

Joint Tactical Radio System: Handheld, Manpack, and Small Form Fit

Executive Summary

- The Army completed the Rifleman Radio Limited User Test (LUT) in April 2009.
- DOT&E assessed the Rifleman Radio's performance during the LUT as supportive of mission preparation, movement, and reconnaissance. The Rifleman Radio did not demonstrate usefulness during squad combat engagements and exhibited deficiencies in operational reliability, transmission range, battery life, and concept of operations.
- The Joint Tactical Radio System (JTRS) Handheld, Manpack, and Small Form Fit (HMS) Overarching Integrated Product Team (OIPT) decided to postpone the program's Milestone C. The OIPT took this action to allow the program time to resolve program issues and prepare a strategy to address poor reliability and performance problems demonstrated during the Rifleman Radio LUT.

System

- JTRS is a family of software-programmable and hardware configurable digital radios designed to provide increased interoperability, flexibility, and adaptability to support numerous warfighter communications requirements.
- The JTRS HMS program provides handheld and two channel manpack radios for Army, Marine Corps, Navy, and Air Force operations. The program develops Small Form Fit (SFF) radio configurations, which produce the stand-alone Army Rifleman Radio and embedded SFF variants that serve in Army host platforms such as the Intelligent Munitions System, Unattended Ground Sensors, Ground Soldier System, Unmanned Aerial Vehicle (Class I and Class IV), and the Non-Line-of-Sight Launch System.
- The program strategy defines two phases of HMS production, differentiated by the type of encryption. Phase 1 will produce Rifleman Radios requiring National Security Agency (NSA) Type 2 encryption of unclassified information. Phase 2 will produce manpack radios requiring NSA Type 1 encryption of classified information.

Mission

Commanders from the Army, Marine Corps, Navy, and Air Force intend to:

Activity

- The Army conducted the Rifleman Radio LUT at Fort Bliss, Texas, in April 2009 to support the program's Milestone C decision scheduled for November 2009. The LUT assessed



- Use JTRS handheld, manpack, and Rifleman Radios to communicate and create networks to exchange voice, video, and data using legacy waveforms or the newly developed Soldier Radio Waveform during all aspects of military operations.
- Integrate JTRS SFF variants into host platforms to provide networked communications capabilities for users engaged in land combat operations to support voice, video, and data across the immediate battlespace.

Prime Contractor

- General Dynamics, C4 Systems, Scottsdale, Arizona

the operational use of the Rifleman Radio under numerous mission scenarios executed by an Infantry platoon within the Army Evaluation Task Force.

- The JTRS HMS OIPT met on October 20, 2009, and decided to postpone the program's Milestone C. The OIPT took this action to allow the program time to resolve unit cost issues, a commercial GPS waiver, and prepare a strategy to address reliability and performance issues demonstrated during the Rifleman Radio LUT.

Assessment

- DOT&E assessed the performance of the Rifleman Radio during its LUT as useful during mission preparation, movement, and reconnaissance activities. During combat engagements, the radio demonstrated poor performance and squad employment of the radio. The following LUT deficiencies require improvement to succeed during IOT&E, scheduled for 4QFY10:
 - Operational reliability was less than half of the radio's intermediate requirement of 840 hours.
 - Transmission range fell well short of the radio's requirement of 2,000 meters, demonstrating connectivity to 1,000 meters.
 - Batteries proved to have a short lifespan and generated excessive heat.

- Concept of operations for employing the radio proved vague and at times, hindered operations.
- The JTRS HMS program needs to continue development on Position Location Information, Information Assurance, Electronic Warfare, and Nuclear, Biological, and Chemical operations, which were not assessed during the LUT.
- The JTRS program is refining roles and responsibilities between the Ground Mobile Radio product line and the JTRS Network Enterprise Domain product line to ensure full testing of an integrated HMS product.

Recommendations

- Status of Previous Recommendations. The HMS program is addressing all previous recommendations.
- FY09 Recommendation.
 1. JTRS HMS should develop a strategy to address poor reliability, poor performance, and an immature intra-platoon concept of operations demonstrated during the Rifleman Radio LUT. These improvements are critical for success during the scheduled FY10 IOT&E.