

# Lockheed Martin Demonstrates The Future Of Net-Enabled Warfare At JEFX 10

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A Lockheed Martin F-16 demonstrated enhanced networked-enabled capabilities during the U.S. Air Force's Joint Expeditionary Force Experiment 2010 (JEFX 10), April 13-23, at Nellis Air Force Base, Nevada.

JEFX, planned and executed by the Global Cyberspace Integration Center, is a venue for innovative command and control (C2) and targeting technologies. This year's event focused on improving the U.S. forces' ability to conduct irregular warfare (IW). Lockheed Martin's participation, under the sponsorship of Air Combat Command, centered on the potential benefits of Internet Protocol (IP)-based applications in an irregular warfare context while conducting close air support (CAS) missions. Lockheed Martin's efforts tied in with Air Force Special Operations Command enhanced capabilities in an integrated operational thread.

During the two week experiment, F-16 pilots demonstrated the capability of the Lockheed Martin Sniper SE advanced targeting pod's enhanced resolution sensor suite for improved combat identification of ground targets. Sniper SE's ability to simultaneously track multiple ground vehicles moving through a complex urban environment lowers the pilot's workload while increasing mission effectiveness.

Using Cursor on Target protocol, continuous targeting information on moving ground vehicles was automatically transmitted to Special Operations Forces (SOF) teams via a Harris Corporation Falcon III® AN/PRC-117G radio using the Advanced Networking Wideband Waveform (ANW2) capability. The wideband networking allowed the formation of mobile ad-hoc radio networks and enabled the transmission of high-bandwidth data and streaming video. Ground teams, each using the U.S. Special Operations Command developed Battlefield Air Operations Kit, subscribed to the F-16's network to display the vehicles' real-time location on each SOF ground operator's map display. Full motion video from Sniper SE was simultaneously streamed over the network as pilots and SOF teams coordinated attacks using simultaneous text messaging, chat and annotated imagery.

In addition to exploring ANW2 capabilities, Lockheed Martin also demonstrated the use of the Rockwell Collins-developed Tactical Targeting Network Technology (TTNT) to collaborate with a wide group of airborne and ground C2 nodes. Acting as a gateway and using the space-based Integrated Broadcast Service (IBS), air crews received current intelligence information on friendly and enemy forces, then automatically translated and republished the information via TTNT, ANW2 and Link 16.

"Improving the SA (situational awareness) of the pilots is vital," said Colonel Tim Forsythe, chief of Air Combat Command's combat aircraft division. "If we can pump data into those cockpits before we launch or even update it while we're on the fly via IBS it will generate more awareness for the pilot arriving in the collaboration airspace of CAS and IW."

"Partnership with the warfighter is absolutely essential in developing robust product roadmaps," said Mark Jefferson, director for Lockheed Martin Aeronautics Horizontal Integration. "Our ability to integrate advanced capabilities and new technologies into current and challenging environments, such as the irregular warfare operations developed for JEFX 10, allows us to experiment with the fundamental elements necessary for tomorrow's net-enabled warfighting."

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 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 2009 sales of \$45.2 billion.

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