

### MAINTAINING MARITIME AIDS TO NAVIGATION (ATON)

The Department of Homeland Security (DHS) United States Coast Guard (USCG) is responsible for the care and maintenance of maritime aids to navigation (ATON). Much like drivers need stoplights, street signs and universally accepted driving rules, boaters need equivalent nautical navigation rules. This network of signs, symbols, buoys, markers, lighthouses, and regulations must be up to date and functioning properly so that commercial, recreational, military, and government vessels can safely navigate in the marine transportation system. Currently, the USCG expends considerable time and resources to fulfill its mandate to provide for the safety and economic security of United States maritime ports and waterways.

Comprehensive ATON surveys take a long time, which can result in outdated situational awareness, inefficient responses to discrepant ATON, and potentially hazardous waterways. Modern technologies are needed to monitor the status of ATON, conduct port and waterway health assessments, analyze the condition of ports or waterways after incidents or disasters, and develop risk-based approaches for mitigation, response, and recovery.

### IMPROVING THE WATERWAY ANALYSIS AND MANAGEMENT SYSTEM (WAMS)

The DHS Science and Technology Directorate (S&T) is developing port and waterway resiliency analytical visualization tools, data, and technologies to provide USCG waterway managers with more effective and user-friendly capabilities. This effort will enhance the USCG Waterways Analysis and Management System (WAMS) and include research on other capabilities to address DHS maritime challenges, while maintaining fiscal responsibility by reducing the frequency of physical inspection, allowing for efficient use of USCG assets.

In collaboration, S&T and the USCG will develop a modernized system for the USCG to manage ATON health. This effort will update WAMS, which will reside in the existing USCG user interface system of record – USAIMS (US ATON Information Management System). These updates will feature a new

database-driven system architecture, map- or data-driven displays, and customizable queries.



### IMPACT TO ATON MAINTENANCE

WAMS will modernize and enhance the USCG's existing waterway management system so that it may better monitor, update, visualize and analyze ATON. It will improve USCG's ability to conduct waterway health assessments, analyze the condition of ports and waterways after incidents or disasters, and develop risk-based mitigation, response, and recovery strategies. Further, the enhancements within the USAIMS will enable risk-based decisions and reliability-focused ATON maintenance.

### PERFORMERS/PARTNERS

- Zekiah Technologies (La Plata, MD)
- USCG