



Sea-Based X-Band Radar (SBX)



Small Business Symposium

**Bob Dees, Acting SBX Product Manager
Missile Defense Agency**

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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



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:
 - Perform QA support/audits using BS ISO 10007 Quality Management – Guidelines for Configuration Management and ISO 9001:2008 Quality Management Systems Requirements as guidelines



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