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Airbus and STMicroelectronics collaborate on power electronics for aircraft electrification

- *R&D collaboration on advanced power semiconductors, which are a key enabler of the aerospace industry's transition to hybrid and full-electric systems*

- *These semiconductors will play a significant role in powering future hybrid helicopters, aircraft, the ZEROe roadmap, as well as the City Airbus NextGen*

Toulouse, France, and Geneva, Switzerland, June 20, 2023 -- Airbus, a global pioneer in the aerospace industry, and STMicroelectronics (NYSE:STM), a global semiconductor leader serving customers across the spectrum of electronics applications, have signed an agreement to cooperate on power electronics Research & Development to support more efficient and lighter power electronics, essential for future hybrid-powered aircraft and full-electric urban air vehicles.

The collaboration builds on evaluations already conducted by both companies to explore the benefits of wide bandgap semiconductor materials for aircraft electrification. Wide bandgap semiconductors like Silicon Carbide (SiC) and Gallium Nitride (GaN) have superior electrical properties compared with traditional semiconductors like silicon. They enable the development of smaller, lighter and more efficient high-performance electronic devices and systems, particularly in applications requiring high power, high frequency, or high-temperature operations.

The co-operation will focus on developing SiC and GaN devices, packages, and modules adapted for Airbus' aerospace applications. The companies will assess these components by conducting advanced research and tests on demonstrators, such as e-motor control units, high and low voltage power converters, and wireless power transfer systems.

"*This collaboration with STMicroelectronics, a global leader in power semiconductors and wide bandgap technologies, will be key to support Airbus' electrification roadmap*," said Sabine Klauke, Airbus Chief Technical Officer. "*Leveraging their expertise and experience in power electronics for automotive and industrial applications with our own record in aircraft and VTOL electrification will help us accelerate the development of the disruptive technologies required for the ZEROe roadmap and CityAirbus NextGen.*"

"*STMicroelectronics is the market leader at the cutting edge of the development of innovative power semiconductors with higher-efficiency products and solutions based on advanced materials, such as Silicon Carbide and Gallium Nitride. We already have a strong, transformational presence in mobility and industrial applications, reinforced by a vertically integrated global SiC supply chain, to support our customers globally with electrification and decarbonisation*," said Jerome Roux, President, Sales & Marketing, STMicroelectronics.

“Aerospace is a highly demanding market with specific requirements. Cooperating with Airbus, a global leader in this industry, gives us the opportunity to define together new power technologies the industry needs to realise its decarbonisation goals.”

About Airbus hybridisation and electrification roadmap
Decarbonising flight requires a range of disruptive solutions that mix new fuel types and disruptive technologies. One such solution, hybrid-electric propulsion, can improve the energy efficiency of every aircraft class and reduce aircraft CO2 emissions by up to 5%. That figure could be as high as 10% for helicopters, generally lighter than fixed-wing aircraft. Future hybrid and full electric aircraft require megawatts of power to operate. This implies huge improvements in power electronics in terms of integration, performance, efficiency, and component size and weight.

To know more about Airbus hybridisation roadmap: click here.

About Airbus
Airbus pioneers sustainable aerospace for a safe and united world. The Company constantly innovates to provide the most efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers the most modern and fuel-efficient airliners. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions worldwide.

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About STMicroelectronics
At ST, we are over 50,000 creators and makers of semiconductor technologies mastering the semiconductor supply chain with state-of-the-art manufacturing facilities. An integrated device manufacturer, we work with more than 200,000 customers and thousands of partners to design and build products, solutions, and ecosystems that address their challenges and opportunities, and the need to support a more sustainable world. Our technologies enable smarter mobility, more efficient power and energy management, and the wide-scale deployment of the Internet of Things and connectivity. We are committed to achieving our goal of becoming carbon neutral by 2027. Further information can be found at www.st.com.

For more information about STMicroelectronics’ Silicon Carbide (click here) and Gallium Nitride (click here).

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