



Highlights of [GAO-05-669](#), a report to the Honorable Jerry Lewis, Chairman, House Committee on Appropriations

Why GAO Did This Study

The Army has embarked on a major transformation of its force. Central to this transformation is the Future Combat Systems (FCS), a \$108 billion effort to provide warfighters with the vehicles, weapons, and communications needed to identify and respond to threats with speed, precision, and lethality.

Establishing reliable, robust communications and networking capabilities is key to FCS's success. Each of the systems integral to the FCS communications network—the Joint Tactical Radio System (JTRS), the Warfighter Information Network-Tactical (WIN-T), and the System of Systems Common Operating Environment (SOSCOE)—rely on significant advances in current technologies and must be fully integrated to realize FCS. Given the complexity and costs of this undertaking, GAO was asked to review each of these key development efforts to identify any risks that may jeopardize the successful fielding of FCS.

What GAO Recommends

GAO is making recommendations aimed at reducing development risks so that FCS is provided with enabling communications and networking capabilities. If FCS proceeds without these capabilities, critical aspects of the FCS network will remain undemonstrated. In commenting on this report, the Department of Defense indicated it has begun taking actions to address our recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-05-669.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Paul L. Francis at (202) 512-4841 or francisp@gao.gov.

DEFENSE ACQUISITIONS

Resolving Development Risks in the Army's Networked Communications Capabilities Is Key to Fielding Future Force

What GAO Found

Each of the programs for developing FCS's communications network is struggling to meet ambitious sets of user requirements and steep technical challenges within highly compressed schedules. As currently structured, the programs are at risk of not delivering intended capabilities for the first spiral of FCS, slated to start in fiscal year 2008.

The JTRS Cluster 1 program—a program to develop radios for ground vehicles and helicopters—began development with an aggressive schedule, immature technologies, and a lack of clearly defined and stable requirements. As currently designed, the radio will only have a transmission range of only 3 kilometers—well short of the required 10 kilometers—and will not meet security requirements for operating in an open networked environment. The program's struggle to mature and integrate key technologies has contributed to significant cost and schedule growth. A recent review of the program concluded that the current program structure is not executable, and in April 2005, DOD directed the Army to stop work and notify the contractor that it was considering terminating the contract.

Meeting requirements for JTRS Cluster 5 radios—miniaturized radios, including those that soldiers carry—is even more technically challenging given their smaller size, weight, and power needs. The smallest of these radios weighs only about 1 pound, compared with 84 pounds for Cluster 1 radios. Several programmatic changes and a contract award bid protest have further slowed program progress. The Army is considering options for restructuring the program to meet the needs of FCS and address the technical issues encountered in the Cluster 1 program.

The Army does not expect to fully mature the technologies for WIN-T—communications equipment that supports an expanded area of battlefield operations and interfaces with JTRS radios—when production begins in March 2006. Moreover, the compressed schedule assumes nearly flawless execution and does not allow sufficient time for correcting problems. Significant interdependencies among the critical technologies further increase overall program risk. The program was directed to deliver networking and communications capabilities sooner to meet near-term warfighting needs and synchronize with the restructured FCS program. A plan for how to develop and field WIN-T capabilities sooner to address FCS needs remains undetermined.

According to Army network system integration officials, SOSCOE—the operating software to integrate the communications network—may not reach the necessary technical maturity level required to meet program milestones. In addition, top-level FCS requirements are still evolving and have not been translated into more detailed specifications necessary for writing SOSCOE software.