# Lockheed Martin Completes Successful Live Network Centric Operations Demonstration Of Joint Tactical Network Systems

*Operational Demonstration Highlights AMF JTRS Advanced Mission Effectiveness Capability and Risk Reduction*

Lockheed Martin has successfully completed a live flight demonstration of network centric operations for the Airborne, Maritime and Fixed Stations (AMF) component of the military's Joint Tactical Radio Systems (JTRS). The live flight demonstration, conducted on September 8, showcased combat-relevant scenarios interacting through JTRS technology. This successful demonstration validates Lockheed Martin's approach to designing and developing AMF JTRS.

Lockheed Martin's AMF JTRS team funded and executed the demonstration as a risk reduction effort to highlight the technical maturity of the team's solution. Observers at the Pentagon, the Space & Naval Warfare (SPAWAR) System Center in San Diego, and Lockheed Martin facilities in Crystal City, Va., and Goodyear, Az., witnessed real-time video from the aircraft and communicated in real-time using both new and legacy systems in operational scenarios. The sites were also networked directly into the mission network through the government's Defense Research and Engineering Network.

The airborne nodes, which were flown out of Goodyear, Az., included a United States Army helicopter, a T-39 Sabreliner that represented an unmanned aerial vehicle and a United States Air Force F-16. Ground and aerial nodes interfaced in a dynamic joint tactical Mobile Ad hoc Network using an enhanced version of the Ground Mobile Radio (GMR) Wideband Networking Waveform (WNW), Solider Radio Waveform (SRW) and Legacy Link-16 communications.

"This demonstration did not require unique hardware or proprietary waveforms to integrate the ground and airborne assets," said Lockheed Martin's AMF JTRS Program Director Glenn Kurowski. "We ported WNW and SRW on prototype Software Defined Radios to support dynamic routing, streaming video and cross- banding utilizing both IPv4 and IPv6. We are committed to the JTRS vision of an open architecture and network, and the cost reductions that are achievable through commonality in non-proprietary software and design."

The live flight demonstration consisted of eight dynamic segments, each building upon the previous. The segments focused on the ability to seamlessly integrate the waveforms into an interoperable network to support shared situational awareness information; interoperability between platforms out of line-of-sight; streaming video; and wideband network quality of service.

"This demonstration highlighted an ability to integrate WNW/SRW-enabled nodes and legacy aircraft with Link-16 communications to theater applications like the Theater Battle Management Core System, Distributed Common Ground System and Joint Tactical Observation systems," said John Mengucci, vice president and General Manager of DoD Systems for Lockheed Martin Integrated Systems & Solutions.

The Lockheed Martin AMF JTRS team is currently under contract for the Pre- System Development and Demonstration (Pre-SDD) phase of the AMF JTRS competition. The AMF JTRS program is expected to be awarded in February 2007. The Lockheed Martin team includes BAE SYSTEMS, General Dynamics, Raytheon and Northrop Grumman.

The AMF JTRS program will deliver a suite of software defined, multi- function radios for use throughout the Department of Defense, as well as potential use in the Department of Homeland Security. A single radio will be capable of operating on highly secure, high performance military tactical networks in net-centric operations. AMF JTRS radios will interoperate with legacy data and voice circuits used by the U.S., allied or NATO military forces, as well as communicate with civilian first-responder voice and data systems used in disaster relief and other national emergencies.

The Lockheed Martin team has developed, tested and integrated waveforms that provide the capabilities of the JTRS WNW, and continues to research and develop proposed waveform enhancements to meet the needs of the current and future fast-moving platforms.

Headquartered in Bethesda, Md., Lockheed Martin employs about 135,000 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 2005 sales of $37.2 billion.

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