Turbomeca studies innovative systems and architectures for helicopter propulsion

Turbomeca is investigating new propulsive configurations to address the need for greater performance and reduced environmental footprint of new-generation rotorcraft.

Through a cutting-edge hybridization project, Turbomeca is studying new twin-engine power management concepts. One of them includes trials of "sleep modes" to optimize the power available with the mission profiles. Whenever needed, the sleeping engine can be rapidly re-activated using an innovative electric power generation system. This concept will allow significant cuts in fuel consumption, whilst preserving the same architecture as other of Turbomeca’s engine designs.

Key technologies have already demonstrated an ultra-fast reactivation time, which is revolutionary compared to what conventional starters can provide. A full system is tested on a 2,500 shp class turboshift since June 2015, and will provide its full results in the coming months.

Turbomeca is also actively investigating other hybridization levels, through various combinations of duration (short versus long periods of hybridization) and intensity (small versus high ratio of additional electrical power brought to the original thermal/mechanical power source).

All such ground-breaking hybrid configurations are part of the "more electric" aircraft research initiatives currently being undertaken at Turbomeca, by combining the expertise and resources of several other Safran companies: Labinal Power Systems (power management systems), Technofan (electric engine) and Microturbo.

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Turbomeca (Safran) is the leading helicopter engine manufacturer, and has produced 70,000 turbines based on its own designs since the company was founded. Offering the widest range of engines in the world and dedicated to 2,500 customers in 155 countries, Turbomeca provides a proximity service thanks to its 15 sites, 30 proximity maintenance centers, 18 Repair & Overhaul Centers, and 90 Field representatives and Field technicians. Microturbo, the subsidiary of Turbomeca, is the European leader in turbojet engines for missiles, drones and auxiliary power units.

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