CHALLENGE: 95,000 MILES OF SHORELINE

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. The challenge to affecting these missions is the lack of data with sufficient spatial and temporal density to enable automated analytics and the federation of those analytic outputs to permit the allocation of resources to the right place at the right time.

MEETING THE CHALLENGE

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Maritime Safety and Security Program develops and transitions technical capabilities that enhance U.S. maritime border security by safeguarding lawful trade and travel, and helps to prevent illegal use of the maritime environment to transport illicit goods or people. To address multiple identified gaps, the program is organized into four projects:

Port and Coastal Surveillance

Enhances maritime domain awareness by improving, developing or integrating sensors and platforms (including autonomous), 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 Marine Transportation System.

Integrated Domain Enterprise — Maritime

Addresses mission-critical information-sharing capability gaps and is designed to remedy 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 remote maritime regions to detect and respond to illicit maritime activities or emergency situations in a timely manner. Includes space systems to enhance Intelligence, Surveillance and Reconnaissance and communications capabilities; data analytics to provide timely alerting to illicit behaviors or emergency situations; technologies to aid in effective prevention and response to hazards; and solutions to prevent loss of life.

MISSION IMPACT

Consolidating all maritime efforts under a single program will allow cross-pollination of innovation in the maritime domain, creating an effective multi-layered response to:

- Enhance maritime domain awareness.
- Increase detections and tracking of illicit activity.
- Increase interdictions of illicit activity.
- Increase efficiency/effectiveness/safety of personnel and equipment.
- Enhance presence in the maritime domain.
- Enhance information sharing to support DHS maritime safety and security missions.

PROGRAM ACCOMPLISHMENTS

- Prototyped capability to improve effectiveness of USCG operations; and
- Assessed use of space-based capabilities to enhance maritime domain awareness.

UPCOMING MILESTONES

- Transition new data sources or analytic capabilities into existing DHS component systems to support safety and security operations;
- Perform evaluation of analytics to detect and report "dark vessels" performing illicit activities;
- Perform operationally relevant testing and assessment of select capabilities identified in the analysis of alternatives against dark vessels in relevant areas of responsibilities;
- Demonstrate unmanned maritime vehicle sensor system capabilities.

PERFORMERS/PARTNERS

Current key performers and partners of the Maritime Safety and Security Program include:

- Ardent Management Consulting, Arlington, VA
- Cherokee Nation Strategic Programs, Arlington, VA
- Ocean Aero, Inc., San Diego, CA
- Stennis Space Center, MS
- Synergy, Reston, VA
- Trabus Technologies, San Diego, CA
- USCG International Ice Patrol
- USCG Research and Development Center