

**Department of Homeland Security**  
MDA & Information Sharing Accomplishments for  
*Fiscal Year 2010*

## **1. OPERATIONS**

### ***Support to M/V SUN SEA Response: USCG***

On 19 August 2010, Canadian naval and police forces interdicted the M/V SUN SEA one hundred nautical miles west of the Strait of Juan de Fuca. On board the 188 foot stateless bulk cargo carrier were 492 illegal migrants from Sri Lanka, including 63 women and 49 minors. According to the migrants, their transit across the Pacific had taken approximately 40 days, although many had been aboard the vessel for months prior in the Gulf of Thailand while the smugglers made arrangements. Some of the smugglers had an established association with the Sea Tigers, the naval arm of the Liberation Tigers of Tamil Eelam (LTTE).

Coast Guard intelligence and criminal investigations components played a critical role in this event, enabling staff and operational commanders to closely monitor the case, prepare contingency plans, and effectively position response forces. Coast Guard personnel at the national, operational, and tactical levels monitored the vessel's movements, especially as it approached US territory; liaised with intelligence and law enforcement counterparts to leverage and integrate capabilities; analyzed similar past cases to make potential boarding teams aware of the conditions and responses they might encounter if they were given the order to interdict the vessel; and assessed the threat posed by the vessel, crew, and passengers. By providing effective, timely, accurate, and usable information and warning of the event, these professionals shaped our national maritime operational threat response in a way that focused our courses of action and conserved resources.

### ***Support to DEEPWATER HORIZON Oil Spill Operations: Center for Maritime, Island and Remote and Extreme Environment Security (MIREES), a DHS Center of Excellence***

The Stevens Institute of Technology's Center for Secure and Resilient Maritime Commerce (CSR) partner universities collaborated with international satellite data providers to acquire critical environmental imagery for the Gulf of Mexico and developed collaborative tools to fly an underwater robot across the Atlantic including; a web portal to organize information, a daily blog to share information with a broad audience, and a Google Earth data interface to overlay datasets and forecasts on glider tracks for mission planning. The resulting data was assimilated into models to produce an improved description of the environmental conditions over broad areas of the Gulf of Mexico.

### ***Support to Anti-Piracy Operations, Horn of Africa/Gulf of Aden: USCG***

Coast Guard Cryptologic Group elements achieved consensus among Maritime Analysis Support Teams in the United States, Australia, United Kingdom, New Zealand, & Canada for policy changes in sharing of analyzed information which increased protection of commonwealth flagged civil maritime vessels transiting near or within piracy risk areas; this high-water mark in commonwealth partner collaboration and information sharing reduced the chances of allied commercial vessels becoming hijacked and made the Indian Ocean and Gulf of Aden collectively safer to transit. Additionally, interviews of hijacked crews by CG intelligence personnel have validated maritime best practices for piracy response operations.

### ***Enhanced Biometrics Screening for National Security Threats: USCG***

In response to concerns about al-Qaida efforts to attack the U.S. coming out of Yemen, the Coast Guard took some extraordinary steps to ensure the security and safety of Liquefied Natural Gas (LNG) cargoes arriving in the U.S. directly from Yemen. Among these was a first ever requirement that the foreign crews of these ships submit to biometric identity verification. Working in close partnership with U.S. Visitor and Immigration Status Indicator Technology (US-VISIT), EPIC, the DoD Biometrics Identity Management Agency and State Department, the Coast Guard began conducting in-depth biometric and biographic screening of crewmembers on these ships to ensure that no terrorist manages to slip through.

### ***Biometrics at Sea Program: USCG, US-VISIT***

The USCG and US-VISIT have partnered together to provide mobile biometrics collection and analysis capability at sea, along with other remote areas where DHS operates. As a result of the success of this partnership's USCG Mona Pass Proof of Concept (POC), the USCG plans a measured expansion of at-sea biometric capability throughout its mission scope and areas of operation. This measured expansion of biometrics at sea will assist in the prosecution of persons engaged in such activities as illegal maritime migration, smuggling, illegal drug transportation, and other types of illegal maritime activity. By deterring unsafe and illegal maritime migration and other illegal activities at sea, the use of biometrics will promote an important USCG mission, in particular the preservation of life at sea and the enforcement of U.S. law.

### ***Support to Haiti Earthquake Response: USCG***

Increased maritime domain awareness was effectively leveraged to help support Haiti earthquake response operations. The reporting frequency of vessels in the approaches to Haiti was increased to hourly -- using the recently completed Long Range Identification and Tracking (LRIT) system established for the tracking of SOLAS-class vessels. Commercial satellite AIS, combined with terrestrial NAIS information delivered via MSSIS, provided information for the operation of vessel traffic services necessary for port operations.

### ***DEEPWATER HORIZON Response: DHS I&A, USCG, Others***

On May 1, 2010, the USCG activated the Interagency Remote Sensing Coordination Cell (IRSCC) to support response efforts in the Gulf. The IRSCC is a formal body of federal departments and agency remote sensing experts who collaborate, plan, and coordinate remote sensing requirements, activities, and operations. The IRSCC leveraged its membership, including—but not limited to—the National Geospatial Intelligence Agency (NGA), US Northern Command, and National Guard Bureau (NGB) assets to provide an unclassified collection picture to the Unified Area Command (UAC) aiding response and recovery operations. The IRSCC consolidated known collection requirements, helped to develop priority information requirements of the UAC, and recommended appropriate remote sensing assets to assist in the response and recovery efforts. NGA-funded CSTARS commercial satellite sensor capabilities were used to supplement the situational awareness provided by USCG eGIS and Nationwide Automatic Identification System (NAIS) to maintain a comprehensive picture of vessels of opportunity in the Gulf of Mexico. The terrestrial NAIS coverage was expanded using AIS receivers located on oil platforms.

## **2. INFORMATION SHARING**

### ***Intelligence Coordination Center (ICC): USCG***

The CG's ICC Analysis Division co-chaired (along with Office of Naval Intelligence) the inter-agency MDA Vessel Information Hub (VIH), which examines barriers and solutions to information sharing regarding ship tracking and related maritime domain awareness issues. The VIH recently produced a Directory of MDA Data Sources at both the Unclassified//For Official Use Only and Top Secret//SCI levels.

### ***DHS Law Enforcement Information Sharing Initiative: ICE Lead/All DHS Law Enforcement Components***

The DHS Law Enforcement Information Sharing Initiative Program Management Office facilitated the signing of information sharing agreements on behalf of DHS with the following law enforcement regional information sharing systems:

- Law Enforcement Exchange (LInX) National Capital Region (NCR)
- National Drug Pointer Index (NDPIX)
- International Justice and Public Safety Network (Nlets)
- National Counterterrorism Center – Electronic System for Travel Authorization (NCTC-ESTA)
- National Counterterrorism Center – Arrival-Departure Information System (NCTC-ADIS)

### ***Policy for Sharing of Automatic Identification System (AIS) Information: USCG***

Completed interim policy guidance to USCG program managers and field units regarding sharing of AIS information collected by USCG with foreign governments, federal, state, local, and tribal government agencies, and non-government entities. This interim policy has already been shared with other government organizations looking to draft similar policy. A final policy is nearing completion.

### ***Interagency Remote Sensing Coordination Cell (IRSCC): DHS I&A, Others***

The IRSCC coordinated access to National Guard Bureau aircraft and sensors which, in tandem with trained oil spotters, were used to provide real-time information to vessels conducting skimming operations for the DEEPWATER HORIZON spill response. The IRSCC also prepared over 111 daily situation reports that detailed remote sensing requirements and the assets the Unified Area Command directed to satisfy those requirements. The report provided the collection footprints of the unclassified space-based collectors, and the flight profiles and sensor information for aircraft missions. The IRSCC disseminated these reports to the Homeland Security Information Network which was the common portal for the event.

### ***Annual Port Interagency Information Sharing Report: USCG***

Published the FY09 report, provides a summary of information sharing best practices and recommended improvements in the ports of Baltimore, Philadelphia, Wilmington, New York-New Jersey, Houston, Lake Charles, Port Arthur, Galveston and Seattle. 155 additional interviews with federal, state, local, tribal, international, public, and private partners of the Coast Guard were also completed for use in the forthcoming FY10 report.

### ***National Information Exchange Model (NIEM) XML data models: DNDO***

The DNDO OCIO acted as coordinator for a project to harmonize the National Information Exchange Model (NIEM) XML data models used by MDA. The domain models for Maritime Awareness, CBRN (Chemical, Biological, Radiological and Nuclear), and International Trade were harmonized, with the objective to improve the interoperability of messages based on these data models.

### ***Joint Analysis Center (JAC): DNDO***

The JAC has started producing a Weekly Open Source Report, disseminated to State and major urban area fusion centers providing overall situational awareness of radiological or nuclear media stories of interest. The JAC also participated in the National Maritime Intelligence Center Interagency Advisory Group dealing with issues of the Global Maritime Community of Interest. The JAC is part of the Maritime Operations Threat Response process for WMD threats in the maritime domain.

### ***The Joint Analysis Center Collaborative Information System (JACCIS): DNDO***

JACCIS is being developed by DNDO as a primary situation awareness and reporting system for radiation detection events. JACCIS will support a web interface for use by Federal, State, Local, and Tribal partners to submit and retrieve information regarding radiation detection events. Initial Operational Capability for JACCIS is planned for delivery in the fall of 2010.

### ***Maritime Awareness Global Network (MAGNet): USCG***

The USCG Maritime Awareness Global Network (MAGNet) is an enterprise capability that stores, fuses and analyzes disparate, law enforcement and intelligence data sources to produce and disseminate high-value, MDA information for users throughout the USCG, DHS, DoD, and other federal agencies. In 2010, data services were implemented on a classified network to deliver near real-time information regarding arriving and other targeted vessels to new common operational pictures (COP) being developed by the Joint Interagency Task Force South (JIATF-S) and the Federal Bureau of Investigations (FBI).

### ***HOMEPORT/Alert and Warning System 2.0: USCG***

The CG's Alert and Warning System 2.0 was selected for a Government Computer News magazine 2010 GCN Award for outstanding information technology achievements in government. AWS is a bi-directional system that allows the CG to issue and receive alerts to maritime partners via multiple channels, among them phone, Short Message Service, e-mail and fax, eliminating the need for broadcasting on multiple systems to ensure that all partners receive required information.

### ***Enterprise Service Bus: USCG***

The Coast Guard Enterprise Service Bus (ESB) is currently providing 17 services both within the Coast Guard and to other agencies using a secure, web-based publish and share methodology. There are 19 additional services under development. Current external sharing services in production include: Tracks of vessels transiting Right Whale speed restriction areas to NOAA, LRIT positions to the IRS, and the position of AMOC-tracked entities (aircraft) in the Gulf of Mexico to NOAA's Environmental Response Management Application (ERMA), the geospatial viewer for all participants in the Deepwater Horizon response. In development are services that will provide AIS data, SANS ports, facility locations, and CG organizational boundaries to the IRS and USACE. Also in development are services to provide NOA data, vessel details, and arrival scoring data to Watchkeeper, which in turn will share that data with participating port partners.

### ***DHS Information Sharing Training: All***

The national Program Manager for Information Sharing Environment (PM-ISE) developed an Information Sharing Environment core awareness training module in order to bring Federal departments and agencies into compliance with the Presidential memorandum "Guidelines and Requirements in Support of the Information Sharing Environment" and associated executive policies, and Federal information sharing laws. In accordance with the 12 May 2010 DHS S1 Memo titled "Implementation of Information Sharing Environment Core Training Course for DHS Employees", all DHS personnel in positions which require frequent mission-critical information sharing and collaboration must have completed this training by 31 October 2010.

## **3. INTELLIGENCE**

### ***Intelligence Coordination Center (ICC): USCG***

Coastwatch and Maritime Targeting worked closely within the Department Homeland Security (Customs and Border Protection (CBP) and Immigrations and Customs Enforcement (ICE)) and with other law enforcement and intelligence community agencies to provide follow-up analysis on over 50 potentially-threatening individuals or vessels transiting to U.S. ports.

### ***Coast Guard Investigative Service (CGIS): USCG***

Coast Guard CGIS special agents serve as members of multi-jurisdictional task forces such as the FBI Joint Terrorism Task Forces (JTTFs). CGIS currently staffs 24 FBI JTTFs located in areas with major ports, maritime-related industries or facilities or maritime-related elements of our national infrastructure. These agents serve as “maritime liaison agents” responsible for coordinating law enforcement operations and intelligence sharing between Coast Guard operational commanders and FBI JTTF partner agencies. CGIS special agents and CG Sector personnel also serve as liaisons between a variety of intelligence and “fusion” centers, including the State and major urban area fusion centers, CBP Operations and Intelligence Centers, the Border Enforcement Support Teams (BESTs) and other partnerships.

## **4. POLICY**

### ***National MDA Coordination Office (NMCO): CBP, USCG***

The National MDA Coordination Office stood up in May 2010. The DHS Principal is a USCG Senior Executive. Senior Executives from DoD, DOT, and ODNI (National Maritime Intelligence Center) also serve as Principals. The NMCO staff consists of USCG, USN, NOAA, and MARAD personnel located at USCG Headquarters.

### ***USCG MDA Concept of Operations: USCG***

The Coast Guard published its *USCG MDA Concept of Operations* (CONOPS) in May 2010. The CONOPS documents the principles and conceptual framework needed to increase CG awareness of the maritime domain for mission execution; provide CG Headquarters-level guidance for the development and application of MDA coordination across all HQ Directorates and levels of command; promote full integration of domain awareness in support of all eleven Coast Guard mission areas; and ensure CG alignment with external MDA initiatives by the interagency.

## **5. MARITIME SCREENING**

### ***Interagency Operations Center (IOC) Program: USCG***

The concept of Interagency Operations Center involves vessel screening, operations planning, and operations monitoring. *WatchKeeper* is a software application tool being developed by the IOC Acquisition Program that receives vessel arrival notices automatically from SANS, and allows both Coast Guard and Port Partner data and screening results to be entered. These results are then available to all port partners participating in the IOC program for that port.

*WatchKeeper* has currently been deployed to command centers in Charleston, Jacksonville, and Hampton Roads.

### ***USCG Use of Advanced Targeting System-Passenger (ATS-P): CBP, USCG***

The Coast Guard's Intelligence Coordination Center & CBP's Office of Intelligence and Operations Coordination have been coordinating CG use of this CBP personnel targeting system. Rather than developing a costly, redundant system to meet CG requirements, CBP will devise a CG Start Page for ATS-P which will grant access to ATS-P for CG intelligence analysts, and allow CG users to make rule sets specific for CG maritime missions.

### ***Vessel Targeting COMDTINST: USCG***

Published in August 2010, this document prescribes the Coast Guard process for Vessel Targeting, a process to obtain information about vessels operating in the maritime domain, apply sorting and screening criteria in order to determine relative risk, and execute appropriate operational response if necessary.

### ***Maritime Intelligence Targeting Working Group (MITWG): CBP, USCG***

This working group, established by the USCG-CBP Senior Guidance team (SGT), conducted a study of maritime screening and concluded that CBP's Automated Targeting System (ATS-P/N) is more effective, better supported, and more widely used than the system CG's COASTWATCH currently utilizes. The CG has transferred funds to develop a maritime interface of ATS-P which will provide scenario-based targeting rules. The synergy provided by truly joint CBP/CG targeting enhances both product quality and process efficiency, allowing both agencies to return resources to field activities. Next steps include Targeting Rules and inclusion of "dark targets" into MITWG targeting efforts. As a result of this effort, the SGT has also established a Joint Screening and Targeting Architecture effort.

## **6. VESSEL POSITIONS/ INFORMATION**

### ***Provision of Vessel Movement Data: USCG***

In accordance with Intelligence Community Directive (ICD) 501, the Coast Guard executed an agreement to provide authoritative vessel movement data sets to U.S. Navy, Office of Naval Intelligence (ONI), NIMITZ Operational Intelligence Center (OIC). Data sets include Nationwide Automatic Identification System (NAIS), Long Range Identification and Tracking (LRIT), commercially purchased Automatic Identification System (AIS), and an additional classified source.

### ***Enterprise Geographic Information System (EGIS): USCG***

The Enterprise Geographic Information System (EGIS) is now operational and is accessible through the Maritime Information for Safety and Law Enforcement (MISLE) application. EGIS displays current AIS information on its Vessel Tracking tab and provides a means to query historical AIS data by vessel or area. A vessel's AIS information is also linked to other information stored in MISLE (e.g., Vessel Critical Profile, Notice of Arrival data) and is correlated with SANS arrival data.

### ***Federal Initiative for Navigation Data Enhancement (FINDE): USCG***

FINDE is a joint Federal effort to provide more complete, accurate and reliable navigation information critical for providing an accurate picture of commercial cargo and vessel activity on our Nation's waterways, enforcing regulations, and making decisions regarding capital investment. FINDE will utilize US Coast Guard's enterprise services architecture to identify commercial vessels, their movements, and related data within the capabilities of Coast Guard enterprise systems.

### ***Space-Based Automatic Identification System (AIS) Data Collection and Analysis: USCG***

The Coast Guard contracted the Navy Research Lab (NRL) to analyze Automatic Identification System (AIS) data from the ComDev and SpaceQuest nano-satellites, and cross check the two satellite-based AIS collections against multiple terrestrial and other sources. These cross comparisons will help to understand actual population of AIS ships and the environment in which they operate. These two satellite data sources and the addition of AIS from other sources represent an opportunity to establish the degree to which AIS may be reliably collected from space expanding our maritime domain awareness.

### ***Long Range Identification and Tracking: USCG***

The U.S. national data center and the International Data Exchange (IDE), both operated by the CG, are fully operational. Over 100 flag states are currently participating in the system, which generates approximately 11,650 vessel position reports daily. The CG is currently working with the European Maritime Safety Agency (EMSA) to transfer responsibility for the operation of the IDE to that organization by 2014.

## **7. INTERAGENCY SOLUTIONS ANALYSIS**

### ***Interagency Solutions Analysis (IASA) People Solutions Action Team (SAT): CBP***

CBP has been selected as the co-lead for two of the IASA Solution Action Teams (SAT)--Cargo and People. The People SAT has completed its initial goals, and submitted an interim report to the NMCO Principals in Sept 2010. DoD has recently established a co-lead for the Cargo SAT, which has begun study. Completion of this portion of the study is expected in December 2010.

## **8. RESEARCH**

### ***Center for Secure and Resilient Maritime Commerce (CSR) Small Vessel Experiment: Center for Maritime, Island and Remote and Extreme Environment Security (MIREES), a DHS Center of Excellence***

The Stevens Institute of Technology's Center for Secure and Resilient Maritime Commerce (CSR) conducted a coordinated experiment in the New York Harbor to determine the approximate minimum vessel size that can be detected using available sensing technologies, with the aim of assisting the CSR research team in planning future, integrated sensing system development. The experiment leveraged capabilities being provided for other U.S. government agencies, including NASA, NGA, NOAA, and NSF. CSR recorded vessel acoustic signatures as part of a multi-layered approach to Maritime Domain Awareness, and was able to record the acoustic signature of a 26-foot vessel up to 3 Km. CSR is in the process of analyzing the data to match satellite images and HF Radar with recorded acoustic data.

### ***Sensor and Surveillance Project / Wide Area Surveillance (WAS) Effort: DHS S&T***

Continuing work to develop a prototype system that provides near real-time awareness by leveraging commercial shipboard navigation radars to fill in gaps in persistent maritime surveillance. Initial testing validated design & provided data to measure performance. Additional units are being installed on commercial, USCG, and CBP vessels for follow-on test and evaluation. Project also developing a prototype system that can be retrofitted on existing Tethered Aerostat Radar System (TARS) located at Lajas, Puerto Rico to enhance its ability to provide near real-time awareness of low radar cross section surface vessels that pose a maritime security threat

### ***Sensor and Surveillance Project / Port and Coastal Surveillance Effort: DHS S&T***

Developing a prototype mobile sensor system that can provide near real-time awareness of small vessels that pose a maritime security threat. Initial prototype Improved Imaging Technology (IIT) unit is installed on a Modular Sensor System at Chesapeake Beach, Virginia.

### ***Sensor and Surveillance Project / Small Vessel Surveillance Effort: DHS S&T***

Developing a prototype system for small vessels used to conduct boarding operations that will provide near real-time awareness of small vessels that pose a maritime security threat. Initial prototype Small Vessel Tracking (SVT) unit is being designed and will be installed on an existing small vessel used to conduct boarding operations, and integrated with the law enforcement databases and command centers.

### ***Small Vessel Stand-off Radiation Detection: DNDO***

DNDO led a stand-off detection test focused on determining effectiveness on boat-mounted system performance in detecting radiation/nuclear (rad/nuc) threats aboard small vessels (less than 300 gross tons). This test builds previous testing conducted at a benign lake environment and moved testing to a coastal operational environment. This effort supports the DHS Small Vessel Security Strategy objective of developing a layered defense to detect and prevent the illicit transport of radioactive material by small vessels.

### ***West Coast Maritime Pilot (WCMP): DNDO***

West Coast Maritime Preventative Radiation/Nuclear (rad/nuc) Detection (PRND) Pilot is an effort to design, field, and evaluate radiation detection architecture to address the threat of illicit rad/nuc materials and devices being transported on recreational craft or small commercial vessels in the Puget Sound and San Diego port areas. Training, drills, and a successful full scale exercise were held in FY 2010 and a full report is due late Fall 2010.

### ***Maritime Domain Awareness (MDA) Study: DNDO***

DNDO is conducting an architecture study to examine and report on recommendations to integrate DNDO's Global Nuclear Detection Architecture (GNDA) into the appropriate elements of the MDA Enterprise Architecture, including command and control (C2), communications & "reachback", intelligence & information collection/management, and sensors to enhance situational awareness, maritime domain encounter and radiation/nuclear detection. The "Maritime Pathway" is a significant portion of the GNDA and significant gaps exist in MDA, particularly at the small vessel (under 300 gross ton) level. Limited situational awareness exists at the operational level on maritime border transits of small vessels hindering detection of illicit dangerous cargoes and interdiction efforts. Preventive Radiological-Nuclear (PRND) systems and isotope adjudication/verification ("reachback") protocols are not addressed in MDA C4IT architecture.

### ***Coast Guard (CG) Maritime Security Risk Analysis Model (MSRAM) radiological-nuclear module: DNDO, USCG***

DNDO is working with the USCG to make enhancements to MSRAM to analyze the threat, vulnerability, and consequences of maritime radiological and nuclear attacks. This effort will develop a methodology & probabilistic risk assessment software tool consistent with the venerable MSRAM utilized to support tactical (local-level) and strategic-level decision making. The MSRAM radiation-nuclear module will highlight benchmarks & recommended ranges of threat, vulnerability and consequence factors and provide training materials and job aids to assist field users.

***Inland Waterways Architecture Study: DNDO***

DNDO is conducting a preventive radiological-nuclear detection (PRND) architecture study and gap analysis of the Inland Waterways, including the Intra-coastal Waterway, Western Rivers, Columbia River System, and Hudson River. The study will identify benchmark threat vectors (including types/ characteristics of vessels) & baseline capabilities (including Army Corps of Engineers means associated with lock systems). The study will deliver a report that assesses vulnerabilities & capability/coverage and recommendations to prioritize risk mitigating options & enhance inland waterways nuclear detection architecture.

### ***Offshore Secondary Inspection Study: DNDO***

DNDO is conducting research and analysis of maritime security strategies & CONOPS for conducting offshore inspection and verification of potentially dangerous radiation/nuclear (rad/nuc) cargoes. The study will capture/understand stakeholder requirements for offshore "secondary" inspection and identify disadvantages in current offshore secondary inspection rad/nuc detection systems, procedures, and planning. The study will also conduct rudimentary comparative analysis of potential offshore inspection options including ship concepts and offshore platform concepts considering ops/engineering feasibility & gross costs