

# Directed Energy Maneuver-Short Range Air Defense (DE M-SHORAD)



In February 2024, the Army deployed the four Directed Energy Maneuver-Short Range Air Defense (DE M-SHORAD) prototype vehicles to support OCONUS operations. This deployment prevented the start of scientific and technical testing planned by the Rapid Capabilities and Critical Technologies Office (RCCTO). In June 2024, the Army Test and Evaluation Command (ATEC) conducted a three-day controlled assessment during the unit's OCONUS deployment. The limited data from this event will not be adequate to support DOT&E's early assessment of the system's operational effectiveness, lethality, suitability, and survivability. The Army continues collecting relevant operational insights by conducting an In-Theater Assessment (ITA) during the unit's OCONUS deployment.

## SYSTEM DESCRIPTION

The DE M-SHORAD integrates sensor and shooter capabilities onto a Stryker Mortar Carrier Double V-Hull A1 vehicle to defend supported forces against unmanned aircraft systems that are within Groups 1 – 3; fixed- and rotary-wing aircraft threats; and rockets, artillery, and mortars. The primary weapon is a 50-kilowatt spectral beam combined laser, powered by lithium nickel cobalt aluminum oxides (Li-NCA) batteries that are recharged by diesel generators onboard the vehicle.

DE M-SHORAD is planned to augment M-SHORAD Increment 1 vehicles armed with kinetic weapons (e.g., Stinger missiles, 30mm chain gun, and 7.62mm machine gun) as part of short-range air defense (SHORAD) battalions.

## MISSION

Commanders will employ the DE M-SHORAD units and vehicles to provide air defense to maneuver units and fixed sites across the battlespace. The vehicle will be used to defeat unmanned aerial systems, rockets, artillery and mortar rounds, and fixed- and rotary-wing aircraft. DE M-SHORAD vehicles are organized as platoons of four vehicles assigned to Army SHORAD battalions.

## PROGRAM

DE M-SHORAD is a prototyping effort led by RCCTO under their Other Transaction Authority. The program does not have an acquisition strategy and it's undetermined when the DE M-SHORAD will transition to an acquisition pathway. The Army has procured four prototype vehicles and awarded an Other Transaction Authority contract for two additional prototype vehicles of similar design.

- In May 2019, the Secretary of the Army initiated the DE M-SHORAD program, approving the initial Directed Energy Strategy and directed RCCTO's Directed Energy Program Office to develop and deliver the DE M-SHORAD prototype system.
- In September 2023, after completing contractor and government acceptance testing, RCCTO delivered four prototype DE M-SHORAD vehicles to the 4-60th Short-Range Air Defense Artillery Battalion at Fort Sill, Oklahoma, establishing the first DE M-SHORAD platoon.
- In January 2024, the Army Aviation and Missile Command issued an urgent materiel release authority for the first four prototypes. The Air Transportability Test Loading Agency awarded C-17 transportability certification in January 2024.

DOT&E placed the DE M-SHORAD program on oversight in March

2024. The program does not have a DOT&E-approved TES.

The Army deployed the DE M-SHORAD prototype vehicles OCONUS to support ongoing operations. Since the vehicles have been placed into operational use during the OCONUS deployment, DOT&E is required to publish an early fielding report, which will be released in FY25.

### » MAJOR CONTRACTORS

- Kord Technologies, Inc., a wholly owned subsidiary of KBR, LLC – Huntsville, Alabama
- RTX – Arlington, Virginia
- General Dynamics Land Systems – Warren, Michigan

## TEST ADEQUACY

In February 2024, the Army deployed the four DE M-SHORAD prototype vehicles to support OCONUS operations. This deployment prevented RCCTO from starting the scientific and technical testing planned for FY24. Adequate testing to demonstrate DE M-SHORAD's operational effectiveness, lethality, suitability, and survivability cannot begin until either the prototype vehicles return to CONUS or the additional prototype vehicles are built and delivered to the Army.

In June 2024, ATEC conducted a three-day controlled assessment. The test plan was not provided to DOT&E for review and approval, nor was it observed by DOT&E. Given

the limited data, DOT&E is unable to provide an early evaluation of DE M-SHORAD's operational effectiveness, lethality, suitability, and survivability.

The Army is utilizing the deployment to conduct an ITA of DE M-SHORAD. The ITA is not being conducted in accordance with a test plan, nor being observed by ATEC or DOT&E.

## PERFORMANCE

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### » EFFECTIVENESS, LETHALITY, SUITABILITY, AND SURVIVABILITY

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DOT&E has insufficient data to assess DE M-SHORAD's operational effectiveness, lethality, suitability, and survivability. Since the vehicles have been placed into operational use during the OCONUS deployment, DOT&E is required to publish an early fielding report, which will be released in FY25.

## RECOMMENDATION

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The Army should:

1. Develop a TES for DOT&E's approval to adequately assess DE M-SHORAD's operational effectiveness, lethality, suitability, and survivability.