

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

Executive Summary

- For the last three years, Common Submarine Radio Room (CSRR) has had a very difficult time adhering to their schedule. Performance shortfalls and schedule slips of supporting component programs that are integrated into CSRR are principally responsible for the CSRR schedule slips.
- The Navy is buying and installing low-rate numbers of CSRR. An operational assessment has not been completed; however, the Navy did conduct significant land-based testing.
- The Navy has re-scheduled the *Seawolf* CSRR variant Technical Evaluation (TECHEVAL) for March–April 2006 and is planning the Operational Evaluation (OPEVAL) for 4QFY06.

System

Submarine Exterior Communications System (SubECS)/CSRR is an umbrella program, which integrates smaller communications equipment acquisition programs and commercial off-the-shelf components into a submarine communications network.

- It provides a common communication system across all classes of submarines.
- It is designed to support the steady infusion of new technology with modernization and software replacement of obsolete equipment.
- It establishes common hardware and software baselines.
- *Virginia* class CSRR is developed and integrated as part of new construction. Other submarine class radio rooms are backfitted with CSRR variants to eliminate legacy components and establish a common radio room baseline and operator.



Mission

The Submarine Force utilizes the SubECS/CSRR to provide a common radio room, capable of secure, reliable, and covert communications, across all classes of submarines to accomplish assigned missions.

- Manages, controls, and disseminates command, control, communications, computers, and intelligence information routed to and from submarines in an open architecture
- Enables Net Ready communications and operations

Activity

- DOT&E approved the CSRR Test and Evaluation Master Plan (TEMP) Revision 1 on April 13, 2005, to support initial operational testing of the USS *Seawolf* variant. In the approval memorandum, DOT&E directed the program to submit a TEMP revision prior to testing of other SubECS/CSRR variants and within one year of approval of the program's Capability Development and Production Documents (CDD/CPD). The Navy is behind schedule executing per the TEMP.
- The Navy has CSRR variants installed or being installed on the three *Seawolf* class submarines, the Trident Training Centers, the *Ohio* Class SSGN conversions, and the *Virginia* Class submarines (under the new construction program). Although significant land-based integration facility testing was conducted, these installs started before the program

- completed initial developmental test reporting or an independent operational assessment.
- Operational test and evaluation of the *Seawolf* variant of SubECS/CSRR, originally scheduled for 2QFY03, is now planned for 4QFY06. Testing of other variants has also slipped.
- The program completed land-based integration and contractor testing and initial shipboard installation testing during FY05. Final developmental testing started in November 2005 and identified several shipboard deficiencies. Correction of these deficiencies will delay TECHEVAL to 2QFY06.
- The Assistant Secretary of the Navy (Research, Development, and Acquisition) approved Milestone C low-rate initial production for two CSRR units in FY05 and conditional approval for four units in FY06 on July 21, 2005.

NAVY PROGRAMS

- The DoD Inspector General (IG) completed an audit of the CSRR program in October 2005.

Assessment

- The SubECS/CSRR is a high risk program because it integrates several high risk component programs. These component programs are often behind schedule or deliver less than the required capability. During FY05, one supporting component program (Multi-functional Cryptographic System) was cancelled, another component program (Digital Modular Radio) delivered only a portion of the planned capability and failed its operational test. Most of the CSRR schedule slippage can be attributed to poor supporting component program performance or late delivery, which requires the substitution of legacy equipment and appropriate CSRR system level redesign.
- The Navy is procuring low-rate numbers of CSRR systems and installing the systems onboard submarines. Each CSRR system is slightly different based on the state of the CSRR and supporting component program and software development at installation. When the hosting submarine deploys, the Navy is effectively fielding the system without completing operational testing.
- The Navy delayed the planned *Seawolf* CSRR TECHEVAL from November 2005 until March 2006 to correct several shipboard deficiencies. TECHEVAL and OPEVAL will provide the first operational evaluation of the current baseline CSRR system.

- The DoD IG criticized the CSRR program for the lack of timely operational assessments, information support plans, and lifecycle cost estimate to support the low-rate initial production decision. The changing architecture of the CSRR makes timely operational assessments difficult. DOT&E agrees with the DoD IG audit findings.

Recommendations

1. DOT&E recommended the Navy produce an integrated plan showing the development and testing of each supporting component program and CSRR development and testing. CSRR is an integration effort of a “system-of-systems.” This type of integrated plan would allow the program to understand the impact of a supporting system’s performance or schedule delays and allow for appropriate early intervention. As a result of the performance and schedule slips impacts of the Digital Modular Radio program on CSRR, DOT&E is placing Digital Modular Radio on the T&E oversight list.
2. DOT&E recommends each CSRR variant complete operational test before the hosting ship deploys.
3. DOT&E recommends the Navy place Commander, Operational Test and Evaluation Force observers aboard USS *Seawolf* during technical evaluation and at-sea periods leading up to OPEVAL to observe radio room operations. The resultant observations will support the OPEVAL planning and execution.