Sea-Based X-Band Radar (SBX)

Small Business Symposium

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August 2015

Approved for Public Release
15-MDA-8357 (13 August 15)
Sea Based X-Band Radar
Sea-Based X-Band Radar (SBX) Overview

Mission

- Sensor for MDA’s Ground-Based Midcourse Defense (GMD) - Provides data on target complexes to support GMD interceptors
- Optimized for cued search & acquisition, precision track, discrimination, and hit assessment
- Discrimination identifies the objects in the target cluster, allowing for specific targeting
- Supports search fences for non-cued detection
- SBX supports flight tests and contingency operations for Defense of the Homeland

Test and Operations

- SBX remains in the Operations Capacity Baseline
- Stationed at Joint Base Pearl Harbor-Hickam
- Planned 120 days at-sea operations per year for test/operations
- ~70 days at-sea endurance port-to-port without off-shore vessel support
- Reduced recall time for contingency operations
- Conducting maintenance and equipment modernization

Key Functionality

Self-propelled, semi-submersible platform

X-band Radar
- 249m² antenna aperture
- Solid state phased array
- 45,056 T/R modules
- ~ 4800 km range
- 2400 tons rotating weight
- Very long range operation against small targets
- Electronically and mechanically steered
- Most capable missile defense radar ever developed
- SATCOM Communications with GMD Fire Control

Vessel
- Transit speed - 8 knots
- Fuel capacity - 1.5M gal
- Range ~11,000 NM
- Height/Length - 282 ft / 389 ft

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SEA-BASED X-BAND RADAR

TEAM SBX

MISSILE DEFENSE AGENCY (MDA)

MILITARY SEALIFT COMMAND (MSC)

Raytheon
X-Band Radar

GRYPHON TECHNOLOGIES
Mission Integration

NORTHROP GRUMMAN
Mission Communications

Vessel Management

Security
SBX Mission Integration - Tasks

• Mission planning and management:
  – Coordination with off-board command authorities
  – Reporting of system and crew status, including the BMDS asset management process
  – Integrating and deconflicting planned activities
  – Developing and executing event and mission checklists

• Operation and Sustainment of the support electronic and information technology systems:
  – Classified and unclassified local area networks
  – Integrated electronic security system
  – Phone systems, video system, classified phones, televisions and signal distribution, personal computers, video teleconference equipment, and the TV
  – Work includes system administration, coordination with other system administrators, and maintaining engineering drawings and interface documents
  – Maintenance and contracting with service providers of shore interfaces for internet and phones at the satellite communications ground stations. Services support all crewmembers

• Facility Security Officer (FSO) for SBX:
  – Managing clearances, providing information security training, processing visit requests and managing classified information storage and access.

• Information System Security Officer (ISSO):
  – Manage cyber security and system access for information systems aboard SBX.
SBX Mission Integration – Tasks
(continued)

• Configuration Management (CM) for assigned systems:
  – Maintaining technical documentation with level 2 and level 3 drawings
  – Specification and interface description maintenance
  – Verification of engineering change proposals before approval, and installation in accordance with drawings after changes are made.

• Logistics support:
  – Storeroom management, packaging, shipping and receiving of material (primarily support mission integration supplies)
  – Property management and inventories will be updated to include initial entry and updates to meet DoD requirements for Item Unique Identification and Defense Property Accountability System

• Sustaining Engineering:
  – Engineering and technical support for the operation, maintenance, sustainment, integration, test, repair, and engineering related logistics of SBX assigned equipment.
  – Reliability, availability and maintainability will be assessed for IT equipment, including obsolescence

• Safety and Environmental Health:
  – Environmental Health and Safety in accordance with MIL-STD-882E and MDA-QS-001-MAP (MDA Assurance Provisions), and applicable local requirements.

• Quality Assurance:
A ship in harbor is safe, but that's not what ships are made for.