Digital Modular Radio (DMR)

Executive Summary
- The Navy AN/USC-61(C) Digital Modular Radio (DMR) with Software Build 6.4.2 is operationally effective for surface ships, submarines, and shore installations.
- DMR with Software Build 6.4.2 is operationally suitable for shore installations.

System
- The DMR system is an open architecture, software definable, modular, multimode, and multi-band communications system for use in U.S. Navy surface ships, submarines, and shore installations. The baseline DMR provides the following:
  - Radio communications in the High Frequency (HF), Very High Frequency, and Ultra High Frequency (UHF) bands, to support both line-of-sight (LOS) communications and Satellite Communications (SATCOM)
  - A standard interface with legacy shipboard and fixed station communication systems, including the capability to be controlled by the simple network management protocol interfaces
  - Simultaneous operation of four independent communications channels
- Surface ship and shore DMR installations use 100-watt and 200-watt UHF power amplifiers for LOS and SATCOM UHF communications, respectively (HF communications not available).
- Submarine DMR installation uses 200-watt UHF power amplifiers for LOS and SATCOM communications and a 500-watt power amplifier for HF communications.

Mission
- U.S. Navy surface and subsurface vessels, and shore installations can employ DMR to:
  - Facilitate efficient and effective communication between operational units
  - Support performance of all assigned unit missions
  - Support the conduct of fleet, joint, and coalition operations

Prime Contractor
- General Dynamics C4 Systems, Scottsdale, Arizona

Activity
- Commander, Operational Test and Evaluation Force (COTF) conducted OT&E (OT-IIB) of DMR with Software Build 6.4.2 on two U.S. Navy surface ships and at a shore installation from October to November 2008; and on a submarine in January 2009. COTF issued the final test report for OT-IIB in April 2009.
- COTF conducted operational testing at a shore installation during July 2009 to verify correction of reliability and logistics supportability deficiencies cited in the OT-IIB test report.
- The Navy conducted all DMR testing in accordance with a DOT&E-approved Test and Evaluation Master Plan and test plan.
- COTF intends to conduct further operational testing in FY10 to verify correction of outstanding reliability and logistics supportability deficiencies on surface ships and submarines cited in the OT-IIB test report.

Assessment
- Test results from operational testing (OT-IIB) identified the following:
  - DMR with Software Build 6.4.2 is operationally effective for surface ships, submarines, and shore installations. DMR is capable of operating within its intended frequency range across all required waveforms.

- DMR with Software Build 6.4.2 is operationally suitable for shore installations.
- The reliability and logistics supportability of DMR with Software Build 6.4.2 for surface ship and submarine applications are unsatisfactory. The impact of reliability deficiencies in submarine applications is exacerbated by the lack of DMR system redundancy in submarines, increasing the potential operational impact of a DMR failure.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY09 Recommendations. None.