Integrated Tactical Network (ITN)

The Army is transitioning the Integrated Tactical Network (ITN) away from the Middle Tier of Acquisition (MTA) approach of rapidly prototyping and fielding commercial off-the-shelf (COTS) equipment and is moving towards a continuous experimentation and modernization effort. The Army has positioned the ITN to continue to experiment with the tactical network to move from brigade- to division-centric design. The Army was unable to adequately test the equipment for effectiveness, suitability, and survivability due to its inability to execute the DOT&E-approved test and evaluation strategy (TES) of Capability Set (CS) 23.

SYSTEM DESCRIPTION

The ITN is an effort to rapidly prototype and field equipment to modernize Army tactical communications. It is a system of systems utilizing commercial and non-developmental items and services to supplement currently fielded program of record (POR) components in support of the Army's Network Modernization Strategy. It provides system interoperability and continuity through the procurement of enhanced tactical communication equipment, ancillaries, and related services. The ITN brings new commercial components and network transport capabilities to lower echelons within the Army's tactical network environment. The ITN products are designed around two-year product cycles called capability sets (CSs).

The first CS, known as CS 21 ITN, consists of the COTS single-channel tactical radios, dual-channel headsets, variable height antennas (VHAs), high-capacity

line-of-sight radios, tactical radio gateways, and mobile broadband kits (MBKs) that enable communications through Secret and sensitive but unclassified - encrypted (SBU-E) enclaves. The SBU-E enclave allows commanders the flexibility to balance security and connectivity based on mission need. CS 21 provides an end-to-end network design that is tailored specifically to provide an expeditionary capability to an infantry unit. The prototyping activities for the next capability set (i.e., CS 23) tailored the CS 21, as well as emerging technologies, to support Stryker formations.

MISSION

ITN-equipped brigade combat teams (BCTs) conduct multi-domain operations in the joint operating environment with essential mission command capabilities throughout a full range of military operations. ITN-equipped BCTs conducts mission command with a network in congested and contested environments at the point of need. The CS 21 equipment is intended to provide tactical voice and data across the tactical brigade down to dismounted soldiers. The CS 23 ITN is an extension of the technologies in CS 21. CS 23 integrates many of these capabilities onto Stryker platforms and units while CS 21 focused solely on the infantry BCT formation. Soldiers using the ITN will have additional options available for their primary, alternate, contingency, and emergency communications plans, as well as the ability to switch communications paths when faced with challenging environments.

PROGRAM

The ITN consists of two MTA programs: one rapid prototyping and the other rapid fielding. Successful products developed during rapid prototyping have the potential to transition to the rapid fielding program. Program Executive Office Command Control Communications – Tactical is the office of primary responsibility to integrate the systems identified by the Army's Network Cross-Functional Team into the ITN.

In the FY21 Annual Report, DOT&E stated that the Army needed to submit a TES for CS 21 for approval. The Army did not submit a TES for DOT&E approval. The ITN MTA prototyping activities to date have resulted in CS 21 transitioning to rapid fielding. In response to the fielding of CS 21 equipment, DOT&E published a rapid fielding report in January 2022, which stated that the lack of an approved test plan and inadequate data prevented an assessment of operational effectiveness, suitability, and survivability. DOT&E recommended that the Army conduct a fully trained brigade-level exercise in a contested environment, equipped with the full complement of CS 21 ITN equipment, study the manpower needed to operate and maintain the ITN equipment, and continue to develop and rapidly prototype the ITN to address identified problems.

DOT&E approved the TES for CS 23 in June 2022. The Army originally intended for the ITN as an effort to rapidly prototype and field equipment to modernize Army tactical communications at battalion and brigade-level networks. The ITN is now transitioning to support division-centric networks, and the Army is working to define those specific changes. The Army intends to close out the rapid prototyping program at the Outcome Determination, and transition to the Tactical Communications Network Evaluation (TCNE) concept in October 2024. The TCNE will provide continuous test and evaluation to include user feedback, lab-based risk reduction and concept development. The Army signed a rapid fielding acquisition decision memorandum in June 2023 to continue non-recurring engineering efforts for the program until July 2024 and to return in 2QFY24 with a path forward and details of requirements trace to support MTA closeout. The Army Futures Command is in the process of updating the requirements for the future of ITN, pending Army strategic decisions.

» MAJOR CONTRACTORS

MBK

- 4K Solutions – Midland, Georgia
- Verizon – New York, New York (cellular plan for MBK)

VHA

- Hoverfly Technologies Company – Orlando, Florida
- Lockheed Martin Corporation – Bethesda, Maryland
- Teledyne FLIR, LLC – Wilsonville, Oregon

Other

- General Dynamics Mission Systems– Fairfax, Virginia
- KLAS Telecom – Herndon, Virginia
- PAR Government – Raleigh, North Carolina
- Samsung Galaxy S7 - San Jose, California
- Sierra Nevada Corporation Integrated Mission Systems – Hagerstown, Maryland
- Silvus Technologies, Inc. – Los Angeles, California
- Trellisware Technologies, Inc. – San Diego, California
- L3Harris Technologies, Inc. – Melbourne, Florida
- Thales Group – Clarksburg, Maryland

TEST ADEQUACY

The Army began an operational demonstration of the ITN at Joint Multinational Readiness Center in Hohenfels, Germany from January to February 2023. DOT&E approved the test plan in January 2023 with noted concerns that there was not a single entity responsible for data collection, reduction, and validation and that many required elements were absent from the test plan. The test plan did not reflect the details described in the DOT&E-approved TES, nor what the Army presented to DOT&E at the test concept brief. DOT&E observed the operational demonstration, which was terminated early due to real-world deployment of the test unit.

The operational demonstration was intended to focus on CS 23 COTS equipment for the Stryker BCT with 2nd Cavalry Regiment and address the recommendations from the DOT&E rapid fielding report published in January 2022. Because of the premature termination of the operational demonstration, as well as the data shortfalls identified by DOT&E in the test plan, testing was not adequate to support an assessment.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

DOT&E is unable to make an assessment of the operational effectiveness, suitability, and cyber survivability of ITN due to premature termination of the operational demonstration and inadequate data collection.

RECOMMENDATIONS

As stated in the FY21 Annual Report and repeated in the January 2022 rapid fielding report, the Army should:

1. Conduct a fully trained brigade-level exercise in a contested environment, equipped with the full complement of CS 21 ITN equipment.
2. Study the manpower needed to operate and maintain the ITN equipment.
3. Continue to develop and rapidly prototype the ITN to address identified problems.
4. Update the TES and event test plans for CS 23 ITN to enable an assessment of operational effectiveness, suitability, and survivability.
5. Identify a single entity responsible for data collection, reduction, and validation prior to conducting all future operational tests.