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## ANZAC upgrade completes final acceptance trial

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The Royal Australian Navy (RAN) ANZAC-class frigate HMAS Perth has completed the final Operational Acceptance Trial for the Australian-designed phased array radar (PAR) and combat management system (CMS) upgrades underpinning the ANZAC Anti-Ship Missile Defence (ASMD) modernisation.

Live firings off Hawaii proved full Stage 2 capability, which introduces software upgrades to both the PAR and CMS to enable guidance of the Raytheon RIM-162 Evolved SeaSparrow Missile (ESSM) in interrupted continuous wave illumination (ICWI) mode.

Under Project SEA 1448 Phase 2, all eight of the RAN's ANZAC frigates are to receive a substantial uplift to their ASMD capability in order that they can defend themselves and consorts against advanced anti-ship missile threats. The core of this package is the introduction of a new PAR suite developed by CEA Technologies (Stand S10-214) and the upgrade of the existing Saab Systems CMS to the improved 9LV 453 Mk3E standard.

The PAR suite combines a six-face CEAFAR E/F-band active phased array radar and an associated CEAMOUNT I/J-band multichannel active phased array missile fire control illuminator. CEAFAR is a 3D active phased array built up using a modular tile and panel array concept, and employing digital beam forming techniques to dynamically adapt and change modes to meet complex environmental conditions and threat scenarios.

The associated CEAMOUNT illuminator features four separate fixed arrays producing electronically steered beams to provide target illumination and missile uplink support for the semi-active radar homing ESSM. CEAMOUNT enables multiple missiles to be controlled in flight simultaneously.

The most recent trial, undertaken at the Pacific Missile Range Facility (PMRF) in Hawaii in late August, involved a series of ESSM firings to demonstrate full Stage 2 capability with ICWI. According to the Department of Defence, a total of 10 ESSMs were launched in ICWI mode in five live firing serials at PMRF to prove the new capability. The testing demonstrated the successful implementation of the ESSM ICWI capability by controlling two simultaneous ESSM engagements through the CEAMOUNT illuminator system.

Two engagements involved firings of ESSM against GQM- 163A Coyote supersonic targets. Both engagements were successful.

