

Common Submarine Radio Room (CSRR) (Includes Submarine Exterior Communications System (SubECS))

Executive Summary

- The Navy is conducting operational testing of the *Virginia* class variant of the Common Submarine Radio Room (CSRR) in conjunction with IOT&E of the *Virginia* class submarine. Testing will not be complete until 2009.
- The Navy should re-evaluate the Extremely High Frequency (EHF) communications infrastructure and system architecture in light of the increased importance of EHF communications to submarine operations.

System

CSRR/Submarine Exterior Communications System (SubECS) is an umbrella program that integrates modern antennas, radios, cryptographic equipment, and messaging systems into a submarine communications network.

- It is intended to provide a common communication system across all classes of submarines and is designed to support the steady infusion of new technology with incremental modernization and replacement of obsolete equipment.
- It establishes common hardware and software baselines.
- *Virginia* class CSRR (designated SubECS) is developed and integrated as part of new construction. Other submarine class radio rooms are replaced with CSRR variants to establish a common radio room baseline.
- The Navy intends future CSRR improvements to address obsolescence issues and add new communications capabilities as they mature.

Mission

The Submarine Commanding Officer utilizes the CSRR/SubECS for communications and information dissemination in order to



accomplish assigned missions. The Navy intends to use the CSRR capabilities to:

- Manage, control, and disseminate command, control, communications, computers, and intelligence information routed to and from submarines in an open architecture
- Enable Net-Ready communications and operations

Prime Contractor

- Lockheed Martin

Activity

- The Navy is conducting operational testing of the *Virginia* class variant of the CSRR in conjunction with IOT&E of the *Virginia* class submarine. The Navy will not complete testing until 2009.
- DOT&E approved Revision 3 to the CSRR Test and Evaluation Master Plan in November 2007. This revision addresses the FOT&E for planned FY08 and FY09 upgrades to the baseline CSRR.
- The Navy plans to accelerate fielding of the CSRR on older *Los Angeles* class submarines, installing the first *Los Angeles* class variant in 2011 rather than 2015.

Assessment

- As reported in the FY07 Annual Report, the baseline CSRR is effective and suitable for current submarine communication requirements. The Navy has planned adequate operational testing for FY08 and FY09 CSRR upgrades.
- The baseline CSRR adequately implements EHF, but successful EHF communications are highly dependent upon satellite availability and adequate shore support. The testers observed, and the crews reported, frequent problems conducting EHF communications. Contributing to these problems, the Navy's EHF architecture does not appear to be optimized to support rapid restoration of communications

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following an inadvertent interruption. In recent years, EHF connectivity has become increasingly important to submarine operations.

recommendations. The recommendation regarding EHF remains valid.

- FY08 Recommendations. None.

Recommendations

- Status of Previous Recommendations. The Navy has adequately addressed two of the three FY07 DOT&E