Boeing Supports Test of Network-Centric Targeting Capability at JEFX '06

The Boeing Company [NYSE: BA] participated successfully in a large-scale, mock-combat experiment that tested new network-centric communications and targeting technologies during Joint Expeditionary Force Experiment (JEFX) '06, a biennial event held April 17 to 28 at Nellis Air Force Base, Nev.

Planned and conducted by the U.S. Air Force Command and Control and Intelligence, Surveillance and Reconnaissance (ISR) Centers, Air Force Experimentation Office and Eighth Air Force, JEFX is an Air Force Chief of Staff-directed experiment intended to accelerate the research, development and fielding of new combat systems. More than 40 Air Force, Navy and Marine Corps aircraft as well as numerous ground vehicles participated in the live-fly portion of the experiment, which also involved modeling and simulation activities conducted at facilities across the U.S.

Boeing equipped F/A-18F and F-15E fighters, B-1B and B-52H bombers, an E-3 Airborne Warning and Control System (AWACS) command-and-control aircraft and seven High-Mobility Multipurpose Wheeled Vehicles, or HMMWVs, with terminals that linked them via the armed services' Tactical Targeting Network Technology (TTNT) and other networking assets. Developed by a Rockwell Collins-led team, TTNT uses standard Internet protocol (IP) and wide bandwidth to enable airborne and ground-based nodes to exchange time-critical targeting information at high speed using still imagery, streaming video, text chat and voice-over IP.

"During JEFX, Boeing demonstrated core technologies that support the joint services' vision of Internet protocol-based, network-enabled warfare," said George Muellner, president of Boeing Advanced Systems. "As a result, we helped to move time-critical targeting capabilities into our warfighters' hands and make mission-planning more responsive and flexible at the command-and-control level."

One of the eight initiatives on this year's agenda, Non-Traditional ISR -- Information Services, called for the TTNT-equipped F-15, F/A-18, B-1 and B-52 platforms to pass still and video targeting imagery to the Combined Air & Space Operations Center (CAOC) or directly to a strike aircraft such as a B-1 or to a mobile command-and-control ground station mounted on a HMMWV.

The integration of TTNT marked the first time an operational AWACS had ever been modified with wideband capability. This enabled the platform to hook into the IP-based Global Information Grid and operate as a key battle-management node during JEFX. It also demonstrated how TTNT will enhance the capabilities of the AWACS Block 40/45 upgrade, currently in its system development and demonstration phase.

Boeing also conducted a modeling and simulation exercise in parallel with JEFX '06. Under the Virtual Warfighter program, which integrates Boeing's simulation capabilities with U.S. Department of Defense modeling and simulation networks, 10 virtual aircraft interacted with the CAOC at Nellis while flying more than 3,000 hours in a 3-D world that depicted JEFX operational scenarios. Based on average military flight-hour costs of $10,000, Virtual Warfighter demonstrated more than $30 million of capability at no cost to the Air Force.

Lessons learned from using wideband IP to network during JEFX will help Boeing engineers further develop Directional Network Waveform (DNW), a new mobile theater-of-operations ad hoc network first demonstrated in 2004. DNW can provide soldiers with secure ISR data from a variety of sources at speeds 1,000 times faster than currently fielded data links.

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