

# Terrestrial Layer System Brigade Combat Team (TLS BCT)



**In September 2023, the Army conducted an operational demonstration (Ops Demo) for the Terrestrial Layer System Brigade Combat Team (TLS BCT) Stryker BCT (TLS SBCT). Based on the results, the Army decided to separate TLS SBCT into two distinct variants: signals intelligence (SIGINT) and electronic warfare (EW), and as a result, DOT&E did not publish a report.**

**In November 2023, the Army conducted an Ops Demo for TLS BCT Manpack (TLS BCT MP). DOT&E published a classified TLS BCT MP Ops Demo report in May 2024. TLS BCT MP transitioned into Middle Tier of Acquisition (MTA) rapid fielding (RF) in April 2024. The Army began equipping TLS BCT MP to select infantry BCT (IBCT) units as an early capability in September 2024. The Army is planning an operational assessment (OA) in June 2026 to support fielding to all BCT.**

## SYSTEM DESCRIPTION

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The Army envisions the TLS BCT as the next generation tactical system, delivering an integrated suite of SIGINT, EW, and cyberspace operations capabilities (future objective requirement) to enable multi-domain operations within the SIGINT Collection and EW Team. The Army plans to deploy TLS BCT variants to SBCT, armored BCT (ABCT), and IBCT units.

TLS BCT modernizes the terrestrial layer at the BCT-level by expanding the capabilities to control the electromagnetic spectrum (range of frequencies), thereby allowing commanders greater access and control of the spectrum, using ground assets assigned to the BCT. This expanded ground-based capability will provide indications and warnings, force protection, and situational awareness to influence the commander's decision cycle, improve targeting timeliness and accuracy, and provide the maneuver commander with electronic attack and offensive cyberspace operation options to deny, degrade, disrupt, or otherwise manipulate the targeted force.

The Army intends to integrate the TLS SBCT variant onto the Stryker Medical Evacuation Double-V Hull A1 and the TLS ABCT variant onto one of the Armored Multi-Purpose Vehicle variants. The TLS IBCT variant will be a man-packable configuration known as the Manpack (TLS BCT MP). Each variant is designed to provide the

warfighter with critical situational awareness of the enemy through detection, identification, location, exploitation, and disruption of enemy signals of interest (communications and non-communications) while operating on-the-move and at-the-halt.

## MISSION

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The TLS BCT provides robust line-of-sight and beyond line-of-sight voice and data communications capabilities to interface directly with brigade, division, corps and Army-level collection and analysis elements, and with on-platform mission command systems. The TLS BCT operates on-the-move, at-the-halt, or dismounted. The TLS BCT will operate near the forward lines of operating troops.

## PROGRAM

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TLS SBCT entered the MTA rapid prototyping pathway in May 2020. DOT&E approved the Ops Demo test plan in August 2023. Following the Ops Demo for TLS SBCT in September 2023, the Army decided to separate the SIGINT capability from the EW capability. The Army is updating the current design for SIGINT-only capability and developing a new design for the EW capability. The Army plans to conduct a follow-on Ops Demo for TLS SBCT SIGINT in June 2026. An Ops Demo for the EW variant will follow sometime later.

TLS BCT MP entered the MTA rapid prototyping pathway in May 2020. DOT&E approved the Ops Demo test plan in October 2023.

Following the Ops Demo, the Army transitioned TLS BCT MP to the MTA RF pathway in April 2024. The first TLS BCT MP unit was equipped in September 2024. The Army plans to conduct an OA in June 2026.

The Army has deferred T&E of the TLS ABCT and TLS BCT EW variants.

### » MAJOR CONTRACTORS

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- Lockheed Martin Corporation – Liverpool, New York (SBCT)
- Mastodon Design, LLC, a CACI International Inc. company – Rochester, New York (IBCT MP)

## TEST ADEQUACY

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The Army conducted an Ops Demo for TLS SBCT in September 2023 to support an MTA RF transition decision, with observation by DOT&E personnel. The Army was unable to conduct the Ops Demo in accordance with the DOT&E-approved plan due to a lack of accredited threat emitters to test realistic operational signal density and congestion for electromagnetic systems. However, the Ops Demo was adequate to identify operational issues related to combining SIGINT and EW capabilities onto one platform. The Army has decided to separate them into two distinct systems. DOT&E expects the Army to submit a TES for the TLS SBCT SIGINT variant in December 2024. The EW variant will follow sometime later.



The Army completed a cyber tabletop exercise for TLS SBCT in October 2023 at the National Cyber Range, Florida, to assess the system architecture, complete attack space, supply chain, and potential points of cyber ingress. With support from the program office, operational test agencies, cyber test teams, and DOT&E, the Army investigated all ways to potentially cyber compromise the TLS SBCT.

The Army conducted an Ops Demo for TLS BCT MP in November 2023 to support an MTA RF transition decision, with observation by DOT&E personnel. As with TLS SBCT, the Army was unable to conduct the Ops Demo in accordance with the DOT&E-approved plan due to the lack of accredited threat emitters as well as restrictions on jamming duration. However, the Ops Demo was adequate to support the program transition to MTA RF and a decision to field an early capability to select IBCT units. DOT&E published a classified TLS BCT MP Ops Demo report in May 2024. The Army will submit a TES for TLS BCT MP MTA RF phase in April 2025 and test plan for the OA in June 2026.

## PERFORMANCE

### » EFFECTIVENESS

The TLS SBCT Ops Demo did not provide sufficient data to assess operational effectiveness. The Army will now conduct separate Ops Demos for SIGINT and EW. DOT&E will report on TLS SBCT

SIGINT and EW operational effectiveness after the completion of the Ops Demos.

TLS BCT MP demonstrated the potential to be operationally effective. Soldiers equipped with TLS BCT MP were able to detect enemy emitter signals with some error. The TLS BCT MP SIGINT capability did not provide soldiers with information on the source of the emission. TLS BCT MP successfully conducted electronic attack and disrupted enemy voice communications. The Army's intended networks may not provide sufficient data rates to support the TLS BCT MP electromagnetic support missions. Additional details can be found in DOT&E's classified TLS BCT MP Ops Demo report.

### » SUITABILITY

The TLS SBCT Ops Demo did not provide sufficient data to assess operational suitability. The Army will now conduct separate Ops Demos for SIGINT and EW. DOT&E will report on TLS SBCT SIGINT and EW operational suitability after the completion of the Ops Demos.

TLS BCT MP demonstrated the potential to be operationally suitable. Limited TLS BCT MP operator training restricted the evaluation of the system to only those tasks conducted during the Ops Demo. TLS BCT MP maintenance training was not executed, tested, and evaluated. TLS BCT MP weight and power demands could limit dismounted mission duration. The TLS BCT MP Ops Demo uncovered one safety concern: TLC BCT MP antennas

must be kept at least 10 inches (24 centimeters) away from the human body to ensure a safe separation distance necessary to prevent over exposing soldiers to radiofrequency radiation. Additional details can be found in DOT&E's classified TLS BCT MP Ops Demo report.

### » SURVIVABILITY

DOT&E cannot report on the cyber survivability of the TLS SBCT because the Army is making a significant change by separating the SIGINT and EW capabilities. DOT&E expects the Army to include cyber survivability testing in future TESs for the TLS SBCT SIGINT and EW variants.

The Army did not execute any kinetic survivability testing in conjunction with the Ops Demo for TLS SBCT. DOT&E expects the Army to include kinetic survivability testing in future TESs for the TLS SBCT SIGINT and EW variants.

Cyber and kinetic survivability testing are not required for TLS BCT MP.

## RECOMMENDATIONS

PEO IEW&S should:

1. Submit a TES for each variant of TLS BCT to DOT&E for approval. For the TLS SBCT variants, these should include cyber and kinetic survivability testing.
2. Address safety concerns discovered during TLS BCT MP Ops Demo.

3. Address software and hardware integration deficiencies discovered during TLS BCT testing to date.
4. Accredite the threat emitters needed for operational testing.
5. Submit test plans for TLS SBCT and Manpack variants.
6. Conduct an operationally realistic OA for TLS BCT MP, to include assessment of the system to enable dismounted soldiers to conduct full end-to-end electromagnetic missions against accredited threat emitters.