Safran seeks new talent to meet the more-electric aircraft challenge

Safran is a major player in the drive to develop “more electric” aircraft, with expertise spanning the entire range of aircraft electrical systems. We take a closer look at the skills needed by the Group today to develop more sustainable solutions for tomorrow’s “greener” aircraft.

Safran has been working for many years on the total or partial replacement of aircraft hydraulic and pneumatic systems with electrical systems. “All-electric and hybrid solutions pave the way for enhanced performance, increased reliability and lower operating costs,” says Michel Eymard, Vice President, Technical Networks and R&D. However, the pressing need to reduce the carbon footprint of air transport has compelled the Group to shift up a gear in its efforts. “Alongside all other manufacturers, we’re aiming to halve CO2 emissions in the aviation industry by 2050,” emphasizes Michel Eymard. “But that ambitious goal cannot be attained with today’s technology. So, we need to develop innovative and even disruptive technologies that will make it possible.”

The challenge doesn’t just revolve around aircraft architecture and equipment. The overall electrical system will have to be redesigned – from power generation and wiring to the primary and secondary distribution systems, protection components, and converters. “Aircraft such as VTOL flying taxis require relatively low-power systems, whereas larger applications like commuter and small regional aircraft will need much higher power, closer to a megawatt, while operating at up to 1000 volts,” explains Michel Eymard. “Inevitably, that means systems must meet tougher requirements across the board: safety, reliability, service life, electromagnetic compatibility, thermal, dynamic and mechanical properties, power electronics encapsulation, and high power density, implying the use of next-generation materials. All of these areas will need highly skilled people.”

For Nayan Surti, Power Division Engineering Director at Safran Electrical & Power, finding these skills is a strategic priority. “We’re mainly looking for people with skills in electrical engineering, mechanical engineering, control and power electronics, software and simulation. But we also need designers capable of rethinking the entire electrical system architecture, breaking it down into subsystems that fit seamlessly together. Miniaturization is another major challenge, calling for skills in microelectronics. Lastly, we need mechatronics experts with the ability to physically integrate control and power electronics components into electrical systems and ensure that it all works perfectly together in severe environments.”

Where are these skills to be found? Some are already available within the Group, such as people working in materials, fluid mechanics, thermodynamics and systems architecture. “We’ll be looking at stepping up internal transfers between Safran companies, providing additional training when required,” says Michel Eymard. Other skills will have to be recruited externally. “We’re working closely with engineering schools and universities to better integrate these needs into their programs,” explains Nayan Surti. “But that’s not all. Another challenge will be to attract the talent we need in the face of stiff competition. It’s up to us to offer the most attractive opportunities! As I often like to say, contributing to more electric aircraft technologies at Safran is like working on the futuristic airplanes of our dreams.”

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