



News Release

Defense Advanced Research Projects Agency

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IMMEDIATE RELEASE

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DARPA SUCCESSFULLY DEMONSTRATES TACTICAL TARGETING NETWORK TECHNOLOGY

The Defense Advanced Research Projects Agency (DARPA) has successfully demonstrated Tactical Targeting Network Technology (TTNT) in operational tactical aircraft.

“TTNT has demonstrated core technology that supports the Service vision of internet protocol-based network centric warfare. By connecting tactical aircraft and ground nodes, we can extend the Global Information Grid to mobile platforms and enable time-critical targeting operations,” said Lt. Col. Stephen Waller, DARPA program manager for TTNT.

The demonstration and testing of TTNT took place September 12-30 at the Naval Air Weapons Station in China Lake, Calif. Fifteen prototype phase three terminals were built and installed on several platforms for the test including: F-15E, F/A-18, E-2C, Lear 25, T-39, a Command and Control Testbed aircraft (a Boeing 707), a surrogate Combined Air Operations Center (CAOC) node and three mobile ground nodes.

The TTNT network successfully demonstrated the ability to:

- Transmit data at speeds of two megabits per second over distances greater than 100 nautical miles;
- Maintain a network with a 10 megabit per second capacity;
- Transmit data further than 100 nautical miles in less than two milliseconds in a low-latency mode;
- Coexist with the military’s existing Link 16 network;
- Register new platforms within five seconds of entry into the network;
- Transmit data in excess of 300 nautical miles; and
- Route data across multiple nodes beyond line of sight, including sending tactical internet protocol applications from aircraft to the surrogate CAOC at China Lake and to Hanscom AFB, Mass., and the Pentagon in Arlington, Va.

TTNT is an internet protocol-based, high-speed, dynamic, ad hoc datalink network designed to enable tactical aircraft to quickly target moving and time-critical targets. TTNT also provides a high-throughput, low-latency solution for safety of flight and other applications requiring real-time information. TTNT enables net-centric sensor technologies to correlate information among multiple platforms, precisely locating time-critical targets.

(more)

During the tests, TTNT demonstrated that it effectively supported a number of tactical internet protocol and low-latency applications including:

- Voice over internet protocol;
- Transmission of still images from aircraft to the ground and from ground to air;
- Transmission of stream video from aircraft to ground nodes;
- Cursor on target;
- Joint Precision Approach Landing System;
- Automated aerial refueling;
- 5,000 FAA aircraft tracks on one mission (simulating Blue Force Tracks);
- Common Operational Picture;
- Internet access for aircraft;
- Internet chat; and
- Email

In the next 12 months, TTNT will conduct network stress testing; complete development of a broadband power amplifier, wideband transceiver, and low probability of intercept and low probability of detection hardening; complete software communications architecture testing and certification; and participate in Joint Expeditionary Force Exercise 2006 to further demonstrate the technologies necessary to support airborne networking.

The TTNT phase three flight test was a joint government/industry effort involving engineers and operators from DARPA, Air Force Research Laboratory's Information Directorate, Rockwell Collins, Naval Air Weapon Station China Lake, Naval Air Systems Command, VX-31, SRS Technologies, Boeing, Northrop Grumman, Calspan, and Massachusetts Institute of Technology Lincoln Laboratory.

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