

Multi-Static Active Coherent (MAC) System

Executive Summary

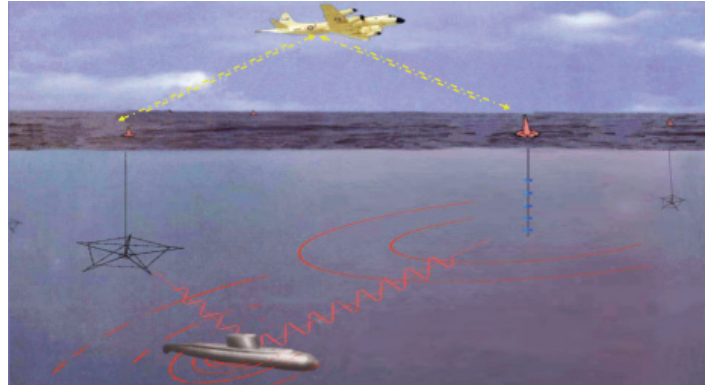
The Navy continued FOT&E of the submarine search capability provided by the Engineering Change Proposal (ECP) 2 version of P-8A aircraft using Multi-Static Active Coherent (MAC). The Navy has now completed 11 of the 24 planned flights needed to complete the submarine search portion of the ECP 2 FOT&E. Analysis remains in progress and no preliminary assessment is available.

System

- The MAC system is an active sonar system composed of two types of sonobuoys (source and receiver) and an acoustic processing and aircraft mission computer software suite. It is employed by the Navy's maritime patrol aircraft (P-3Cs and P-8As) to search for and locate threat submarines in a variety of ocean conditions.
- Initial MAC capability (MAC Phase I) was delivered for P-3C aircraft in FY13 and for P-8A aircraft in FY15. MAC Phase II is expected to deliver in FY24.
- The P-8A aircraft delivers incremental improvements, including submarine search capability, in ECPs to the P-8A aircraft. ECP 2 of the P-8A aircraft included system software and display modifications to MAC Phase I.

Mission

The Navy intends for P-3C and P-8A crews equipped with MAC to support the search, detect, and localization phases of the ASW



mission. MAC is particularly focused on large-area search for threat submarines.

Major Contractors

- Lockheed Martin – Manassas, Virginia
- Sparton Electronics Florida, Inc. – De Leon Springs, Florida
- Ultra Electronics, Undersea Sensor Systems Incorporated (USSI) – Columbia City, Indiana
- Boeing Defense, Space, and Security – St. Louis, Missouri

Activity

- In FY13, the Navy delivered initial MAC capability (MAC Phase I) for P-3C aircraft.
- In July 2014, DOT&E submitted a classified IOT&E report for MAC Phase I installed on P-3C Aircraft.
- In FY15, the Navy delivered initial MAC capability (MAC Phase I) for P-8A aircraft. The Navy modified MAC to operate with P-8A specific systems.
- In December 2015, DOT&E submitted a classified FOT&E report for MAC Phase I integration on P-8A aircraft.
- In FY16, the Navy delivered ECP 2 for P-8A aircraft. ECP 2 included MAC system software and display improvements specific to its use on P-8A aircraft.
- Between December 2016 and May 2017, the Navy completed 7 of 24 planned flights for FOT&E of the submarine search capability provided by the ECP 2 version of P-8A aircraft using MAC.

- In July 2018, the Navy continued FOT&E of the submarine search capability provided by the ECP 2 version of P-8A aircraft using MAC, completing an additional 4 of the 24 flights planned for this FOT&E. The Navy conducted the testing in accordance with DOT&E-approved test plans.

Assessment

Analysis is in progress for completed testing on the submarine search capability of the ECP 2 version of P-8A aircraft using MAC. No preliminary assessment is available.

Recommendation

1. The Navy should continue to pursue opportunities to complete FOT&E on the ECP 2 version of the P-8A aircraft using MAC as soon as feasible.

FY18 NAVY PROGRAMS