First Avionics-Equipped F-35 Rolls Out At Lockheed Martin

Lockheed Martin has completed the first F-35 Lightning II equipped with mission systems, a milestone that will lead to the first avionics testing on board an F-35 aircraft.

The short takeoff/vertical landing (STOVL) F-35 variant left the factory on Wednesday, Jan. 21, and goes to the fuel facility for functional fuel system checks before it is scheduled for delivery to the flight line by the end of January. Its first flight is expected this summer.

Mission systems, or avionics, are the on-board sensors that enable the aircraft to detect, locate, identify, track and target adversaries from long ranges; detect fast-moving incoming threats such as missiles; and receive and transmit large amounts of battle-space information through secure data links. These 5th generation sensors and data links will be integral to providing the warfighter in the air and on the ground a fused picture of the battlespace.

"Testing of this aircraft will represent the fourth tier of our avionics validation process, comprising ground-based laboratory testing, airborne lab testing of individual sensors on surrogate aircraft, airborne testing of the fully integrated mission systems package on the Cooperative Avionics Test Bed, and, finally, airborne testing of the integrated system on an actual F-35," said Dan Crowley, Lockheed Martin executive vice president and F-35 program general manager.

The aircraft, called BF-4, will carry the Northrop Grumman AN/APG-81 Active Electronically Scanned Array radar and Integrated Communications, Navigation and Identification suite, and the BAE Systems Electronic Warfare system. The Block 0.5 mission systems software, which incorporates more than half of the combat-ready Block 3 software, will drive the system. BF-4 will be updated with additional equipment and software through Block 3, the last block in the System Development and Demonstration program.

The jet is the latest addition to the fleet of five F-35s already undergoing testing. Earlier aircraft are validating F-35 subsystems and flying qualities while retiring technical risk. BF-4's first flight is planned for mid-year 2009, following a comprehensive series of ground tests. Lockheed Martin is developing the F-35 with its principal industrial partners, Northrop Grumman and BAE Systems. Two separate, interchangeable F-35 engines are under development: the Pratt & Whitney F135 and the GE Rolls-Royce Fighter Engine Team F136.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 146,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2008 sales of $42.7 billion.

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