

## Joint Tactical Radio System (JTRS) Cluster 5

### Executive Summary

- A key issue for the Joint Tactical Radio System (JTRS) Cluster 5 program has been the failure to deliver a JTRS Cluster 1 software operating system, which allows JTRS waveforms to run like applications.
- JTRS management reorganized under a Joint Program Executive Office (JPEO). The JPEO is tasked to restructure the entire program.
- The Defense Acquisition Executive will determine future direction and schedule of the JTRS program.

### System

- JTRS Cluster 5 is handheld, manpack, and small-embedded radios.
- Cluster 5 is intended to be modular, scaleable, and flexible.
- JTRS Cluster 5 Spiral 1 is an early delivery of handheld radio and dismounted radio capability.
- The embedded small form fit radio sets are designed for remote operation of portions of the Future Combat Systems such as Unattended Ground Sensors, Non-Line-of-Sight Launch System, and Intelligent Munition System.
- JTRS Cluster 5 Spiral 1 calls for a limited capability using available waveforms to comply with the performance user requirements.
- The JPEO will provide available waveforms to JTRS Cluster 5 for porting onto the hardware.
- JTRS Cluster 5 is being designed to enhance interoperability and eliminate communications problems caused by “stovepipe” legacy systems.



### Mission

- Tactical commanders will employ JTRS Cluster 5 to communicate with their forces using voice, video, and data during all aspects of military operations.
- JTRS supports joint and coalition missions by providing a capability to bridge and cross band between network protocols across boundaries.

### Activity

- JTRS Cluster 5 completed a system requirements review in February 2005 for the Spiral 1 manpack radio.
- In April 2005, the program completed a second system requirements review for Spiral 2 manpack, handheld, and small-embedded radio sets.
- The Defense Acquisition Executive issued Stop Work in January 2005 for JTRS Cluster 5 tasks. This was so the program could confirm user requirements and assess effect of the JTRS Cluster 1 delays on the JTRS Cluster 5 plan for technology transfer and software reuse.

### Assessment

- This program continues without an OSD-approved Test and Evaluation Master Plan.
- Cluster 5 requirements are more challenging than JTRS Cluster 1 due to requirements for a smaller size, more power,

- lighter weight, and large data processing requirements. Security, power, and antenna technology are not mature.
- The acquisition strategy has a single full-rate production decision for all radio JTRS Cluster 5 variants. The program envisions a single IOT&E for Spiral 1 and Spiral 2 radios. This strategy is flawed because the program office will not deliver both spirals of radios at the same time.
- Development of instrumentation and electronic warfare injectors for very small radios, particularly the unattended small embedded radio sets, remains a concern.

### Recommendations

The Army should:

1. Submit a Test and Evaluation Master Plan for OSD approval.

# ARMY PROGRAMS

2. Synchronize the program schedule with Future Combat Systems and Warfighter Information Network-Tactical programs to optimize required integration and testing efforts.
3. Develop a test and evaluation strategy that supports an evaluation of network maturity as part of FCS Spiral production.
4. Demonstrate the wideband networking and soldier radio waveform capabilities over JTRS prototype radios.