



Northrop Grumman-Developed Stealthy Data Link Validated as Combat Ready with US Marine Corps

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Fifth-generation Multifunction Advanced Data Link allows coordinated tactics and integrated engagement in high-threat environments

SAN DIEGO, July 31, 2015 /PRNewswire/ -- With the U.S. Marine Corps achieving F-35B initial operating capability (IOC), the Multifunction Advanced Data Link (MADL) waveform developed by Northrop Grumman Corporation (NYSE: NOC) has been proven a key combat-ready capability of the F-35 Lightning II program.



MADL is a high-data-rate, directional communications link that allows fifth-generation aircraft to communicate and coordinate tactics covertly. During testing of the Lockheed Martin F-35, MADL exceeded 1,000 flight hours.

The Marine Corps declared the F-35B short takeoff and vertical-landing (STOVL) aircraft and the first squadron – Marine Fighter Attack Squadron 121 (VMFA-121), known as the Green Knights – officially operational July 31. VMFA-121, based at Marine Corps Air Station Yuma, Arizona, is equipped with 10 aircraft.

"Northrop Grumman congratulates the Marine Corps on their achievement of this momentous F-35 milestone," said Jeannie Hilger, vice president and general manager, communications division, Northrop Grumman Information Systems. "The successful completion of IOC also validates Northrop Grumman's more than 10-year effort to advance communication among fifth-generation aircraft."

MADL is part of Northrop Grumman's F-35 integrated communications, navigation and identification (CNI) avionics and an important element of the F-35 Block 2 software release. Northrop Grumman has delivered 181 CNI systems to Lockheed Martin, the F-35 prime contractor.

Since August 2012, MADL has been used continuously to support a variety of developmental and operational objectives during testing at Edwards Air Force Base, California. Block 2B MADL testing culminated with four F-35s demonstrating that data passed among the aircraft via MADL could be correlated with data from other F-35 sensors and fused to form a unified situational awareness picture on cockpit displays.

"In addition to fifth-to-fifth, Northrop Grumman's CNI system also provides a core capability for fifth-to-fourth generation networked data sharing and unparalleled interoperability," Hilger said, citing a series of operational flight tests under the Jetpack Joint Capability Technology Demonstration program.

As part of the Jetpack JCTD program, Northrop Grumman developed the Freedom 550™ software-defined radio that bridges fifth-to-fourth generation platform interoperability gaps. Jetpack JCTD, which concluded in 2014, was sponsored by the Office of the Secretary of Defense (OSD), U.S. Air Force Air Combat Command, Pacific Command and OSD's Defense Microelectronics Activity.

Northrop Grumman's integrated CNI system provides to F-35 pilots the equivalent capability of over 27 avionics subsystems. By using its industry-leading software-defined radio technology, Northrop Grumman's design allows the simultaneous operation of multiple critical functions while greatly reducing size, weight and power demands on the advanced fighter. These functions include Identification Friend or Foe, automatic acquisition of fly-to points, and various voice and data communications, including MADL, which was approved by the U.S. Department of Defense Joint Requirements Oversight Council for use on all low-observable platforms.

As a principal member of the Lockheed Martin-led F-35 industry team, Northrop Grumman performs a significant share of the work required to develop and produce the aircraft. In addition to developing and producing the CNI system, Northrop Grumman produces the center fuselage; designed and produces the AN/AAQ-37 Distributed Aperture System sensor and the aircraft's radar and electro-optical subsystem; develops mission systems and mission planning software; leads the team's development of pilot and maintenance training system courseware; and manages the team's use, support and maintenance of low-observable technologies.

Lockheed Martin is developing three models of the F-35 for the U.S. military and 11 other nations. The F-22 Raptor and F-35 Lightning II are the world's only operational fifth-generation stealth aircraft; fourth-generation fighters include the F-15, F-16 and F-18.

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