

Warfighter Information Network – Tactical (WIN-T)

Executive Summary

- Warfighter Information Network – Tactical (WIN-T) Increment 2 upgraded the design of legacy Point of Presence (PoP) and Soldier Network Extension (SNE) assemblages. The program intends for the new Next Generation (Next Gen) design to better meet the size, weight, and power requirements of Army tactical vehicles.
- In April 2018, the Army Test and Evaluation Command (ATEC) presented a risk assessment briefing to DOT&E to recommend the proper size and scope of a Next Gen PoP and SNE test to support a planned April 2019 Amended Materiel Release decision. DOT&E approved the ATEC strategy of a developmental test combined with first unit equipped observations.
- The Army conducted the May 2018 Next Gen PoP and SNE developmental test, a cybersecurity assessment, safety certifications, a logistics demonstration, and collected first unit equipped data to produce an ATEC assessment to support the planned materiel release decision.
- ATEC assessed the Next Gen PoP and SNE as meeting or exceeding demonstrated legacy performance, reliability, and cybersecurity requirements. Along with size, weight, and power savings, the new capability recovered two crew seats in Next Gen equipped Stryker combat vehicles, and introduced a new capability to connect the WIN-T Satellite Tactical Terminal (STT).
- At the September 2018 WIN-T Increment 2 Configuration Steering Board (CSB), the Army acknowledged the 2018 WIN-T Increment 2 Selected Acquisition Report (SAR) will be the program’s final SAR since they have expended over 95 percent of their funding. To continue network modernization, the Army intends to use Tactical Network Transport Modification in Service (TNT MIS) funding for fielding future tactical network capabilities. The Army and DOT&E are working to produce a T&E strategy for the numerous capabilities within the TNT MIS.

System

- The Army intends WIN-T to provide reliable, secure, and seamless communications for units operating at theater level and below.
- The WIN-T program consists of three funded increments. In May 2014, the Defense Acquisition Executive approved the Army’s request to stop development of the Increment 3 aerial tier of networked, airborne communications relays and limit Increment 3 to network management and satellite waveform improvements.
 - Increment 1: “Networking At-the-Halt” enables the exchange of voice, video, data, and imagery throughout the tactical battlefield using a Ku-band and Ka-band satellite based network. The Army has fielded WIN-T Increment 1 to its operational forces.



**Next Generation (NG)
Point of Presence (PoP)**



**Next Generation (NG)
Soldier Network Extension (SNE)**

1 - Network Centric Waveform (NCW) Antenna
2 - Highband Networking Waveform (HNW) Antenna

- Increment 2: “Initial Networking On-the-Move” provides command and control on-the-move down to the company level for maneuver brigades and implements an improved network security architecture.
 - WIN-T Increment 2 supports on-the-move communications for commanders with the addition of the PoP and the SNE, and provides a mobile network infrastructure with the Tactical Communications Node. It employs a terrestrial Highband Networking Waveform and a satellite Network Centric Waveform to support its network mobility goals.
 - WIN-T Increment 2 provides a downsized, air transportable variant of High Mobility Multipurpose Wheeled Vehicle (HMMWV)-mounted configuration items to support light brigades.
 - WIN-T Increment 2 upgraded the design of the legacy PoP and SNE assemblages. The program intends for the new Next Gen design to better meet the size, weight, and power requirements of Army tactical vehicles. The Next Gen PoP and SNE are the final enhancements provided by WIN-T Increment 2. TNT MIS will provide funding for future enhancements and tactical network modernization initiatives.
- Increment 3: “Full Networking On-the-Move” was to provide full mobility mission command for all Army field commanders, from theater to company level using networked airborne communication relays. With program reductions, WIN-T Increment 3 now provides enhanced network operations and an improved satellite waveform to WIN-T Increments 1 and 2.

Mission

- Commanders at theater level and below will use WIN-T to:
- Integrate satellite-based communications capabilities into an everything-over-Internet Protocol network to provide

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connectivity, while stationary, across an extended, non-linear battlefield, and at remote locations (Increment 1).

- Provide division and below maneuver commanders with mobile communications capabilities to support initial command and control on-the-move (Increment 2).

Major Contractor

General Dynamics, Mission Systems – Taunton, Massachusetts

Activity

- WIN-T Increment 2 upgraded the design of legacy PoP and SNE assemblages via an engineering change proposal. The program intends for the Next Gen PoP and SNE to better meet the size, weight, and power requirements of Mine Resistant Ambush Protected All Terrain Vehicles (M-ATVs), HMMWVs, and Stryker combat vehicles. The program conducted non-recurring engineering to integrate Next Gen onto Joint Light Tactical Vehicles, but the Army has not developed a requirement or fielding plan for these system configurations.
- In February 2018, Johns Hopkins University Applied Physics Laboratory conducted a series of cybersecurity scans and penetration tests on the Next Gen configuration items within a representative WIN-T network.
- In April 2018, ATEC presented a risk assessment briefing to DOT&E to recommend the proper size and scope of a Next Gen PoP and SNE test to support a planned April 2019 Amended Materiel Release decision. DOT&E approved the ATEC strategy of a developmental test combined with first unit equipped observations.
- In May 2018, the Army conducted the WIN-T Increment 2 Developmental Test of the Next Gen PoP and SNE at White Sands Missile Range, New Mexico, using M-ATVs and soldiers from the 10th Mountain Division.
- The Army completed safety certification testing of the Next Gen PoP and SNE on M-ATVs, HMMWVs, and Stryker combat vehicles in August and September 2018.
- The Army completed a Logistics Demonstration of the HMMWV Next Gen PoP and SNE configurations in August and September 2018.
- During September to October 2018, ATEC collected Next Gen PoP and SNE observations at the 3rd Brigade, 25th Infantry Division first unit equipped fielding.
- ATEC completed its initial report on the Next Gen PoP and SNE, and will complete its analysis of instrumented and first unit equipped data to finalize an Operational Assessment Report (OAR) in December 2018. This report will support a

Communications Electronics Command Amended Materiel Release decision planned for April 2019.

- At the September 2018 WIN-T Increment 2 CSB, the Army acknowledged the 2018 WIN-T Increment 2 SAR will be the program's final SAR since they have expended over 95 percent of their funding. To continue network modernization, the Army intends to use TNT MIS funding for fielding future tactical network capabilities. The Army and DOT&E are working to produce a T&E strategy for the numerous capabilities within the TNT MIS.

Assessment

- ATEC's initial report on the Next Gen PoP and SNE assessed the new systems as meeting or exceeding demonstrated legacy capabilities using both terrestrial and satellite transmission means. The Next Gen PoP and SNE:
 - Met or exceeded performance, reliability, and maintainability requirements.
 - Did not introduce new cybersecurity vulnerabilities to the WIN-T network.
 - Received safety certification for the M-ATV, and expect to complete safety certifications for the HMMWV and Stryker combat vehicles in January 2019.
 - Recovered two crew seats within Next Gen-equipped Stryker combat vehicles.
 - Introduced a new fiber optic cable connection to allow use of the WIN-T STT.
 - Soldiers recommended improvements on the fiber optic cable connection and signal entry panel.

Recommendations

The Army should:

1. Develop a T&E strategy for the numerous capabilities within the TNT MIS.
2. Implement the recommendations of the ATEC Next Gen PoP and SNE OAR.