

TACTICAL INTELLIGENCE TARGETING ACCESS NODE

by Mr. Larry Glidewell

Introduction

The rapid technology innovation of the past 20 years affects our everyday life—from smartphones, to driver assisted automobiles, to the latest developments in smart home automation. The Army is also adapting to the progress of technology. The work Army Tactical Exploitation of National Capabilities (TENCAP) and Program Manager Intelligence Systems and Analytics (PM IS&A) are doing will in large part support the way the Army fights future conflict. Falling within the Program Executive Office Intelligence, Electronic Warfare and Sensors, Army TENCAP and PM IS&A are leading the development of the Tactical Intelligence Targeting Access Node (TITAN), the Army's next-generation intelligence, surveillance, and reconnaissance ground station.

Concept Development

A Combined Arms Center study on multidomain operations/joint all-domain operations, which identified “deep sensing” as the number one gap in the Army's ability to conduct large-scale combat operations, led to the development of TITAN. TITAN will receive massive volumes of intelligence, surveillance, and reconnaissance data from current and future space-, high altitude-, aerial-, and terrestrial-layer sensors. It leverages artificial intelligence and machine learning technologies to reduce the burden for intelligence analysts and rapidly transforms data into intelligence. The data produced from TITAN, such as target indications and warnings, will provide multidiscipline intelligence support to targeting that will feed fires command and control networks and directly enable long range precision fires. In addition, TITAN will rapidly provide the commander with situational awareness and situational understanding, supporting maneuver and mission command even in disconnected, intermittent, low bandwidth, and antiaccess and area denial scenarios. Ultimately, TITAN will reduce the sensor to shooter timeline and enable the Army to conduct multidomain operations/joint all-domain operations.

As a next generation expeditionary ground station, TITAN will initially include two design variants—advanced and basic—which will deliver tailored capabilities that support commanders at multiple echelons. These systems will include automated target recognition, data links, and network connections to sense deep into strategic areas of operation. They will leverage artificial intelligence and machine learning to accelerate and automate processing and exploitation of received data. The systems have the ability to incorporate new technology and capability through realization of modular open-system architecture to keep pace with our adversaries and the evolving threat. In a statement for this article, the PM IS&A said, “TITAN will collect data from terrestrial, space, and aerial sensors and deliver targetable data to systems while providing commanders with multi-source intelligence support that speeds up the decision-making process at scale and speed needed in a JADO [joint all-domain operations] environment.”¹

Prototype and Program of Record

To support the Army's Sensor to Shooter Campaign of Learning, the current force Advanced Miniaturized Data Acquisition System Dissemination Vehicle and Remote Ground Terminal systems were deployed as “TITAN surrogates” for early TITAN risk-reduction during key exercises and demonstrations. Lessons learned from surrogate demonstrations informed development of the TITAN pre-prototype (TPP) and TITAN Program of Record (PoR).

Army TENCAP manages the TTP and is leveraging an Other Transaction Authority contract through the Defense Innovation Unit for flexible and rapid acquisition capabilities and systems development. This method allowed TENCAP to dynamically move from initial concept, to prototype, to fielding the first TPP system to the 1st Multi-Domain Task Force in under 24 months.



Soldiers with the 173rd Infantry Brigade Combat Team observe an impact zone from a forward observation point during Dynamic Front 2019 in Torun, Poland, March 2019. (Photo by SPC Christina Westover, 1st AD)

The TPP will highlight a first of its kind tactical cross domain solution internal to the system, which allows intelligence data to seamlessly move across security enclaves to deliver information that supports fires, maneuver, and mission command. In addition, the TPP employs automation of intelligence fusion, target recognition, identification, and geolocation from multiple sensors. The automation allows for leveraging mature artificial intelligence and machine learning technology to reduce the sensor to shooter timelines, generate target nominations, and fuse the common intelligence picture. Early employment and demonstration of the TPP also supports and informs the TITAN PoR (managed under PM IS&A) by providing lessons learned, design details, and Soldier feedback to PM IS&A during early prototyping. The TITAN PoR will leverage some components of the TPP through the Space Ground Component Kit.


PM IS&A is also using an Other Transaction Authority contracting approach for PoR prototyping, through the C5 Consortium. Two vendors are on contract as part of a 14-month competition to each build a TITAN advanced prototype. Core focus areas for this competitive prototyping phase are human systems integration and user-centric design. TITAN is executing a series of Soldier Touch Points for the vendors to receive and incorporate feedback into their solution and ensure the systems meet the user's needs. Soldier Touch Points provide the competing vendors the opportunities to obtain Soldier feedback for building the best possible end user solution and provide metrics that will be factored into the up-select decision operational prototypes for first unit issue. First unit issues will continue to receive user feedback, support data collection for test and evaluation activities, and inform requirements for additional prototypes.

The PM IS&A said, "The methodology of using Human Systems Integration during competitive prototyping not only provides our competing vendors with the opportunity to obtain Soldier feedback to build the best possible solution for

end users, but also provides metrics that will be factored into the final selection decision."²

TITAN vendors will complete their initial system prototype build for the advanced variant, which will be demonstrated and evaluated at a capstone event in the fourth quarter of FY 2023. The Army will then select a single vendor and award for a prototype maturation phase in early FY 2024, which will continue prototype maturation and build additional advanced configurations, along with several basic prototypes. All prototypes will be delivered to the field for operational use and user feedback. They will also support developmental testing and an operational assessment prior to production start in FY 2026.

Conclusion

TITAN is on track to support Army modernization efforts and multidomain operations/joint all-domain operations in 2030 and beyond. PM IS&A and Army TENCAP plan to grow capability and continue to modernize the TITAN fleet by integrating additional data sources, leveraging continued advances in artificial intelligence and machine learning, integrating with emerging sensors across all layers, and increasing the expeditionary nature of TITAN systems. 

Endnotes

1. Christopher Anderson, Colonel U.S. Army, correspondence with author, n.d.
2. Ibid.

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