



CHALLENGE: 95,000 MILES OF SHORELINE

The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Maritime Safety and Security (MSS) Program develops, evaluates, and transitions technical capabilities 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 require operational capabilities to detect, deter, interdict, and investigate illegal maritime activity, as well as to conduct search and rescue missions, and protect ports, coastlines, and waterways. These missions are challenged by the lack of effective data sources, robust analytic capabilities, and enabling technologies to aid in mission execution. The following MSS efforts addresses these challenges:

Enhanced Maritime Characterization: Conduct research and development and deliver new sensors, platforms, algorithms, and other solutions to aid in the detection, classification and identification of vessels, unlawful activities, or threats.

Coastal, Port, and Waterway Security: Develop and transition tools to warn vessel operators of restricted areas and enable law enforcement pursuits of non-compliant vessels to end more safely. This includes development of capabilities to provide USCG waterway managers with more effective and user-friendly capabilities to prepare for, mitigate, respond to, and recover from incidents or disasters affecting the MTS.

Maritime Analytics and All Domain Sensors: Leverage artificial intelligence and machine learning to develop, deploy, and transition mission critical and threat identification analytics to increase detection and interdiction of suspicious maritime activities.

Maritime Location, Communication, and Emergency Management: Develop and deliver 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.

MISSION IMPACT

MSS delivers maritime domain capabilities that are highly innovative and disruptive in order to revolutionize and rapidly advance DHS component capabilities to accomplish their maritime missions. Technologies developed by MSS include:

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

RECENT PROGRAM ACCOMPLISHMENTS

- Successful identification of suspect activities resulting in the interdiction and seizure of narcotics having an estimated street value of nearly \$81 million
- More than 24 successful maritime interdictions with the seizure of more than 10,000 pounds of cocaine
- Successful completion of mass rescue device testing in a controlled test environment to mitigate high-impact maritime disaster events

UPCOMING MILESTONES

- Demonstrate and assess aerial wide-area maritime object recognition capabilities
- Perform open water testing of flotation device for mass rescue operations
- Develop technologies to enhance USCG Cutter connectivity by leveraging extremely high data rate satellite communications capabilities

KEY PERFORMERS/PARTNERS

- CBP Air and Marine Operations Center, Riverside, CA
- USCG CG-761/68/9335/62/751 teams
- Maxar Technologies Inc., Herndon, VA
- Defense Technical Information Center, Fort Belvoir, VA
- SAIC Inc., Norfolk, VA
- Oak Ridge National Lab, Oak Ridge, TN
- GeoCGI, Alexandria, VA
- Moonprint Solutions, Dover, DE
- Viking Lifesaving Equipment, Norfolk, VA

