Air Force And Lockheed Martin Prototype Connects Link 16-Equipped Fighters With AOC

DLARS Successfully Demonstrates Net-Centric Capabilities at JEFX04

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The U.S. Air Force and Lockheed Martin have developed a prototype system that horizontally integrates Link 16-equipped fighter aircraft with the Air Operations Center (AOC), automatically delivering near real-time mission information from pilots to air combat planners. Developed in just four months and slated for operational deployment in early 2005, the Data Link Automated Reporting System (DLARS) creates an unprecedented link between tactical fighters and the AOC, significantly enhancing the Air Force's ability to manage missions as diverse as close air support and long-range strike.

"DLARS provides a critical combat capability to decision makers in the AOC. We've always known the data existed it was just a matter of getting it to the right people at the right time to make the right decisions," said Colonel Bruce Sturk, Commander of the Air Force Command and Control Battle Lab, Hurlburt Air Force Base. "The machine-to-machine data exchanges enabled through DLARS significantly enhance the kill chain process and give operators unprecedented levels of situational awareness throughout the battlespace." The Battle Lab, the centerpiece of innovative air combat technologies and concepts, led the development of DLARS.

The system routes Link 16 information on aircraft location, mission status, available weapons, and current fuel to a number of air command and control databases through the Theater Battle Management Core Systems (TBMCS), the Lockheed Martin-developed "engine of the AOC." TBMCS then automatically updates the Air Operations Database with the latest data on the fighters and mission status. DLARS enhances the Air Force's ability to perform a wide variety of missions, including Joint close air support, time-critical targeting, blue force tracking, maintenance and refueling.

DLARS was recently showcased at the 2004 Joint Expeditionary Force Experiment (JEFX) Spiral 3, where it demonstrated full functionality with live fighters and a working AOC at Nellis Air Force Base, Nev. The system was also flown on the Paul Revere aircraft, an advanced airborne command and control test bed. DLARS was designed, developed and delivered as a JEFX initiative in just four months, and is now planned for delivery to operational AOCs worldwide as part of TBMCS in six to eight months.

"One of the biggest shortcomings in Air Force C2 is that once the canopy closes, pilots are reduced to voice communications with the AOC, which is slow, tedious and imprecise," said Doug Barton, Director of Network-Centric Programs and Technology for Lockheed Martin Integrated Systems and Solutions. "DLARS is a perfect example of applying horizontal integration to solve a pressing problem quickly, effectively and affordably. With the Battle Lab's leadership, we took two systems that did not talk to each other and, in just four months, developed, deployed and tested a machine-to-machine link that gives AOC planners a real-time window into tactical operations."

The DLARS application is an outgrowth of Lockheed Martin's Total Integrated Warfare (TIW) initiative. TIW is a research and development effort to integrate strategic planning, operational battle management, and tactical execution into a more fluid, seamless enterprise, enabling commanders and pilots to better read, react and respond to changes on the battlefield. At the first TIW exercise last December, the company demonstrated technology that allows AOC operators and fighter pilots to collaboratively change and execute missions while the pilot is in flight.

TIW and DLARS are based on state-of-the-art net-centric technologies such as machine-to-machine data links, publish and subscribe interfaces, and platform-independent services. These technologies enable information sharing at an up-to-the-second pace providing timely information to decision makers. Lockheed Martin is currently planning a second TIW exercise that is slated for the fall of this year.

Headquartered in Bethesda, Md., Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The corporation reported 2003 sales of $31.8 billion.

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