Sikorsky Long-Range Hybrid-Electric VTOL Demonstrator To Inform Future Military And Commercial Missions

GE Aerospace is to offer one megawatt turbogenerator to power Sikorsky aircraft



Paul Lemmo, Sikorsky President and Amy Gowder, President and CEO of Defense & Systems at GE Aerospace announce Long-Range Hybrid-Electric VTOL Demonstrator

ATLANTA, March 7, 2023 – Sikorsky, a Lockheed Martin company, is producing a Hybrid-Electric Demonstrator (HEX), a fully-autonomous hybrid-electric vertical-take-off-and-landing (eVTOL) prototype. With a maximum gross weight of more than 7,000-pounds, the uncrewed aircraft will serve as a flying test-bed to evaluate large aircraft design, novel propulsion systems and control architectures for sustained hover, and ranges greater than 500 nautical miles.

“As Sikorsky celebrates 100 years of flight innovations, it’s fitting to highlight our continued commitment to safe and sustainable transformative flight,” said Paul Lemmo, Sikorsky president. “Sikorsky’s HEX aircraft will provide critical insights into the possibilities of electric systems in VTOL aircraft. Ultimately, we want to show the potential of large, advanced air mobility vehicles to perform utility missions for the U.S. military and transport passengers between cities.”

For the HEX project, GE Aerospace will offer a CT7 turboshaft engine combined with a 1MW-class generator and associated power electronics, building on hybrid electric propulsion systems being developed by GE Aerospace for both NASA and the U.S. Army.

“Bringing innovative technology is a top priority for GE Aerospace,” said Amy Gowder, President and CEO of Defense & Systems at GE Aerospace. “We are committed to developing hybrid electric propulsion systems that save fuel and optimize performance for the military and commercial applications. We are thrilled to build off our existing work with NASA and the Army to offer to power Sikorsky’s HEX aircraft and bolster the future of flight.”

Family of large VTOL aircraft envisioned

The Sikorsky Innovations rapid prototyping group will lead the HEX program. Led by its director, Igor Cherepinsky, the Innovations team will design, build and integrate the HEX airframe and electric motors with the company’s MATRIX™ autonomy flight control system.

Depending on insights learned from the flight test program, and assessment of customer applications, the HEX program could lead to a family of eVTOL vehicles scaled to carry passengers and payload for both military and commercial applications.

Sikorsky’s MATRIX™ autonomy system will control flight aboard the HEX aircraft. Developed and tested extensively over the past decade, the software, hardware and sensors that comprise the MATRIX system have demonstrated high flight reliability in low-altitude and obstacle-rich scenarios. During the U.S. Army’s Project Convergence 2022 exercise, a MATRIX-controlled Black Hawk helicopter without pilots or crew on board demonstrated optionally piloted resupply missions.

For additional information, visit Sikorsky Innovations atwww.lockheedmartin.com.

About Lockheed Martin
Headquartered in Bethesda, Maryland, Lockheed Martin Corporation is a global security and aerospace company that employs approximately 116,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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About GE Aerospace
GE Aerospace is a world-leading provider of jet engines, components and systems for commercial and military aircraft with a global service network to support these offerings. GE Aerospace and its joint ventures have an installed base of more than 40,000 commercial and 26,000 military aircraft engines, and the business is playing a vital role in shaping the future of flight.

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