

Cooperative Engagement Capability (CEC)

The Cooperative Engagement Capability (CEC) is a system of hardware and software that allows ships to share radar data on air targets. Radar data from individual ships of a Battle Group is transmitted to other ships in the group via a line-of-sight, data distribution system (DDS). Each ship uses identical data processing algorithms resident in its cooperative engagement processor (CEP), resulting in each ship having essentially the same display of track information on aircraft and missiles. An individual ship can launch an anti-air missile at a threat aircraft or anti-ship cruise missile (ASCM) within its engagement envelope, based on radar data relayed to it by another ship. Program plans include the addition of E-2C aircraft equipped with CEP and DDS, to bring airborne radar coverage plus extended relay capability to CEC. CEP-equipped units, connected via the DDS network, are known as Cooperating Units (CUs).

CEC was demonstrated at sea as early as FY90. Early operational assessments were conducted in FY94, FY95, and FY97. Entry into engineering and manufacturing development was approved at Milestone II in 1995. In accordance with congressional guidance, the Navy certified Initial Operational Capability for CEC (engineering development model equipment upgraded to AN/USG-1 configuration) in late FY96. CEC was designated an Acquisition Category ID program in FY99.

Operational evaluation of the surface AN/USG-2 hardware and Baseline 2.0 software was conducted in 3QFY01. DOT&E's Test and Evaluation report was published on February 1, 2002. The acquisition decision memorandum (ADM) of April 3, 2002, approved AN/USG-2 for full-rate production and approved Low-Rate Initial Production (LRIP) for the air AN/USG-3 hardware for FY02-03. The AN/USG-2 and AN/USG-3 hardware, with associated software, were designated as CEC Block 1. The ADM further approved the Navy's plan for the next CEC upgrade, Block 2, which will be competed for development.

TEST & EVALUATION ACTIVITY

Test & Evaluation activity consisted of engineering tests and developmental testing of AN/USG-3 equipment in E-2C aircraft in preparation for Follow-on Operational Test & Evaluation (FOT&E).

Activity included planning for and conducting an operational assessment in November 2002 in the Virginia Capes Operating Area, and an operational test of AN/USG-3 in E-2C aircraft, as part of a CEC Block 1 network. The operational test will occur later in FY03-04 with location (east or west coast) dependent on availability of a CEC-configured Battle Group.

TEST & EVALUATION ASSESSMENT

Although the surface AN/USG-2, with Baseline 2.0 software, was determined to be operationally effective and suitable, issues were identified in the following areas for further examination during FOT&E: Battle Group integration and interoperability, information assurance, maintainability, joint interoperability, production representative AN/USG-3 equipment, and new combat system integration. While the CEC Program Manager (PM) is attempting to address these issues, correction of certain issues in the area of Battle Group integration and interoperability require action on the part of PMs for the



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combat systems integrated with CEC. In spite of ADM direction to the Navy to fund expeditious solution of problems associated with integration and interoperability, it is unlikely that correction of these problems will be demonstrated until Block 2 of Operational Test & Evaluation (OT&E) in early FY06.

FOT&E in FY03-04, designated Operational Test-III B, is the equivalent of an operational evaluation of the AN/USG-3 in E-2C aircraft. The primary objective of this testing is to demonstrate improved operational effectiveness and suitability with production-representative AN/USG-3 equipment and software operating in a Battle Group level CEC network while executing air defense or, at a minimum, that the air defense mission can be executed without degradation resulting from integration of the production-representative AN/USG-3 and the E-2C radar. This testing requires a CEC-configured Battle Group detecting, tracking, and engaging credible ASCM surrogates during operationally realistic air defense scenarios with actual and simulated Standard and Sea Sparrow missiles.

The OT&E strategy for CEC Block 2 is being planned, but further definition of Block 2 is required. OT&E will be especially challenging, given the goal of increasing the network size with Block 2 and the imminent closure of the Outer Range at the Atlantic Fleet Weapons Training Facility (AFWTF), Puerto Rico. The AFWTF Outer Range has been key to adequate OT&E of CEC that involved live missile firings against threat ASCM-representative targets. OT&E of the first spiral of Block 2 (defined as Block 1 functionality plus some mid-term operational requirements) is planned for early FY06.