



CHALLENGE: 95,000 MILES OF SHORELINE

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Maritime Safety and Security Program (MSS) develops, evaluates, and transitions technical capabilities in support of the Homeland Security Enterprise to enhance U.S. maritime border safety and security by safeguarding lawful trade and travel to help prevent illegal use of the maritime environment to transport illicit goods or people, and to enhance the safety and resilience of the Maritime Transportation System (MTS).

MEETING THE CHALLENGE

The United States Coast Guard (USCG), U.S. Customs and Border Protection (CBP), and U.S. Immigration and Customs Enforcement (ICE) require operational capabilities to detect, deter, interdict, and investigate illegal maritime activity, conduct search and rescue missions, and protect ports, coastlines, and waterways. Challenges to these missions include the need for data, analytics, and technologies.

Port and Coastal Surveillance: This MSS activity enhances maritime domain awareness by improving, developing, and integrating sensors and platforms, information sharing technologies, mission support tools/techniques and decision support capabilities to benefit federal, state, local, tribal, international, public, and private partners.

Port and Waterway Resiliency: Develops and transitions analytical visualization tools, data, and technologies to provide USCG waterway managers with more effective and user-friendly capabilities to prepare for, mitigate, respond to, and recover from an incident or disaster affecting the MTS.

Integrated Domain Enterprise — Maritime: Addresses mission-critical information-sharing capability gaps and remedies persistent information siloes by delivering flexible data access and interoperable systems in support of enterprise domain awareness.

Remote Maritime Technologies: Performs research and development on solutions to operate in the Arctic and other remote maritime regions to detect and respond to illicit maritime activities or emergency situations in a timely manner. Includes intelligence, surveillance and reconnaissance, and communications capabilities to monitor and respond to illegal activities; data analytics to provide timely alerting to illicit behaviors or emergency situations; and technologies to aid in effective prevention and response to hazards.

MISSION IMPACT

MSS will allow innovation in the maritime domain through a multi-focused approach based on necessary capabilities required for DHS components to accomplish their maritime missions. Technologies to be developed by MSS include:

- Enhancing both maritime domain awareness and presence and increasing monitoring of U.S border through evaluation of candidate technologies
- Strengthening capabilities in detections, interdictions, and tracking of illicit activity by integrating radars to detect dark (illegal) vessels attempting to hide from law enforcement
- Increasing effectiveness of personnel and equipment for enhanced safety and mission readiness of DHS operators and partners
- Enhancing information and data sharing to support DHS maritime safety and security missions

PROGRAM ACCOMPLISHMENTS

- Successfully identified suspect activity in April 2022, resulting in the interdiction and seizure of narcotics having an estimated street value of nearly \$35 million
- Completed integration of the S&T-developed system that utilizes Synthetic Aperture Radar (SAR) satellite imagery to automate detection and reporting of iceberg locations for USCG International Ice Patrol
- Delivered full harmonized dataset and waterway map files to USCG at end of FY22, establishing core capabilities to monitor domestic waterways and aids to navigation, thereby significantly improving maritime safety and lawful commerce

UPCOMING MILESTONES

- Demonstrate unmanned maritime vehicle sensor system capabilities
- Design transition plan for new technology to enhance situational awareness of inland waterway navigational aids
- Complete payload accommodation study for distress alerting capability
- Develop technologies to enhance USCG Cutter connectivity, communications, and bandwidth coverage

KEY PERFORMERS/PARTNERS

- CBP Air and Marine Operations
- Naval Information Warfare Center Pacific
- Maxar Technologies, Herndon, VA
- USCG Research and Development Center

