



SeaVision Overview

Lesson 1.1

07/01/2020

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Lesson 1.1 Learning Objectives

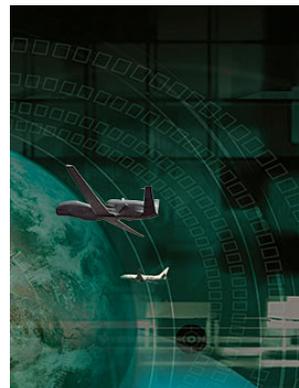
Upon successful completion of this lesson, the student will be able to:

- Identify the capabilities and functionality of the SeaVision application
- Understand the SeaVision role in supporting Maritime Domain Awareness (MDA)
- Understand current SeaVision training plans and support provided by Naval Information Warfare Center, Pacific (NIWC) Technical Assistance Field Team (TAFT)



SeaVision

- A web-based maritime situational awareness tool
- Geographic presentation of a common maritime picture
- Track/Analyze vessel locations and movements
- Share user-defined data sets
- Correlate tracks using multiple data sources



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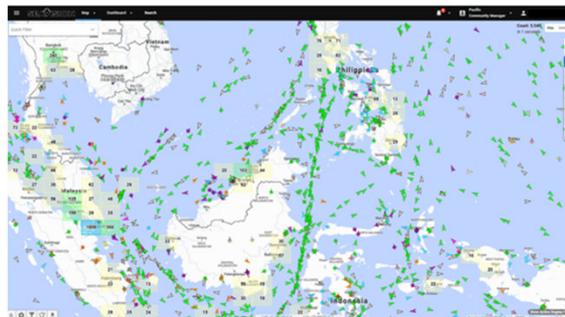
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- SeaVision provides users with the ability to view and track information about vessels in both near real-time and historical contexts with advanced filtering and search capabilities.
- Share advanced searches, rules, alerts, shapes, and vessel lists with other users within their Community and Persona
- Query large amounts of data and see where a vessel has been and/or its expected destination
- Allow users to import and export data products, layers, shapes, etc. in/out of the system
- Monitor Exclusive Economic Zone (EEZ) transits and port visits



SeaVision

- Owned by the U.S. Government and used by all U.S. Navy Fleets
- Managed by the U.S. Department of Transportation (DOT) Volpe Center
- Funded by the U.S. Department of the Navy (DON) and DOT



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- Geographic presentation of a common maritime picture and the ability to develop a user-defined operational picture
- Provide users the ability to develop a standardized set of user-defined queries and automated business rules to integrate and correlate data.



Maritime Safety and Security Information System (MSSIS)

- Developed by DOT Volpe's Center in 2006 for U.S. Navy Sixth Fleet
- Low-cost, unclassified, near real-time network of Automatic Identification System (AIS) data
- Countries employing MSSIS can share and receive AIS and RADAR data

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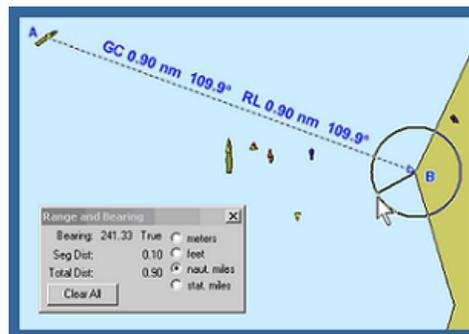
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- The Maritime Safety and Security Information System (MSSIS) is a freely shared, unclassified, near real-time data collection and distribution network. Its member countries share data from Automatic Identification Systems (AIS).
- With frequently enhanced system capabilities and a continuously growing MSSIS community, government organizations can capitalize on the services of MSSIS to improve and maintain Maritime Domain Awareness (MDA).



SeaVision

- Developed by Volpe in 2011 for U.S. Naval Forces Africa (NAVAF)
- An internet-based Google Maps program
- Leverages the data and capabilities of MSSIS and TV32



VOPLE TV32 Display



 **SeaVision Uses Multiple Data Sources**

- Automated Identification System (AIS) ← MSSIS Network
- Fairplay by Information Handling Service (IHS) Markit ← Maritime Database
- Coastal RADAR ← Organic RADAR
- Satellite Synthetic Aperture RADAR (SAT-SAR) ← Imagery
- Visual Infrared Imaging Radiometer Suite (VIIRS) ← Manmade Lights

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- AIS is a system allowing vessels to automatically report their position and navigational information as well as receive other vessels' positions within range.
- Fairplay by Information Handling Service (IHS) Markit is a repository for IMO ship registry data.
- Coastal RADAR provides dynamic target data to the SeaVision system.
- Satellite Synthetic Aperture RADAR (SAT-SAR) is a form of RADAR which is used to create images of objects. These images can be either two-dimensional or three-dimensional representations of the object. SAT-SAR uses the motion of the RADAR antenna over a targeted region to provide finer spatial resolution.
- VIIRS Ship Detections is the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) Visible Infrared Imaging Radiometer Suite that collects global data nightly. The VIIRS day/night band was designed to detect clouds at night using moonlight making it possible to detect lit fishing boats by the light they emit at night.



Maritime Domain Awareness (MDA)

- MDA: the effective understanding of anything associated with the maritime domain that could impact security, safety, economy, or the environment
- SeaVision: a web-based maritime situational awareness tool that enables users to view and share a broad array of maritime information to improve maritime operations



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- Safety
 - Search and Rescue, Accidents at Sea
 - Navies, Coast Guard, Port Authority
- Security
 - Terrorism, Robbery, Piracy, Human Trafficking, Illegal cargo
 - Coast Guard, Port Authority, Maritime Police
- Economic
 - Illegal, Unreported, and Unregulated (IUU) fishing
 - Customs, Fisheries
- Environment
 - Oil Spill, Illegal Dumping
 - Environmental Agencies



SeaVision Technical Assistance Field Team (TAFT)

- Collection of NIWC scientists, engineers, and technicians supporting the Maritime Security Initiative
- Establishment, sustainment, and data integration for partner nations' Regional Maritime Picture (RMP)
- Improvement of maritime security, domain awareness, and information sharing capabilities between Southeast Asian partner countries near the South China Sea

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- Establish partner nations' Regional Maritime Picture (RMP)
- Operationalize SeaVision RMP via mobile training
- Optimization of existing systems to improve maritime data availability and its integration with RMP
- Mentoring to partner nations' personnel to maximize usability of existing systems and RMP
- Maritime exercise support



Customizable SeaVision User Courses of Instruction (COIs)

- SV Operator COI: familiarization with the SeaVision system, tools, and use in maritime operations
- SV Analyst COI: use SeaVision system for MDA with practical applications
- SV Executive COI: provide an operational overview of SeaVision tools and capabilities
- SV Train the Trainer: provide courseware and instructional techniques to future trainers

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- Location: customer site of choice
- Audience: Operators/Analysts/Executives
- Classroom requirements: projector, internet connectivity, computer, and email for all participants
- All courses offer:
 - Guided and independent practice exercises
 - Responses to maritime scenarios
 - Real-world case studies, MDA data analysis, and decision making
 - Report generation and presentation practice
 - Low student to instructor ratio to maximize learning results



SeaVision TAFT Contact Information

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SeaVision Overview Summary

- SeaVision is a web-based maritime situational awareness tool
- Supports Host MDA mission
- Data Sources:
 - Automated Identification System (AIS)
 - Fairplay by Information Handling Service (IHS) Markit
 - Coastal RADAR
 - Satellite Synthetic Aperture RADAR (SAT-SAR)
 - Visual Infrared Imaging Radiometer Suite (VIIRS)



Questions?

