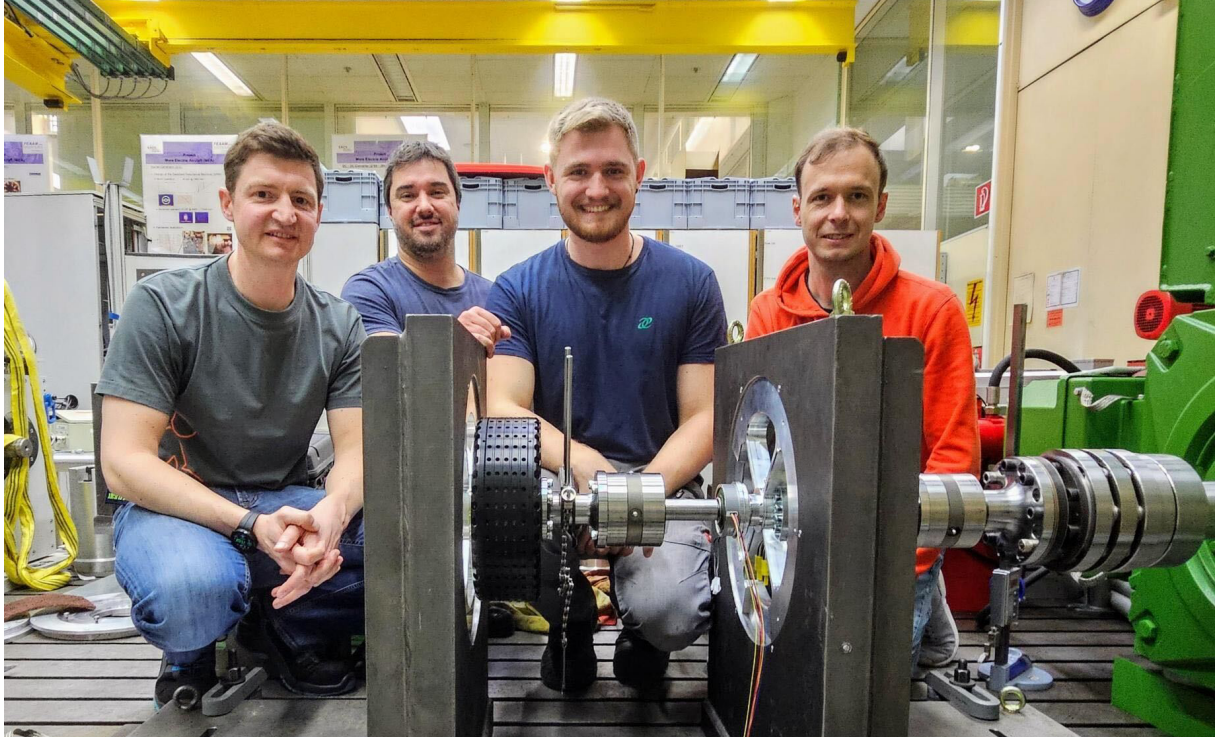
"We direct our forces to early technology demonstration through relevant and representative testing as opposed to showcasing", says CTO Dr. Sebastian Seemann. "The team has now demonstrated that our mechanical decoupling of the electric engines fully works. Our objective is that no single failure of any engine whatsoever will impair continued safe flight and landing. By this novel propulsion approach **the Microliner has the potential to feature an even enhanced level of operational safety** compared to today's twin-engine or turbine aircraft, let alone single engine propeller aircraft."

Since November 2023, **VAERIDION and EASA cooperate in a Pre-Application Contract to determine the preliminary certification basis of the Microliner.** The innovative propulsion architecture has been the core focus of both teams.



About the Microliner

The Microliner is an electrical conventional take-off and landing (eCTOL) aircraft that will transport 9 passengers over up to 500 km range. The Microliner is designed for commercial operations under IFR conditions. It will operate between decentralized regional cities and metropolises saving the traveller precious time at competitive travel cost. The Microliner is a clean sheet design that is optimized for energy efficient flight. Main novel technologies are the wing-integrated modular batteries and an electrical multi-engine single propeller powerplant.



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