

Ground/Air Task Oriented Radar (G/ATOR)

Executive Summary

- The Marine Corps Operational Test and Evaluation Activity (MCOTEA) conducted the Ground Air/Task Oriented Radar (G/ATOR) Block 1 and Block 2 IOT&E.
- The DOT&E IOT&E report included test and evaluation results from both IOT&Es as well as supplemental testing conducted in Point Mugu, California.
- This report supported the Full-Rate Production decision conducted May 23, 2019.

System

- The AN/TPS-80 G/ATOR is a short- to medium-range, air-cooled Active Electronically Scanned Array radar under development for the Marine Corps. It will replace up to five current radar systems and augment the AN/TPS-59 long-range radar.
- The Marine Corps is developing G/ATOR in three blocks.
 - Block 1 develops the basic hardware and provides Air Defense/Surveillance Radar capability. It replaces the AN/UPS-3, AN/MPQ-62, and AN/TPS-63 radar systems.
 - Block 2 is a Ground Weapons Locating Radar to acquire, track, and classify hostile indirect fire and replaces the AN/TPQ-46 radar system.
 - The Program Management Office (PMO) will incorporate the upgrades originally intended for Block 3 as a series of engineering changes.
 - Block 4 replaces the AN/TPS-73 radar system for Expeditionary Airport Surveillance Radar capability, which will be a future development effort.
- The G/ATOR baseline system configuration is comprised of three subsystems:
 - The Radar Equipment Group consists of the radar array mounted on an Integrated Mobile Pallet trailer towed by a Medium Tactical Vehicle Replacement.
 - The Power Equipment Group includes a 60-kilowatt generator and associated power cables mounted on a pallet carried by the Medium Tactical Vehicle Replacement.



- The Communications Equipment Group provides the ability to communicate with and control the radar. It is mounted inside the cargo compartment of a High Mobility Multi-purpose Wheeled Vehicle.
- The first six low-rate initial production systems have receiver/transmitter modules built using Gallium Arsenide semiconductor technology. Subsequent systems, representing the majority of the production buy, will have Gallium Nitride receiver/transmitter modules.

Mission

The Marine Air-Ground Task Force commander will employ:

- Air Combat Element units equipped with G/ATOR Block 1 to provide enhanced situational awareness and additional capabilities to conduct short- to medium-range air defense and surveillance radar missions.
- Ground Combat Element units equipped with G/ATOR Block 2 to provide ground weapons locating capability for conducting counterfire missions.

Major Contractor

Northrop Grumman Mission Systems – Linthicum, Maryland

Activity

- MCOTEA conducted separate IOT&Es of G/ATOR Block 1 and Block 2 in accordance with DOT&E-approved test plans.
- MCOTEA conducted the Block 1 IOT&E, including a cybersecurity assessment, from September 16 to October 13, 2018, in Marine Corps Air Station, Yuma, Arizona.
- MCOTEA conducted the Block 2 IOT&E, including a cybersecurity assessment, from November 25 to

December 14, 2018, at Marine Corps Air Ground Combat Center, Twentynine Palms, California.

- The PMO performed additional testing April 29 to May 3, 2019, to demonstrate system performance in a littoral environment against subscale targets in Naval Base Ventura County Point Mugu, California.

FY19 NAVY PROGRAMS

- The Assistant Secretary of the Navy for Research, Development and Acquisition conducted the Full-Rate Production decision on May 23, 2019.

Assessment

Testing was adequate to determine system operational effectiveness, suitability, and survivability. However, the tests did not include all required types of targets or operational environments. Details and results are in the May 2019 classified DOT&E IOT&E report.

Recommendations

The PMO and MCOTEA should:

1. Where feasible, conduct test, including concurrent test events, in operationally realistic environments to assess performance against all required types of targets.
2. Verify correction of deficiencies identified during IOT&E and reported in the May 2019 DOT&E IOT&E report.