

Jane's Missiles and Rockets

ESSM Block 2 completes GTV-1 flight test

Publication: Jane's Missiles and Rockets

Author: Richard Scott, London

Section: Anti-Missile

Date posted: 20 July 2018

Raytheon and the US Navy (USN) have successfully executed a first guided flight test of the RIM-162 Evolved SeaSparrow Missile (ESSM) Block 2 missile.

Performed from the US Navy's (USN's) Self-Defense Test Ship (SDTS) in June, the Guided Test Vehicle-1 (GTV-1) event saw the new Block 2 guidance section exercised in flight for the first time.

The ESSM Block 2 programme is a co-operative effort between the USN and its 11 NATO SeaSparrow Consortium partners (Australia, Belgium, Canada, Denmark, Germany, Greece, the Netherlands, Norway, Portugal, Spain and Turkey) to develop an upgraded ESSM 'front-end' to counter the evolving anti-ship cruise missile threat.

Raytheon Missile Systems was in April 2015 awarded a USD517.3 million contract by the US Naval Sea Systems Command for ESSM Block 2 Engineering and Manufacturing Development. The USN is funding 40% of the development programme, with international partners sharing the remaining 60%.

The Block 2 all-up round builds on the existing semi-active radar homing RIM-162 ESSM Block 1, but replaces the legacy Block 1 guidance section with a dual-mode active/semi-active X-band radar seeker that increases the diameter of the missile front end section to 10 inches. The introduction of an active seeker channel will support terminal engagement without the requirement for target illumination by the launch ship.

Warhead improvements and an updated guidance and control section (common to the AIM-120C-7 Advanced Medium Range Air-to-Air Missile Form Fit Function Refresh programme) will also be embodied. The Block 2 missile will also use a new Dual Band Transceiver (S- and X-band) for in-flight data communications to enable control and management of the missile during flight.

The GTV-1 flight evaluation followed on from two successful Controlled Test Vehicle (CTV) firings in June 2017. Both flown from the SDTS, these two pre-programmed flights (CTV-1 and CTV-2) were performed to demonstrate safety, control and structural integrity of the ESSM Block 2 airframe.

GTV-1 was performed on 12 June off the SDTS on the Point Mugu Sea Range off California. Following a high elevation launch from a MK 29 launcher to simulate egress from a vertical launcher, the telemetered missile used the active seeker mode to engage a BQM-74E aerial target. The missile achieved a direct skin-to-skin intercept to destroy the target.

GTV-2, also from the SDTS, is scheduled to be flown in November this year. This second flight test will exercise the missile in its 'legacy' semi-active mode.

According to Todd Callahan, Raytheon Missile Systems' Naval and Area Mission Defense vice president, the programme is planning to go to a Milestone C approval to start Low Rate Initial Production (LRIP) in December this year. "We are looking to get on contract before the end of this year," he told *Jane's*. "We are already working our proposal for LRIP, and are trying to gather up LRIP Lots 1, 2 and 3 in one swoop to give the navy some savings."

A third ESSM Block 2 guided test firing is currently planned for February 2019. *Jane's* understands that this flight test will exercise the missile in both active and semi-active modes to demonstrate function and performance using alternative missile guidance methodologies.

Comment

ESSM Block 2 is planned to achieve initial operating capability with the US Navy in 2020. More than 2,500 missiles are planned for production to meet needs across the partner nations.