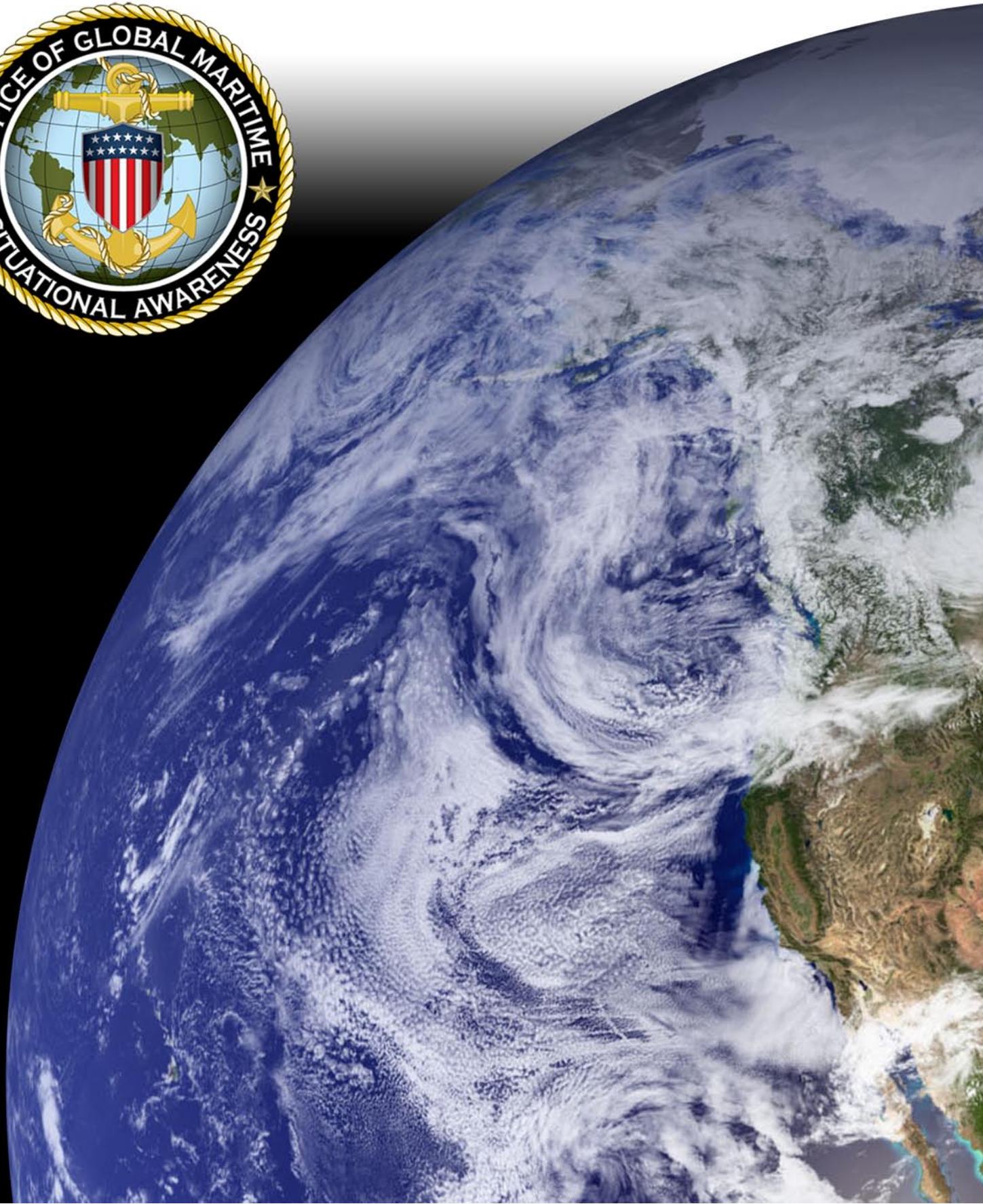


Office of Global Maritime Situational Awareness

Annual Report 2009



Foreword

On behalf of the Office of Global Maritime Situational Awareness (OGMSA), I am pleased to present our second Annual Report to the Global Maritime Community of Interest (GMCOI). This report documents the progress of the United States in achieving Maritime Domain Awareness through a “whole of government” approach and its MDA contributions to a growing Global Maritime Partnership, as tracked by and reported to OGMSA.

OGMSA established specific, measurable, achievable, realistic, and time-sensitive objectives (*please see Appendix B*) for Fiscal Year 2009. These objectives were developed to support the National Plan to Achieve MDA (NPAMDA) and its supporting documents, the Inter-Agency Investment Strategy (IAIS) and the National MDA Concept of Operations (MDA CONOPS), and based on the needs of the interagency community as expressed through the National MDA Stakeholders Board (SHB). These objectives were formally approved by the SHB and its Executive Steering Committee (ESC) in October, 2008. Successful achievement of these objectives required coordinated, interdependent action by the departments and agencies identified by the NPAMDA as having MDA responsibilities (*see NPAMDA, Appendix B*), and those identified as having MDA responsibilities in the IAIS (Departments of Energy, State, Justice, Transportation, Homeland Security, and Defense, and the Office of the Director of National Intelligence) and MDA CONOPS (Department of the Navy Chief Information Officer, Customs and Border Protection, DHS Office of Infrastructure Protection, Office of Naval Intelligence and the Coast Guard Intelligence Coordination Center). Particularly high levels of cooperation were required among the three departments making the greatest investments in MDA: DOD, DHS, and DOT. This cooperation was enhanced significantly by the work of their Executive Agents for MDA through the SHB ESC.



We continue to witness a growing consensus on the value of a “whole of government” approach and increased reliance on information sharing and collaboration. For FY10, we look forward to continuing progress in achieving effective MDA in support of better management and protection of the global maritime domain. Only by building on our successes in growing a Global Maritime Partnership for MDA can we achieve effective understanding of the factors in the global maritime domain that impact our safety, security, economy, or environment.

Sincerely,

Gary Seffel
Director (Acting)
Office of Global Maritime Situational Awareness

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Table of Contents

| | |
|--|----|
| Forward | i |
| 1. Executive Summary | 1 |
| 2. Maritime Domain Awareness Overview..... | 6 |
| 2.1. Background | 6 |
| 2.1. Trends in MDA | 12 |
| 3. OGMSA Organization Chart | 19 |
| 3.1. External Organization | 19 |
| 3.2. Internal Organization | 20 |
| 4. Achieving MDA..... | 21 |
| 4.1. OGMSA Strategic Approach for FY09..... | 21 |
| 4.2. OGMSA Resources..... | 22 |
| 4.3. OGMSA Monitoring of MDA Activities across the U.S. Federal Government | 23 |
| 4.4. OGMSA Activities to Achieve MDA | 24 |
| 4.4.1. Technology: Data Sharing & Information Sharing Branch | 24 |
| 4.4.2. Relationships: Outreach & Coordination Branch | 31 |
| 4.4.3. Policy: Plans & Policy Branch | 40 |
| 5. Conclusion | 47 |
| Appendices | 49 |
| A: Significant MDA Activities across the Federal Government – FY’09 | |
| B: OGMSA Objectives and Progress Assessment Tool Dashboard | |
| C: Interagency Investment Strategy (IAIS) 15 Critical Tasks | |
| D: Maritime Domain Awareness Acronyms | |

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1. Executive Summary

Maritime Domain Awareness Overview

Background

The Office of Global Maritime Situational Awareness (OGMSA) is a multi-agency office created to coordinate efforts to achieve the situational awareness aspect of Maritime Domain Awareness (MDA) among U.S. federal, state, and local agencies, tribal authorities, other nations, and the maritime industry in support of the U.S. National Plan to Achieve Maritime Domain Awareness (NPAMDA). OGMSA reports to the Maritime Security Interagency Policy Committee (MSIPC) of the National Security Council (NSC). This document is intended to meet reporting requirements for Fiscal Year 2009. In addition, the Director of OGMSA reports to the Commandant of the U.S. Coast Guard and the U.S. Chief of Naval Operations.



The Director of OGMSA and the Director of Global Maritime and Air Intelligence Integration (GMAII) co-chair the National MDA Stakeholders Board, which serves as a forum for interagency coordination of MDA implementation. These co-chairs also report to the MSIPC on behalf of the Stakeholders Board. During FY09, the Board revised its charter to create an Executive Steering Committee, and added two new board members: Customs and Border Protection (CBP) and the National Maritime Intelligence Center (NMIC). OGMSA serves as the Executive Secretary of the Stakeholders Board and its Executive Steering Committee, which includes administrative, and coordination duties as well as designation as the principal point of contact for the Board.

Trends in MDA

Nations worldwide made progress developing MDA during this reporting period, motivated by a wide range of drivers, including smuggling, illegal fishing, emergency management, maritime safety, environmental concerns, and security needs. Internationally, MDA promotion efforts that focused on overall capabilities, independent of specific mission sets, were particularly effective. Domestically, improved MDA assisted agencies working in areas other than national security and homeland defense by including a growing range of information. This broader range of information also, in turn, enhanced security.

Factors impacting MDA development included piracy, receding arctic sea ice, a tragic terrorist attack in Mumbai, India launched from the sea, and environmental concerns. The President established a task force to develop a national policy for the oceans, U.S. coasts and the Great Lakes, which will require expanded sharing of information about environmental factors in the maritime domain.

While a great deal of work remains to be accomplished, there were many successes during FY09, many of which are explained in this document, which reports on MDA development in the second full year of operations under the U.S. National Concept of Operations for Maritime Domain Awareness (MDA CONOPS).

Achieving MDA

Strategic Approach

OGMSA pursued six specific objectives in support of the U.S. interagency MDA community during FY09 and matured its strategic approach: create synergy between the technology, relationships, and policy required for effective maritime information exchange.

Resources

OGMSA's first director completed his tour at the end of FY08. No replacement was identified during FY09, and the Deputy Director served as Acting Director throughout this reporting period. OGMSA has no permanently assigned staff: 27 people were provided by executive departments on an ad hoc basis. OGMSA has no dedicated funding appropriation. During FY09, the U.S. Coast Guard, on behalf of the DHS, continued to provide office space, associated administrative supplies and basic services.

OGMSA's largest expenditure of resources during FY09 was the travel required to promote and coordinate the development of global Maritime Domain Awareness. While the agencies providing personnel to OGMSA funded a portion of their travel, funding for most OGMSA travel was provided by agencies and organizations requesting OGMSA expertise or ability to broker relationships at conventions, symposia, meetings, exercises, and other events, or presentations by OGMSA on their behalf.

Interagency and International Efforts

During FY09, OGMSA tracked MDA efforts among U.S. federal MDA stakeholders. The results, presented in Appendix A, indicate significant progress in creating and supporting effective MDA and towards institutionalizing a "whole-of-government" approach to achieving MDA. Among the myriad of international MDA efforts, the Maritime Safety and Security Information System (MSSIS) stood out as the single best example of a successful global maritime information sharing network.

OGMSA's Supporting Activities

Technology

During FY09, the National MDA Stakeholders Board (SHB) approved the Architecture Management Hub (AMH) Plan. Four focus teams began supporting the development of an "As-Is" model of the MDA architecture. An Architecture Coordination Board (ACB) stood up to ensure alignment and integration of focus team efforts. The AMH is scheduled to complete an "As-Is" architecture during the first quarter of FY 2010 and a "To-Be" architecture by the end of FY 2010.

OGMSA's Science and Technology (S&T) Advisor led the National Maritime Awareness Technology Subcommittee (NMATS) of the MDA Stakeholders Board in initial efforts to catalog emerging MDA technologies in the areas of sensors and platforms, communication, and information exploitation technologies globally.

The third Technical Exchange on AIS via Satellite (TEXAS3) enabled more than 100 representatives from nine nations and the European Union to facilitate cross-industry understanding of space-based MDA initiatives and project milestones.

Relationships

OGMSA hosted the second annual Global Maritime Information Sharing Symposium (GMISS) September 15th through 17th at the National Defense University in Washington, DC. GMISS is an annual event hosted by OGMSA to align U.S. Government outreach to the maritime industry and improve and increase industry-government maritime information sharing partnerships.

Partner agencies included the U.S. Maritime Administration, U.S. Coast Guard, U.S. Navy Fleet Forces Command, the U.S. Department of Justice Office of Community Oriented Policing Services, the U.S. Office of the Director of National Intelligence, and the U.S. National Maritime Intelligence Center. In addition, Marine Log Magazine rolled its 2009 Combating Piracy conference into GMISS.

GMISS 09 brought together a diverse mix of more than 230 participants from maritime companies worldwide, U.S. federal state and local agencies, non-governmental agencies, and MDA experts from 15 nations. Ongoing working groups were established during GMISS 09 to address issues prioritized by attendees during the symposium, surrounding four themes:

- Building a Global Maritime Information Exchange Grid
- Bridging the Understanding gap between Maritime Industry and Government
- Resolving Information Privacy, Proprietary & Classification Issues
- The Global Response to Piracy as a Model of Co-Developed, Mutually Beneficial Policies

In addition, GMISS became an official program within the Maritime Administration during FY09, encompassing the cornerstone symposium, ongoing working groups, and the Naval Postgraduate School's Maritime Information Sharing Taskforce (MIST). MIST conducts

research on challenges and best practices of information sharing at the local and regional level in ports around the United States.

OGMSA's federal interagency outreach efforts developed and strengthened working relationships with offices and agencies across the Executive Branch and with the White House.

State and local outreach efforts included meetings with interagency operations centers, state fusion centers, and state agencies with maritime missions, as well as participation in MIST, to develop an understanding of the maritime information sharing needs and challenges of these organizations, as well as facilitate the exchange of best practices.

OGMSA was invited by several members of the global maritime community of interest to promote a range of global and regional MDA efforts, including the Maritime Safety and Security Information System (MSSIS), IALA-Net, and the Virtual Regional Traffic Management Center for the Americas (VRMTC-A). Participation in MSSIS expanded to 62 nations. IALA-NET expanded its role to developing global standards for sharing AIS and other eNavigation data. VRMTC-A beta tested a web-based prototype maritime information sharing system.

Policy

The evolution of the MDA Enterprise Information Hubs during FY09 included a revised Hub Implementation Plan, an integrated Plan of Actions and Milestones (POAM), a data-cataloging portal beta test, and significant progress toward a Single-Web-Portal to sources of MDA data. The MDA Vessel Enterprise Information Hub became operational and immediately began working with key stakeholders to identify their needs and their capabilities. The MDA Stakeholders Board approved the Vessel Hub Charter and Vessel Hub Plan, aligning the hub's operations with the four focus teams outlined in the MDA Architecture Management Hub Plan in order to better support the development of the digital information sharing network outlined in the MDA CONOPS. OGMSA took the first steps toward establishment of an Oceans Information Hub.

The Interagency Investment Strategy Sub-Committee (IAIS-SC) of the SHB launched an Interagency Solutions Analysis Working Group (IASA-WG). The Working Group developed an MDA Interagency Solutions Analysis Execution Plan to identify interagency solutions to the MDA gaps identified in the Interagency Solutions Analysis (IAIS)¹. The plan was approved by the MDA Stakeholders Board.

A series of interagency information sharing workshops produced an initial draft of an interagency information sharing barrier resolution policy to be refined by upcoming workshops.

¹ Maritime Domain Awareness Implementation Team, *National Maritime Domain Awareness (MDA) Requirements and Capabilities Working Group National MDA Study Interagency Investment Strategy Document (IAIS)*, May 3, 2007

Conclusion

Fiscal Year 2009 was a turning point for Maritime Domain Awareness and the global maritime community of interest made significant progress in developing awareness of the maritime domain. President Obama reaffirmed the U.S. MDA governance process, keeping in place the interagency committee for coordinating Maritime Security policy. Vessel traffic in the open oceans became more transparent during FY09. The U.S. maritime community of interest significantly improved its ability to share data with the rest of the government, while federal departments charged with homeland defense and security took a major step forward developing a Common Intelligence Picture. Other nations improved their own MDA capabilities and shared those improvements with the global maritime community of interest. Even the civilian private sector became excited by the ability to contribute to and benefit from global maritime awareness during FY09 using off-the-shelf, Web based applications. This moves MDA into the open-source domain and begins to bring to certain non-classified elements of global maritime situational awareness the benefits of mass collaboration, with thousands of volunteers contributing their own knowledge and information to a common picture of the world's oceans.

These developments set the stage for an even greater explosion of MDA achievements in Fiscal Year 2010. Because it is not bound to any large department, OGMSA is nimble enough to work effectively across the whole of the global maritime community of interest and stay on the crest of this growing wave of innovation. Therefore, despite its small staff and lack of enforcement authority, OGMSA is clearly delivering tremendous value to the U.S. Government as well as the global community. It is OGMSA's plan going forward to build on the successes of FY09 and expand its role in promoting, facilitating, and coordinating global MDA even more effectively in FY10.

2. Maritime Domain Awareness Overview

2.1. Background

In 2004, the U.S. federal government initiated actions to enhance U.S. national security and homeland security by protecting U.S. maritime interests². National Security Presidential Directive NSPD-41 / Homeland Security Presidential Directive HSPD-13 established the nation's first national maritime security policy in December 2004. Under that policy, and the supporting strategies, plans, and concept of operations (*Please see Exhibit 1, Page 10*), the Office of Global Maritime Situational Awareness (OGMSA) was established in August 2007.

The Maritime Domain: all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances.

Maritime Domain Awareness (MDA): the effective understanding of anything associated with the global maritime domain that could impact the safety, security, economy, or environment of the United States.

National Security Policy Directive NSPD-41 / Homeland Security Policy Directive HSPD-13, Dec. 21, 2004

A foundational concept in U.S. maritime security policy is Maritime Domain Awareness (MDA). MDA is the effective understanding of anything associated with the global maritime domain³ that could impact the safety, security, economy, or environment of the United States⁴. Under the U.S. maritime security strategy, MDA is a key national security requirement, it is heavily dependent on information sharing, and requires unprecedented cooperation among the public and private sectors, both nationally and internationally.⁵ It is achieved by coupling awareness of activity within the maritime domain with knowledge of intent or threat information⁶.

The National Strategy for Maritime Security (NSMS) is implemented through eight supporting plans, one of which is the National Plan to Achieve MDA (NPAMDA). The Maritime Security Interagency Policy Committee (MSIPC)⁷ is the primary forum for coordinating and implementing the NMAPDA⁸. The MSIPC operates within the framework of the National

² *National Security Presidential Directive NSPD-41, Homeland Security Presidential Directive HSPD-13, Dec. 21, 2004*

³ NSPD-41/HSPD-13 defines the maritime domain as: "all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances."

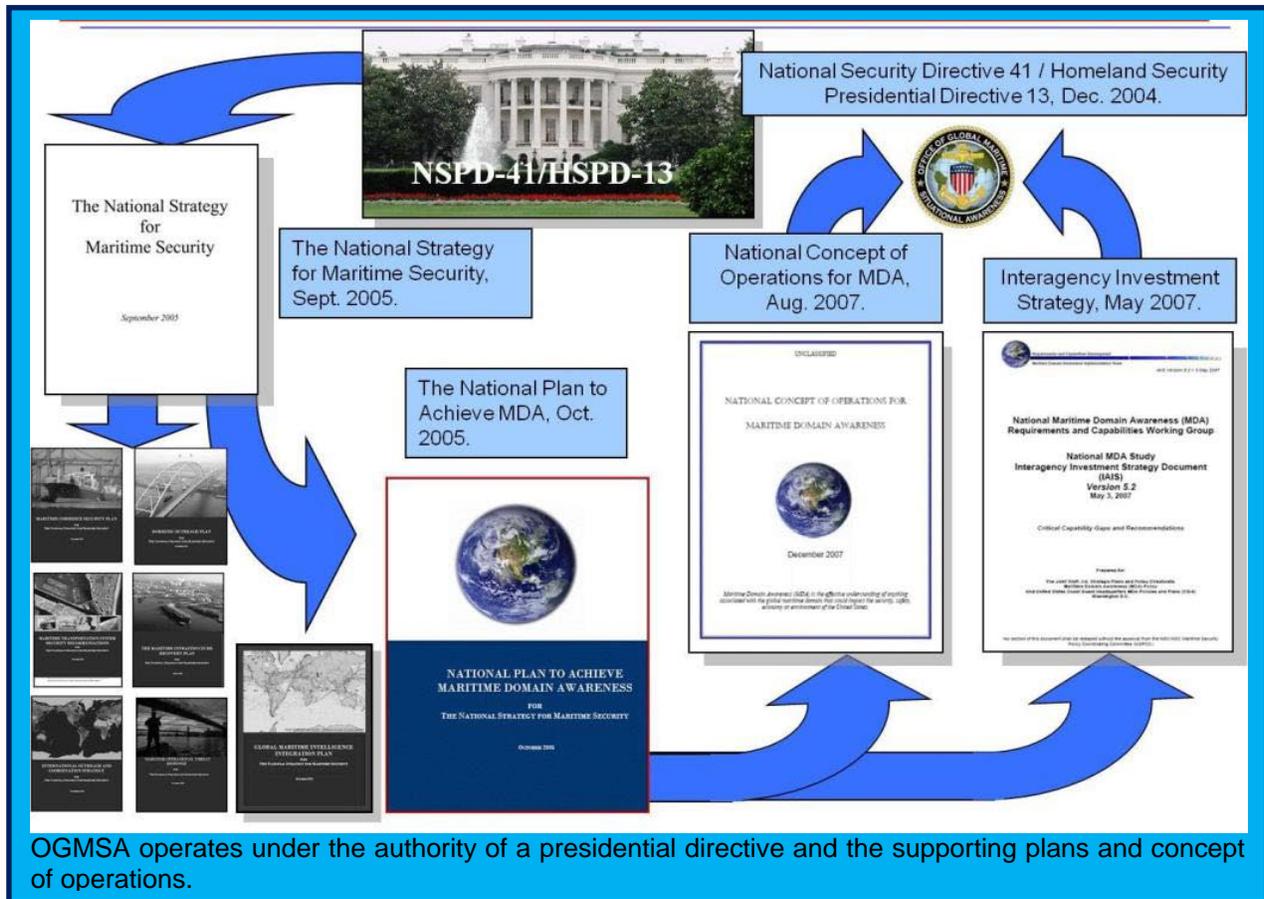
⁴ *NSPD-41/HSPD-13, Dec. 21, 2004*

⁵ *National Strategy for Maritime Security (NSMS), Sept. 2005*

⁶ Maritime Domain Awareness Implementation Team, *National Maritime Domain Awareness (MDA) Requirements and Capabilities Working Group National MDA Study Interagency Investment Strategy Document (IAIS)*, May 3, 2007

⁷ In NSPD-41/HSPD-13 President George W. Bush created the Maritime Security Policy Coordinating Committee. President Barack Obama restructured the National Security Council and Homeland Security Council in Presidential Directive 1, February 2009, with the duties of the MSPCC transferring the newly formed Maritime Security Interagency Policy Committee (MSIPC). For the purposes of continuity and ease of understanding, both organizations will be referred to as the MSIPC throughout this document.

⁸ *National Plan to Achieve Maritime Domain Awareness (NPAMDA)*, Oct. 2005



Security Council (NSC) and reports via the NSC Deputies Committee and Principals Committee to the President of the United States.

The NPAMDA established an MDA Implementation Team (MDA-IT) comprised of representatives of the U.S. federal interagency community to⁹:

- Provide a forum for interagency coordination of each MDA implementation action and task
- Draft a concept of operations that would, among other things, detail interagency coordination, and development of shared situational awareness through a national maritime common operating picture
- Recommend leads for specific MDA implementation actions and tasks to the MSPCC.

The resulting National Concept of Operations for MDA (MDA CONOPS) established OGMSA and made it responsible for effective access to maritime information and data critical to building the situational awareness component of Global MDA¹⁰. In addition, it established a National MDA Stakeholders Board to continue serving as a forum for interagency coordination of MDA implementation.

⁹ NPAMDA

¹⁰ Maritime Domain Awareness Implementation Team, *National Concept of Operations for Maritime Domain Awareness (MDA CONOPS)*, Dec. 2005

OGMSA reports to the MSIPC, of which the Director of OGMSA is a member, and is responsible, through the National MDA Stakeholders Board, for administering the NPAMDA. Reporting includes participation in quarterly meetings as a member of the MSIPC, and an annual report to the MSIPC on OGMSA's activities and implementation of MDA directives. The intent of this report is to fulfill that reporting requirement.

In addition, the Director of OGMSA has dual reporting responsibility to the Commandant of the U.S. Coast Guard (USCG) and to the U.S. Chief of Naval Operations, and keeps each apprised of MDA progress and OGMSA activities through meetings and briefings either directly, or through their respective staffs.

OGMSA is a multi-agency office that coordinates efforts among U.S. federal, state, and local agencies, tribal authorities, other nations, and the maritime industry to achieve the situational awareness aspect of MDA in support of the NPAMDA¹¹. Because OGMSA does not reside within any specific department and is chartered to develop global MDA independent of any specific mission or usage, it is recognized worldwide as an impartial, honest broker, coordinating effective MDA on behalf of the interests of all members of the Global Maritime Community of Interest (GMCOI).

The MDA Stakeholders Board is comprised of representatives from maritime stakeholder agencies and those agencies responsible for the eight plans that support the National Strategy for Maritime Security, including the NPAMDA¹². The National MDA CONOPS identified the Director of Global Maritime and Air Intelligence Integration (GMAII) and the Director of OGMSA as co-chairs of the MDA Stakeholders Board. During FY09, the Stakeholders Board revised its charter with MSIPC approval and created an Executive Steering Committee (ESC), comprised of MDA Executive Agents from the three federal departments with the biggest stake in MDA. The MDA Executive Agent for DOD is the Navy. The MDA Executive Agent for DHS is the Coast Guard. The MDA Executive Agent for DOT is the Maritime Administration (MARAD). GMAII and OGMSA also co-chair the ESC¹³.

¹¹ *MDA CONOPS*

¹² *Ibid.*

¹³ *MDA Stakeholder Board Charter*, revised January 10, 2008



US Chief of Naval Operations Adm. Gary Roughead delivers remarks about maritime strategy during EXPONAVAL in Valparaiso, Chile Dec. 2, 2008. Chile is one of several nations with extremely robust MDA programs. EXPONAVAL included a special session to address international MDA issues for the second time in 2008, which OGMSA again partnered with the Chilean Navy to coordinate. (U.S. Navy photo by Mass Communication Specialist 1st Class Tiffini M. Jones)

OGMSA also serves as Executive Secretary of the MDA Stakeholders Board and its ESC¹⁴. These duties include:

- Providing administrative and staff support to the Board and Executive Steering Committee
- Coordinating Board meetings
- Setting the Agenda for Board meetings with the approval of the co-chairs
- Supporting activities as directed by the co-chairs
- Acting as the principal point of contact for the Board
- Developing, disseminating and archiving Board documents, including meeting notifications, meeting summaries and notes, decision memorandums, and all other relevant documents.

During FY09, Customs and Border Protection (CBP) and the National Maritime Intelligence Center (NMIC) became members of the National MDA Stakeholders Board. The Board membership during FY09 consisted of:

- GMAII (co-chair)
- OGMSA (co-chair)
- Department of State (DOS)
- Department of Commerce (DOC)
- Department of Justice (DOJ)
- DOD
 - Office of the Secretary of Defense
 - Joint Chiefs of Staff
 - MDA Executive Agent (DOD MDA EA)
 - Navy N3N5 MDA Office
- DHS
 - USCG
 - CBP
 - MDA Executive Agent (DHS MDA EA)
- DOT MDA Executive Agent (DOT MDA EA)
- Program Manager – Information Sharing Environment (PM-ISE)
- NMIC

¹⁴ ibid

Exhibit 1:



United States National MDA Policy Documents

National Security Presidential Directive 41 / Homeland Security Presidential Directive 13 (NSPD41/HSPD13); December 2004

This presidential directive ordered an interagency effort to draft a National Strategy for Maritime Security, identified Maritime Domain Awareness as a vital component of that strategy, and defined MDA as the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy or environment of the United States. It established the Maritime Security Policy Coordinating Committee (MSPCC) within the National Security Council (NSC) and Homeland Security Council (HSC) framework as the primary forum for interagency coordination of the implementation of the directive. (*The MSPCC became the Maritime Security Interagency Policy Committee, or MSIPC, under Presidential Directive 1 of February 2009*)

National Strategy for Maritime Security (NSMS); September 2005

Three broad principles provide overarching guidance to the NSMS: (1) preserving the freedom of the seas; (2) facilitating and defending commerce; and (3) facilitating the movement of desirable goods and people across our borders, while screening out dangerous people and material. The NSMS is implemented through eight supporting plans, two of which have a direct bearing on maritime domain awareness (MDA) and are described below.

Global Maritime Intelligence Integration Plan (GMII Plan); October 2005

The GMII Plan uses existing capabilities to integrate all available intelligence regarding potential threats to US interests in the maritime domain, and established the Office of Global Maritime Intelligence Integration (which later became the Office of Global Maritime and Air Intelligence Integration, or GMAII).

Exhibit 1 (continued):

United States National MDA Policy Documents

National Plan to Achieve Maritime Domain Awareness (MDA Plan); October 2005

The plan is based on the concept that effective MDA enables focused law enforcement and military action, and supports strategic decision making and operational threat response, while promoting freedom, civil liberties and prosperity. The MDA Plan established the Maritime Domain Awareness Implementation Team, directed the development of a National Concept of Operations for Maritime Domain Awareness and a National MDA Interagency Investment Strategy (IAIS).

National MDA Interagency Investment Strategy (IAIS); May 2007

In the IAIS the MDA Implementation Team outlined material and non-material recommendations at the Federal departmental level to achieve a coordinated national MDA capability, including a prioritized list of capability gaps impacting national MDA.

National Concept of Operations for Maritime Domain Awareness (MDA CONOPS); August 2007

The CONOPS was written with the intent of evolving through a spiral development process. The first spiral, still in effect, described the federal mechanism for developing interagency and agency-specific policies, processes and procedures to align activities that contribute to achieving MDA; recommended the establishment of and outlined the operations of the Office of Global Maritime Situational Awareness (OGMSA); and established an MDA governance structure comprised of the OGMSA, GMAII, an MDA Stakeholder Board, and MDA Enterprise Hubs.

Presidential Directive 1; February 2009

This presidential directive reorganized the NSC and HSC structure for the Obama Administration. Policy Coordinating Committees were replaced by Interagency Policy Committees within the framework of the National Security Council, tasked with providing policy analysis for consideration by the more senior committees of the NSC system, and ensuring timely responses to decisions made by the president. The MSPCC was replaced by the Maritime Security Interagency Policy Committee (MSIPC).

2.2. Trends in MDA

MDA has become a truly global initiative with dozens of nations pursuing maritime awareness



Members of the Office of Coast Survey's Navigation Response Team 5 (NRT5) within NOAA's National Ocean Service helped other federal and local agencies with side scan sonar operations during the search for the missing engines of US Airways Flight 1549 following its January 15, 2009 crash landing on the Hudson River. The sharing of maritime information was key in rescuing the passengers and crew and locating key aircraft components for the subsequent safety investigation. (NOS photo)

programs, some extremely robust, such as those of the United Kingdom, Singapore, Italy and Chile. Most nations are eager to collaborate with traditional allies or partners, and the majority is collaborating on regional or global initiatives. Although security concerns prompted initial U.S. MDA efforts, many other nations pursue MDA to support solutions to other challenges, including drug smuggling, human trafficking, illegal fishing, maritime safety, emergency management, and global climate change. Because effective MDA requires unprecedented information sharing¹⁵, it must provide value to each participant by including not only security information, but maritime safety, economic and environmental information as well. Therefore, many successful global MDA initiatives have not focused on supporting specific missions, but on enabling increased sharing of all appropriate maritime information. For example, in its international outreach efforts promoting the Maritime Safety and Security Information Sharing System (MSSIS), OGMSA has encountered a wide range of motivations for participation, with security uses low among the priorities of several nations that have recently joined.

This same application of shared MDA outside security efforts has occurred domestically. For example, when U.S. Airways Flight 1549 made an emergency water landing on the Hudson River with 155 passengers on board in January, the successful rescue of all passengers and crew and the

subsequent recovery of the aircraft's engines for the safety investigation relied on extensive maritime information sharing¹⁶. Among the organizations involved were:

- The National Oceanic and Atmospheric Administration (NOAA) (DOC)
- The Coast Guard (DHS)
- The Army Corps of Engineers (DOD)
- The FBI (DOJ)
- The National Center for Secure and Resilient Commerce at the Stevens Institute of Technology in New Jersey
- The New York City Office of Emergency Management
- The Fire Department of New York
- The National Transportation Safety Board.

¹⁵ NSMS

¹⁶ "NOS Responds to US Airways Flight 159 Crash" *National Ocean Service Weekly News*, Feb. 2009

However, in theory, the same pattern of extensive maritime information sharing used to overcome challenges in locating and recovering the second engine of the aircraft could be applied to locating and disabling waterborne improvised explosive devices or mines in U.S. waterways.

Similarly, international sharing of data broadcast for collision avoidance purposes by Automatic Identification System (AIS) transponders on vessels of 300 gross tons or more now forms the foundation of several vessel tracking systems deployed primarily for security purposes.

Global MDA efforts were accelerated during 2009 by the precipitous rise of piracy in the waters off Somalia, which prompted a significant increase in maritime information sharing among a broad range of powers, including the United States, Russia, the European Union, China, Australia, India, Pakistan, Canada, Singapore and Turkey, to coordinate anti-piracy actions. The seizure of the U.S. flagged MV Maersk Alabama by Somali pirates Apr. 8, 2009 drew round-the-clock national media attention in the United States and focused increased attention from the Obama Administration on maritime security issues.



The guided-missile destroyer USS Bainbridge (DDG 96) tows the lifeboat from the Maersk Alabama to the amphibious assault ship USS Boxer (LHD 4), in background, Apr. 13, 2009 to be processed for evidence after the successful rescue of Capt. Richard Phillips. Phillips was held captive by suspected Somali pirates in the lifeboat in the Indian Ocean for five days after a failed hijacking attempt off the Somali coast. Boxer is deployed as part of Boxer Amphibious Readiness Group/13th MEU supporting maritime security operations in the US 5th fleet area of responsibility. (U.S. Marine Corps photo by Lance Cpl. Megan E. Sindelar)

International attention was also drawn to vulnerabilities to small boats by a terrorist attack in Mumbai, India between Nov. 26 and 29, 2008. The terrorists are believed to have left Karachi, Pakistan in a small launch Nov. 22 and transferred to another small vessel, then boarded the merchant vessel Al-Husseini¹⁷. Half way to India, they took control of the Indian fishing trawler MV Kuber, which gave them undetected access to within four miles of Mumbai. By night, they used an inflatable dingy to complete the final leg of the transit unobserved to begin the attack that killed 166 Indian, U.S., U.K., and Israeli citizens, and wounded another 304¹⁸. It was reported that U.S. intelligence officials had warned India about a pending maritime attack a

¹⁷ Aryn Baker, Rawal Pindi, & Jyoti Thottam, "The Making of a Mumbai Terrorist" *Time Magazine*, Mar. 8, 2009.

¹⁸ Sumit Sharma, "Lawyer for Mumbai Attack Gunman Requests Security" *Bloomberg.com*, Mar. 30, 2009, accessed Sep. 27, 2009.

month earlier¹⁹. However, when Indian police located the abandoned Kuber and notified the Indian Coast Guard prior to the start of the attack, the information was not shared with any other authorities, including a patrolling police boat²⁰. At the time, police shared responsibility with the Coast Guard for maritime surveillance. The attack prompted immediate acceleration of MDA initiatives within the Indian government, including joining the Maritime Safety and Security Information System (MSSIS) global AIS-sharing network. However, despite the dramatic demonstration of the potential for a small boat terrorist attack on the U.S. population presented by the Mumbai attack, it did not spark widespread interest or awareness among the U.S. public. Interestingly, despite the limited threat of piracy to U.S. flagged shipping, piracy received far more extensive media coverage and public interest in the United States and close attention at the highest levels of government following the attack on the MV Maersk Alabama.

Regionally, receding Arctic sea ice prompted a surge in MDA activities to protect the undersea resources of the nations that claim them, and to monitor newly opened sea lanes. For example, the Nordic countries have collaborated on maritime issues as members of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, or Helsinki Convention, since 1974²¹. They have been broadly sharing maritime information since the loss of 850 lives aboard the capsized M/S Estonia in 1994. However, the Stoltenberg Report, presented to a meeting of the foreign ministers of Denmark, Finland, Iceland, Norway and Sweden in Oslo in February, proposed the five nations collaborate on a cohesive, integrated Nordic Maritime Monitoring System, prompted in large part by the increased use of newly navigable ocean areas. The plan calls for a digital information sharing environment that links all the maritime data of each nation to maximize the use of maritime resources, and includes an expectation of large-scale information sharing with the United States, Canada, and Russia²². The Nordic Maritime



The Helsinki Commission (HELCOM) promotes maritime information sharing among the states bordering the Baltic Sea. HELCOM maintains an AIS data sharing network similar to the Maritime Safety and Security Information System (MSSIS) developed by the United States. However, the primary focus of HELCOM is the marine environment.

Information Exchange would most likely encompass a current maritime information sharing system that already links Sweden, Finland and Denmark with Estonia, Lithuania, and Germany

¹⁹ Damien McElroy, "Mumbai Attacks: US Intelligence warned India a Strike from Pakistani was Planned" *The Daily Telegraph* (London), Dec. 2, 2008.

²⁰ "I did not Tell Police about Boat Kuber, says Top Cop" *Express India*, Jun. 2, 2009.

²¹ The Helsinki Convention, www.helcom.fi, accessed Sept. 28, 2009. Participants include: Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. The Helsinki Commission, or HELCOM, is the governing body, and works to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental co-operation.

²² *Nordic Cooperation on Foreign and Security Policy: Proposals presented to the extraordinary meeting of Nordic foreign ministers in Oslo on 9 February 2009*, Thorvald Stoltenberg, Feb. 9, 2009

and will soon include Latvia and Poland²³. The proposal has wide support in the Nordic nations²⁴.

Domestically, the opening of Arctic waters has also shaped MDA policy. A presidential directive issued in January set a new Arctic Policy for the United States²⁵. It specifically tasked the Secretaries of State, Defense, and Homeland Security, in coordination with heads of other relevant executive departments and agencies, to increase Arctic maritime domain awareness in order to protect maritime commerce, critical infrastructure, and key resources.

Collection and sharing of environmental maritime information has also become a higher priority domestically. A presidential memorandum of June 12 tasked the heads of U.S. executive departments and agencies to develop a national policy for the oceans, U.S. coasts and the Great Lakes²⁶. The policy is intended to ensure the protection, maintenance, and restoration of the health of ocean,

coastal, and Great Lakes ecosystems and resources; enhance the sustainability of ocean and coastal economies; preserve the maritime heritage of the United States; provide for adaptive management to enhance the understanding of and capacity to respond to climate change; and is to be coordinated with U.S. national security and foreign policy interests. On September 10, the Interagency Oceans Policy Task Force, under the leadership of the White House Council on



Coast Guard Commandant, Adm. Thad Allen and Dr. Jane Lubchenco, the Under Secretary of Commerce for Oceans and Atmosphere pose for the media while observing personnel from the International Ice Patrol* and the crew aboard a Kodiak-based C-130 Hercules aircraft deploying a World Ocean Circulating Experiment buoy into the Arctic Ocean Aug. 19, 2009. Leaders from across the federal maritime community of interest, including Ocean Policy Task Force members, traveled to the Arctic Circle for an Interagency Arctic Awareness Trip in August. (U.S. Coast Guard photo by Petty Officer 3rd Class Charly Hengen)

*The International Convention on the Safety of Life at Sea (SOLAS), signed January 30, 1914, established an international ice patrol service, under the management of the United States, to patrol the ice regions near the Grand Banks of Newfoundland and share information about icebergs with the international maritime community. The US Revenue Cutter Service, forerunner of the Coast Guard, began the first patrols in 1914. International Ice Patrol, www.uscg-iip.org.

²³ Speech by the (Swedish) Minister for Defence Sten Tolgfors at Almedalen on the Baltic Sea Co-operation, July 3, 2009, <http://www.regeringen.se/sb/d/12091/a/129883>, accessed Sept. 23, 2009

²⁴ “Nordic Council to meet Stoltenberg and Ahtisaari on Åland” *Norden*, Sept. 21, 2009, <http://www.norden.org/en/news-and-events/news/nordic-council-to-meet-stoltenberg-and-ahtisaari-on-aaland>, accessed Sep. 23, 2009

²⁵ *National Security Presidential Directive NSPD-66, Homeland Security Presidential Directive HSPD-25*, Jan. 9, 2009

²⁶ President Barack Obama, *Memorandum for the Heads of Executive Departments and Agencies, Subject: National Policy for the Oceans, Our Coasts, and the Great Lakes*, June 12, 2009

Environmental Quality, released an interim report for public comment²⁷. Among the nine priority objectives of the implementation strategy endorsed by the task force, are:

- **Inform Decisions and Improve Understanding:** Increase knowledge to continually inform and improve management and policy decisions and the capacity to respond to change and challenges.
- **Coordinate and Support:** Better coordinate and support Federal, State, tribal, local, and regional management of the ocean, our coasts, and the Great Lakes. Improve coordination and integration across the Federal Government, and as appropriate, engage with the international community.
- **Ocean, Coastal, and Great Lakes Observations and Infrastructure:** Strengthen and integrate Federal and non-Federal ocean observing systems, sensors, and data collection platforms into a national system and integrate that system into international observation efforts.

These objectives align with ongoing MDA initiatives. However, the overall intent of the policy and the direction of the interim report clearly place the emphasis on environmental data.

The interim report recommends establishing a National Ocean Council (NOC) with overall responsibility for implementing the National Policy, and developing strategic plans for each of the nine objectives within 12 months of the stand-up of NOC.



Coast Guard Rear Adm. Sally Brice-O'Hara, US Coast Guard deputy commandant for operations, answers questions about the Interagency Ocean Policy Task Force during a Sep. 17, 2009 press conference in San Francisco. (U.S. Coast Guard photo by Petty Officer 2nd Class Matthew Schofield)

Each plan must:

- Identify specific and measurable near-term, mid-term, and long-term actions, with appropriate milestones, performance measures, and outcomes to fulfill each objective;
- Consider smaller-scale, incremental, and opportunistic efforts that build upon existing activities, as well as more complex, larger-scale actions that have the potential to be truly transformative;
- Explicitly identify key lead and participating agencies;
- Identify gaps and needs in science and technology; and
- Identify potential resource requirements and efficiencies; and steps for integrating or coordinating current and out-year budgets.

²⁷ The White House Council on Environmental Quality, *Interim Report of The Interagency Ocean Policy Task Force*, Sept. 10, 2009

Homeland security applications to MDA, however, remain critical. Post 9/11 information sharing efforts were initially launched to help prevent additional attacks. Although the most recent example comes from outside the maritime domain, the arrest of alleged al-Qaeda-trained terrorist Najibullah Zazi by the FBI Sep. 19, 2009 and the disruption of his alleged plot to bomb targets in New York demonstrate the value of information-sharing efforts to enhance U.S. national security and homeland security and the effectiveness of efforts so far²⁸.

Much work remains to be done. In March, the Markle Foundation Task Force on National Security in the Information Age released its latest report. The task force, comprised of former policymakers from the Carter, Reagan, Bush, Clinton and Bush administrations, senior executives from the information technology industry, and privacy advocates, was formed in 2002 to determine how best to make information discoverable and accessible to the right officials at the right time to enable improved decision making with regard to major security threats against the United States²⁹. The report stated that the United States is still vulnerable to attack because it is “still not able to connect the dots. At the same time, civil liberties are at risk because (the United States doesn’t) have the government-wide policies in place to protect them as intelligence collection has expanded.”³⁰

In September, the DHS Office of the Inspector General released a report on the U.S. Small Vessel Security Strategy that found progress has been made, but the nation’s ports, waterways, and maritime borders remain vulnerable³¹. Among the criticisms were weaknesses in maritime awareness and information sharing programs. To succeed, the Strategy, released in April 2008, must counter a potential threat from among 13 million registered U.S. recreational vessels, 82,000 fishing vessels, and 100,000 other commercial small vessels³², any small vessel based in a nearby nation, or a



A boarding team from the Coast Guard Cutter Bertholf inspects an interdicted go-fast boat approximately 80 miles off the coast of Guatemala July 9, 2009. The boat was one of two suspected drug smuggling boats stopped by the Bertholf. The Coast Guard is the lead agency for countering the small vessel security threat to the United States. (U.S. Coast Guard photo by Petty Officer 3rd Class Michael Anderson)

²⁸ Bruce Finley, “Post-9/11 tools a help in Zazi case” *The Denver Post*, Sept 27, 2009

²⁹ Markle Foundation, www.markel.org, accessed September 28, 2009

³⁰ Markel Foundation Task Force on National Security in the Information Age, *Nation At Risk: Policy Makers Need Better Information to Protect the Country*, March 2009

³¹ Department of Homeland Security Office of Inspector General, *DHS’ Strategy and Plans to Counter Small Vessel Threats Need Improvement*, September 10, 2009

³² Department of Homeland Security, *Small Vessel Security Strategy*, April 2008

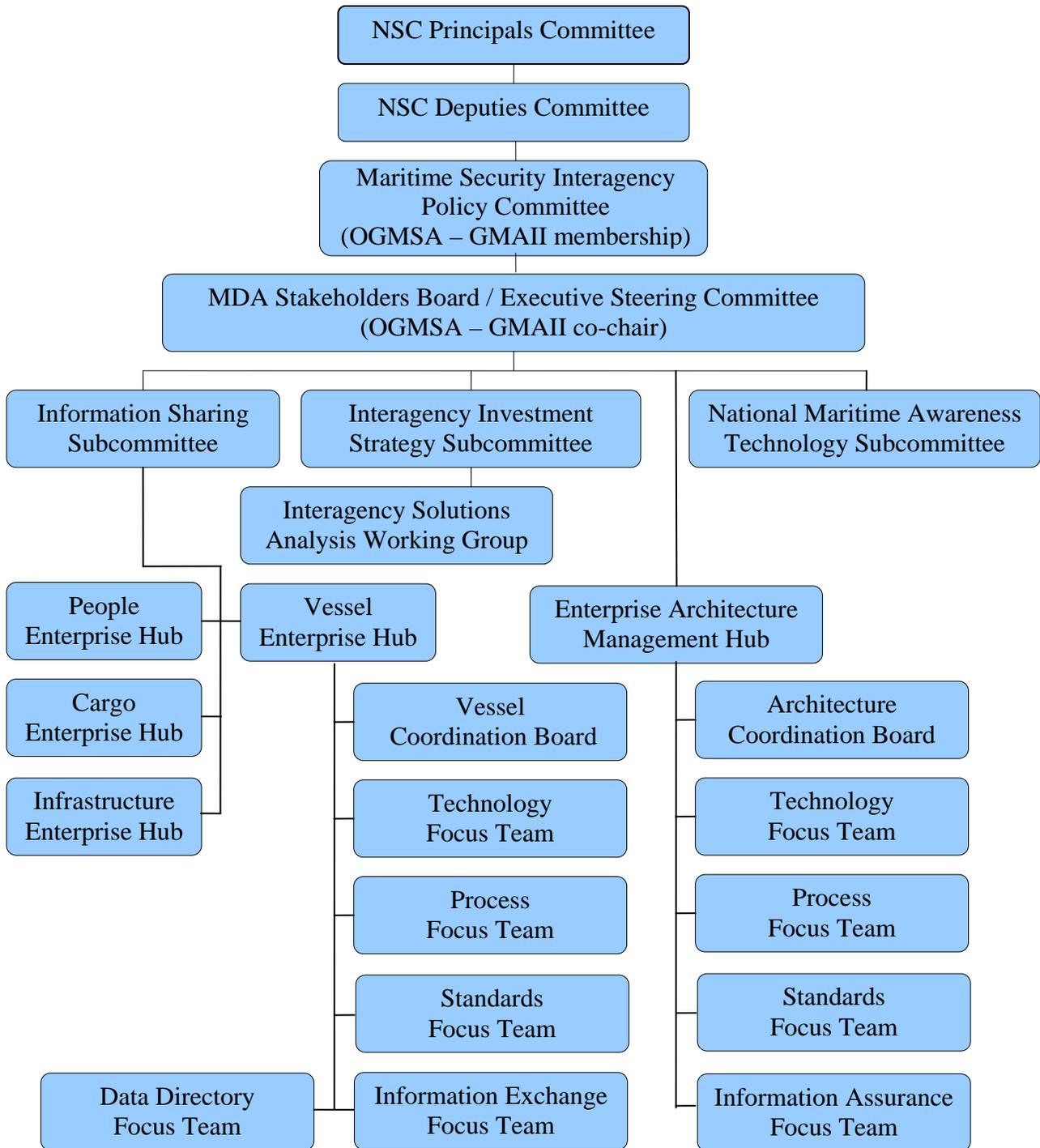
small vessel deployed from a mother ship approaching U.S. waters. Small vessel awareness is just one piece of the overall MDA picture.

There are many successes, as well, in this incredibly ambitious undertaking; many of which are documented in this report. The analogous sharing of global weather and financial data evolved over centuries. To put MDA progress in perspective, the MDA CONOPS and its companion document, the Interagency Investment Strategy (IAIS)³³ set a deadline of five years (2012) to accomplish the short-term goals needed to close the most critical gaps in U.S. MDA, 10 years (2017) for mid-term goals, and 20 years (2027) for long-term goals. This report summarizes progress made within the second full year of that timeframe: FY09.

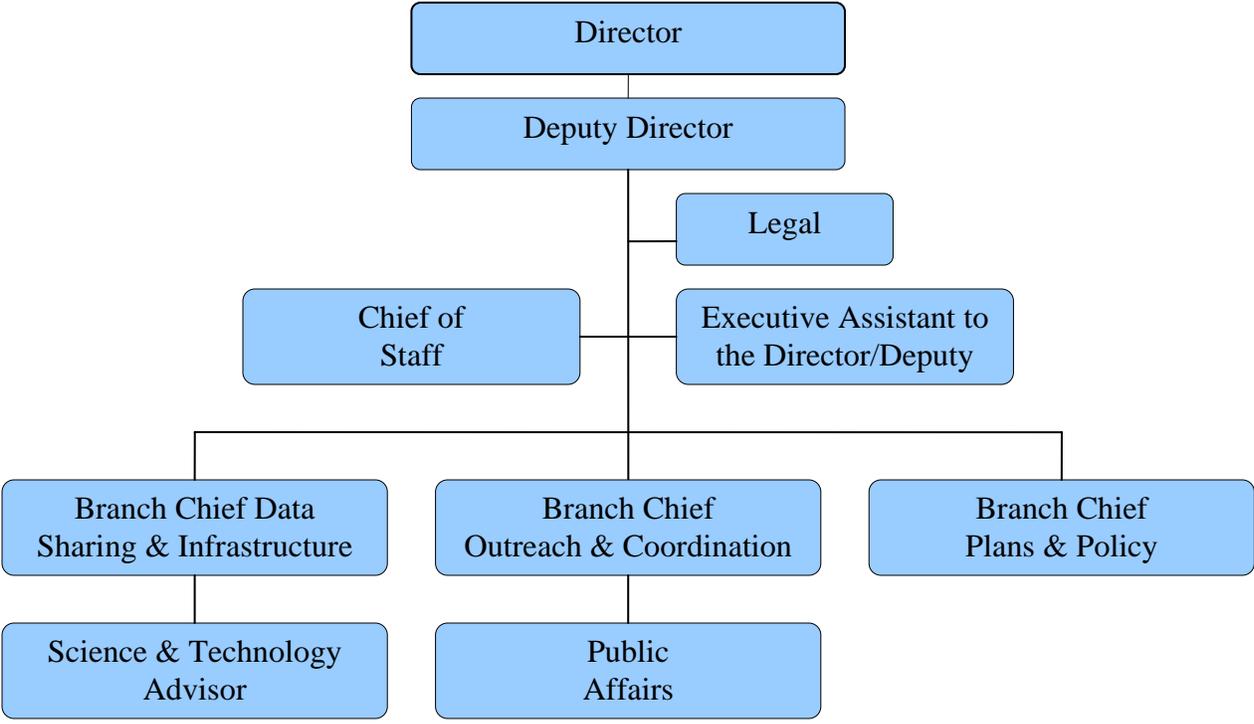
³³ *IAIS*

3. OGMSA Organization Charts

3.1. OGMSA External Organization Structure



3.2. OGMSA INTERNAL ORGANIZATIONAL CHART



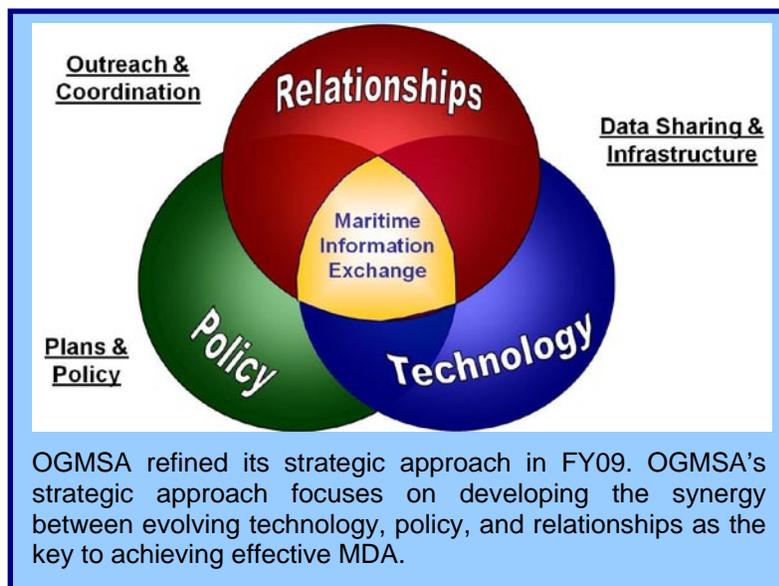
4. Achieving MDA

4.1. OGMSA Strategic approach for FY09

OGMSA met with the National MDA Stakeholder Board ESC in October, 2008 to identify the most pressing MDA objectives of the U.S. federal interagency community on which OGMSA should focus. Six objectives were identified:

1. Development of a national MDA Enterprise Architecture led by the Department of the Navy (Chief Information Officer). This effort must synchronize with similar efforts within the Intelligence Community.
2. A coherent federal outreach and coordination effort for the maritime industry led by DOT (MARAD).
3. Outreach to / coordination with state, local, and international civil partners led by DHS (USCG).
4. Creation, maintenance, and appropriate dissemination of an inventory/index of all MDA-related projects and research efforts (including those w/in the DOD and the Intelligence Community).
5. Increased availability and sharing of maritime persons, cargo, infrastructure, and vessel data.
6. OGMSA Project Management coordination of these objectives

OGMSA adopted these as its organizational objectives for FY09 in support of interagency MDA efforts, and developed measurable sub-objectives and goals to support them.



In developing a plan to pursue these varied objectives, OGMSA refined its strategic approach in FY09. OGMSA identified three basic requirements to achieving MDA: technology, policy, and relationships. OGMSA had also found that while many organizations focused primarily on the technology, it is the least difficult part of the equation. Most of the technology already exists to link data. However, the policies are not in place to allow or require the transfer of the data or to support cooperative development of technological

solutions, and the relationships do not yet exist to engender the trust required to change these policies. The rewards of widespread information sharing have not been sufficient so far to pass

the tipping point in motivating the GMCOI to develop sufficient relationships and compatible policies. Incremental progress in each area is required to support progress in each of the others.

OGMSA's strategic approach during FY09 focused on developing the synergy between evolving technology, policy, and relationships as the key to achieving effective MDA. This strategic approach has guided OGMSA's actions toward approaching the six Objectives identified above. The fact that this approach has subsequently appeared in the MDA presentations of practitioners around the world speaks to its soundness. Progress in achieving effective MDA during FY09 demonstrated the effectiveness of the strategy.

4.2. OGMSA Resources

Per the MDA CONOPS, which authorized the creation of OGMSA in August 2007, the Director of OGMSA is to be a career senior executive or flag officer designated by mutual agreement between the Secretary of Defense and Secretary of Homeland Security. OGMSA's first director completed his tour at the end of FY08. No replacement was identified during FY09, and the Deputy Director, Mr. Gary Seffel, served as Acting Director throughout this reporting period.

OGMSA has no permanently assigned staff. Staff members are provided by other agencies on an ad hoc basis, as required and available. These agencies also provide limited travel funds in support of their personnel. Staffing levels fluctuated during FY09. However, for the majority of FY09, the staff consisted of:

- 2 general schedule government civilians from the USCG
- 1 general schedule government civilian from MARAD
- 1 commissioned officer from the U.S. Navy
- 13 commissioned officers from the U.S. Navy Reserve
- 1 commissioned officer from the USCG
- 4 commissioned officers from the USCG Reserve
- 1 commissioned officer from NOAA
- 2 senior enlisted sailors from the U.S. Naval Reserve
- 2 contractors funded one each by the USCG and U.S. Northern Command (NORTHCOM)

OGMSA has no dedicated funding appropriation. During FY09, the USCG, on behalf of the DHS, continued to provide office space, associated administrative supplies and basic services.

OGMSA's largest expenditure of resources during FY09 was the more than 240,000 miles of travel required to promote and coordinate the development of global MDA. While the agencies providing personnel to OGMSA funded a portion of their travel, funding for most OGMSA travel was provided by agencies and organizations desiring OGMSA representation or expertise at exercises, conventions, symposia, meetings, and other events, or presentations by OGMSA on their behalf.

OGMSA began coordinating the 2009 Global Maritime Information Sharing Symposium (GMISS) with no funding and completed most coordination in house for the global event that

drew more 230 participants from 15 nations. As the event developed, OGMSA was able to arrange for funding by MARAD, the USCG, the Office of the Director of National Intelligence (ODNI), the DOJ Office of Community Oriented Policing Services (COPS), and the U.S. Navy. These resources funded the supplies and printing services required to conduct a successful symposium, the use of collaboration software that significantly improved the ability of attendees to participate in so large a symposium, travel expenses for representatives of municipal law enforcement agencies around the nation, and the development of a report summarizing concepts presented and decisions reached at the symposium. The Navy and ODNI also provided personnel to assist with coordinating and executing the symposium. In addition, the U.S. National Defense University, which provided the venue for the event, donated invaluable audiovisual and information technology support without which the symposium would not have succeeded.

4.3. OGMSA Monitoring of MDA Activities across the U.S. Federal Government

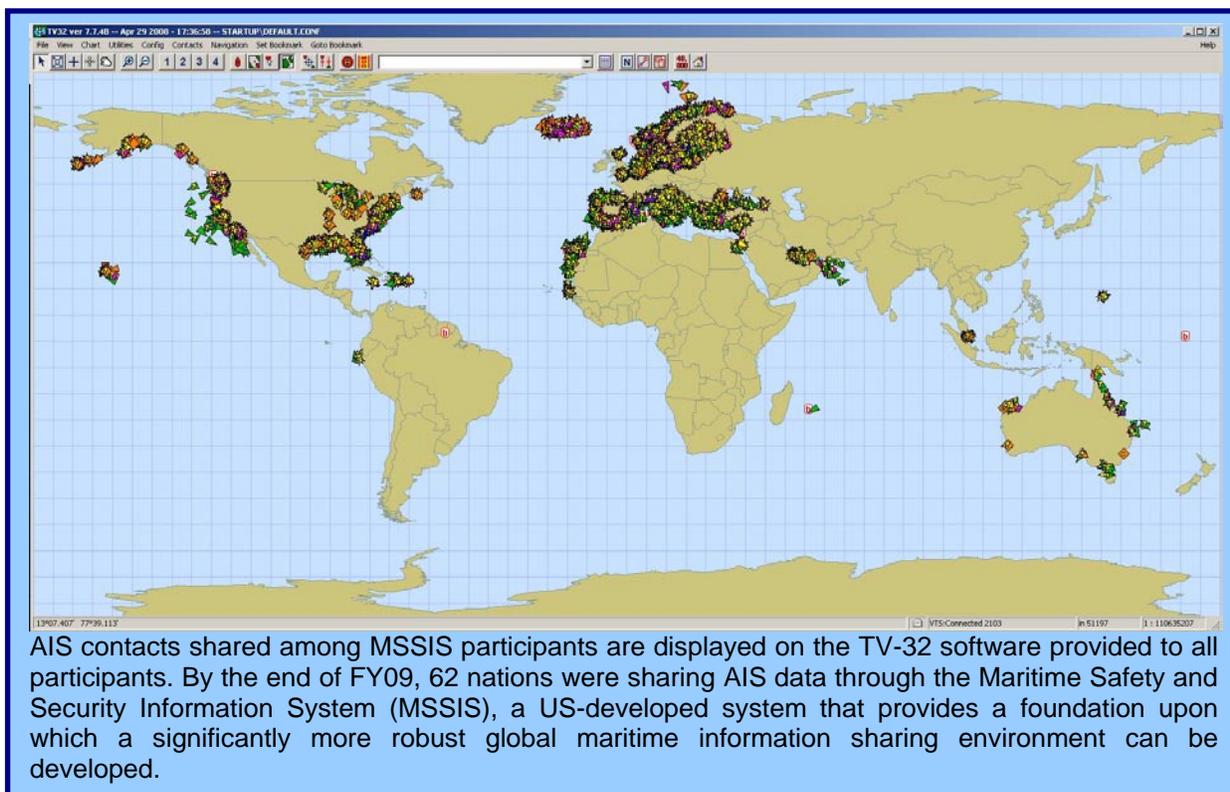
In accordance with the MDA CONOPS, OGMSA spearheaded an effort to document the MDA activities of each U.S. federal MDA stakeholder agency during FY09. These efforts resulted in detailed inputs from four stakeholders: DOC, DOD, DHS and DOT. For a complete description of their efforts please review Appendix A. The Director of GMAII, OGMSA's co-chair of the MDA Stakeholders Board, released an annual report documenting its own MDA activities for FY09, which is not duplicated here.

The efforts of the interagency community paint a clear picture of a "whole of government" approach improving maritime situational awareness. These departments' activities are indicative of an overall effort to improve interagency information sharing, prevent information stove pipes, and develop an improved process for anticipating and predicting emerging threats. In addition, input from the MDA Executive Agents for DOD and DHS demonstrate that MDA is viewed as a critical requirement to support their operational commanders by improving the level of fidelity of their situational awareness for more effective command and control.

Although the U.S. Government was involved in several beneficial international outreach initiatives in support of MDA during FY09, MSSIS remains the single best example of the possibilities of a global MDA network. MSSIS was developed by DOT in support of DOD. Throughout FY09, the DOT remained the primary technical consultant for participating nations and the DOD worked with several partner nations in securing the technical capabilities required to participate. The U.S., and specifically OGMSA, also remained the leading promoter of the system.

During FY09, the MDA Stakeholders Board collaborated on developing an MSSIS Governance Charter. OGMSA provided the initial draft charter, identifying MARAD as the U.S. MSSIS Administrator. The charter, 14 months in the making, now only awaits secretary-level signature by DOD, DHS and DOT.

MSSIS is a tool to develop network of nations sharing non-classified maritime information. Users around the world have recognized MSSIS as a foundation of global MDA. It enables participants to move beyond bilateral partnerships to make a first connection to a truly global maritime information sharing partnership. Participants and proponents worldwide have praised it as an effective tool for building regional stability through improved intergovernmental maritime partnerships, and as a foundation upon which a significantly more robust global maritime information sharing environment can be constructed. OGMSA support of MSSIS is discussed in greater detail in Section 4.4.2 of this report.



4.4. OGMSA Activities to Achieve MDA

4.4.1. Technology: Data-Sharing and Infrastructure Branch (DS &I)

The Data-Sharing and Infrastructure Branch (DS&I) helps coordinate the development of the technology required to achieve effective MDA. DS&I is responsible for data sharing and collaboration tools as well as administrative oversight of the MDA Enterprise Architecture Management Hub as defined in the MDA CONOPS.

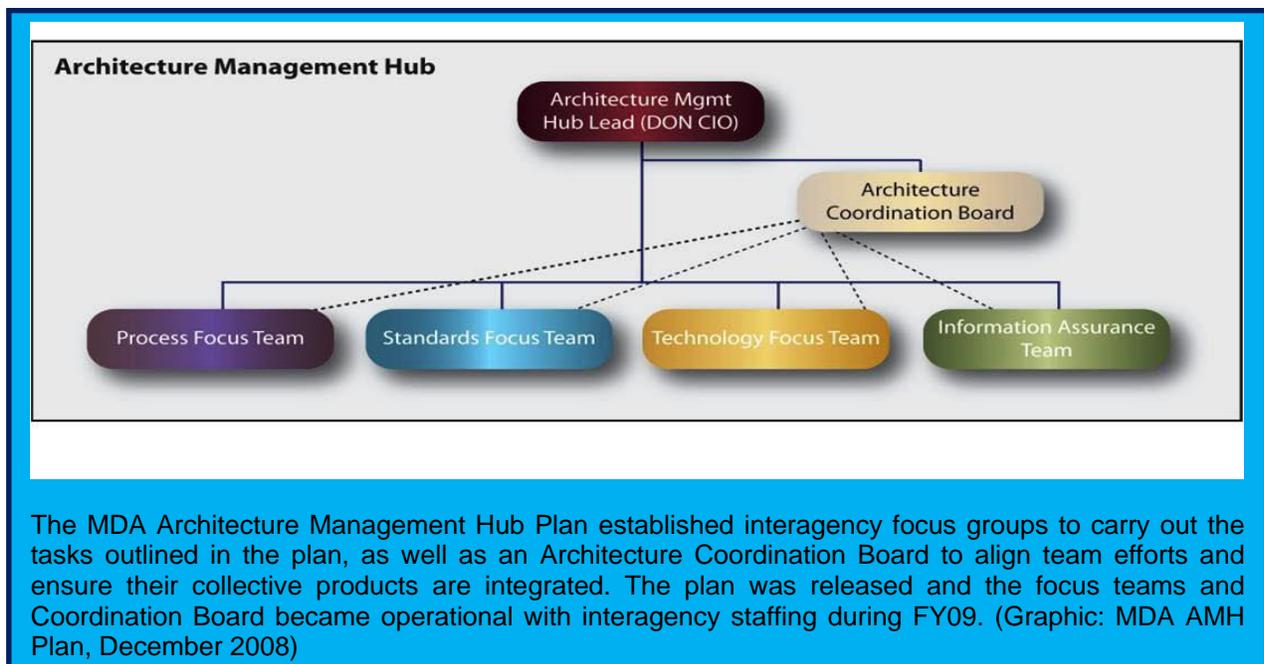
The DS&I Branch made significant progress towards meeting OGMSA's FY09 Objectives. The branch focused particularly on coordinating:

- Development of a national MDA Enterprise Architecture led by the Department of the Navy Chief Information Officer (DON CIO). This effort must synchronize with similar efforts within the Intelligence Community.
- Creation, maintenance, and appropriate dissemination of an inventory/index of all MDA-related projects and research efforts (including those within DOD and the Intelligence Community).
- Increased availability and sharing of maritime persons, cargo, infrastructure, and vessel data.
- OGMSA Project Management coordination of these objectives

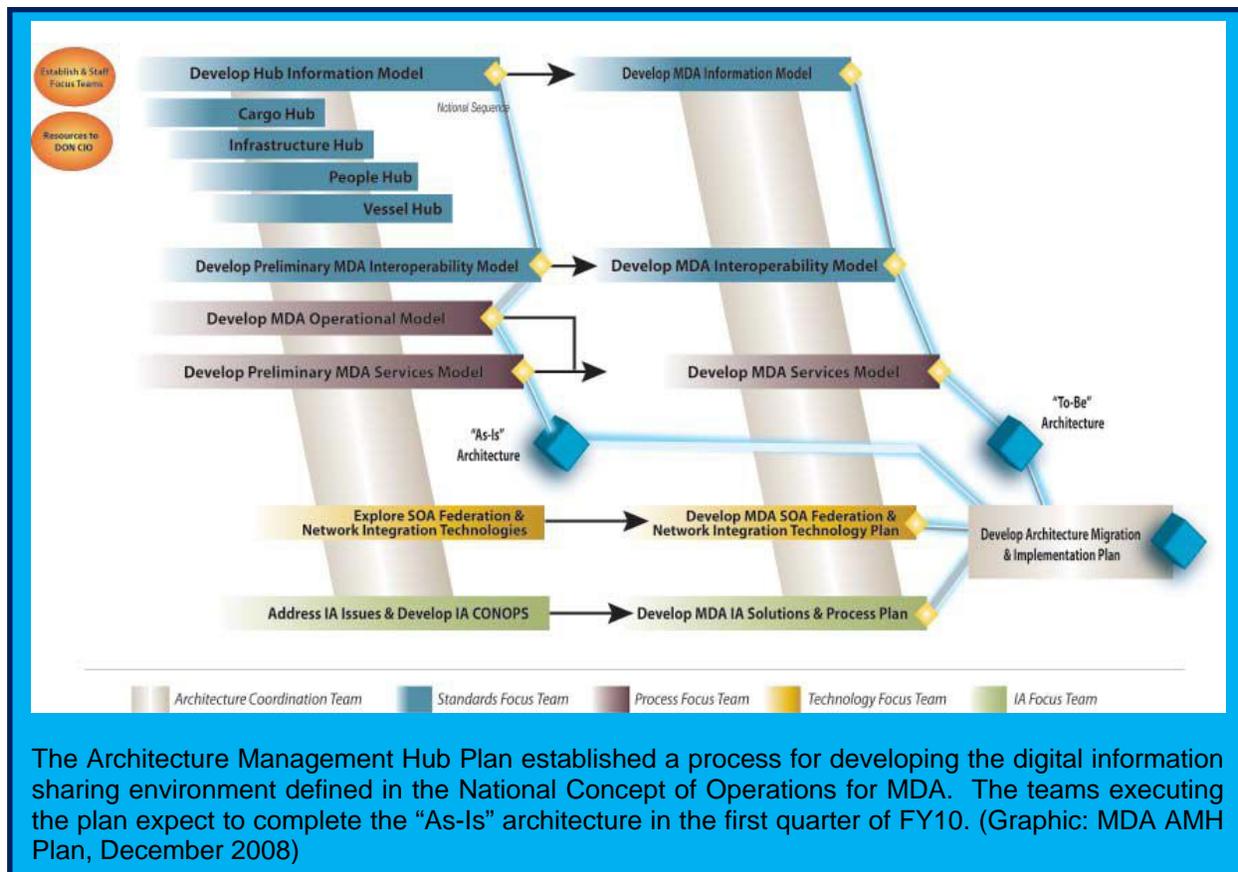
MDA Enterprise Architecture Management Hub

The MDA CONOPS calls for an MDA Enterprise Architecture Management Hub (AMH) to manage the creation of a blueprint for developing a net-centric, information sharing environment, in which data from disparate sources and security domains will be discoverable, accessible, understandable, fused, and usable across the maritime community of interest. The information sharing environment must have appropriate information assurance and enable user defined and common operational pictures. This blueprint will guide departments and agencies in their development of capabilities to enable MDA. OGMSA is responsible for administrative and coordination support of this effort while ensuring compliance with MDA CONOPS' guidance and objectives. The Hub is led by the DON CIO and received strong interagency support during FY09.

The most significant accomplishment in developing the Enterprise Architecture during FY09 occurred in late December 2008 when the AMH Plan received final approval from the MDA



Stakeholders Board and was then distributed to the interagency community. The AMH Charter has since been revised to align the hub membership with the working functions of the AMH, which was dependent upon establishing viable, multi-agency focus teams able to tackle the myriad issues and barriers to information sharing within the U. S. government.



The architecture will be developed in four primary parts. The Operational Model will focus on describing operational nodes and processes to share information; the Information Exchange Model will focus on enumerating and classifying information exchanges; the Services Model will focus on describing and classifying information services; and the Interoperability Model will focus on describing standards for the connection and exchange of information between information services.

Cataloging Emerging MDA Technologies

OGMSA’s Science and Technology (S&T) Advisor was placed under the DS&I Branch during FY09. Technology knowledge capabilities and development are among the priorities established by the NPAMDA and were re-emphasized by the MDA Stakeholders Board ESC in establishing interagency FY09 Objectives. The National Maritime Awareness Technology Subcommittee (NMATS) was established to facilitate the cataloging and the unified development and exploitation of emerging technologies in the areas of sensors and platforms, communication, and information exploitation.

OGMSA's S&T Advisor is coordinating NMATS development of a database of all emerging MDA-related technologies, regardless of which government agency oversees it. NMATS used the Joint Capability Technology Demonstrations (JCTD)³⁴ process to help catalog technologies of interest that support and improve MDA. The JCTD process provided the subcommittee a proven planning process for bringing emerging and mature technologies to operators in the near term.

OGMSA's S&T Advisor, in conjunction with the USCG, also organized and conducted the third global Technical EXchange on AIS via Satellite (TEXAS3) at the Canadian Embassy in Washington DC. TEXAS3 enabled more than 100 representatives from nine nations and the European Union to facilitate cross-industry understanding of space-based MDA initiatives and project milestones. Canada is a global leader in the use of commercial satellites to develop effective MDA. Participants discussed the technical challenges associated with collecting AIS data from space, and shared how space-based AIS empowered many of their other maritime surveillance systems, both terrestrial and space-based. Because AIS data is transmitted on VHF, land or sea-based receivers only have an effective range of approximately 24 nautical miles. Space-based AIS collection provides vessel information from the vast open ocean areas. Many participants in defense, security, natural resources, and environmental protection are examining the utility of these growing capabilities.



TEchnical eXchange on Ais via Satellite
TEXAS 3

UNCLAS- Open to All
August 18-19
Washington, DC

SCI
August 20
NSSO
Chantilly, VA

Contact
Guy Thomas
George.g.thomas@uscg.dhs.gov
202-372-2591

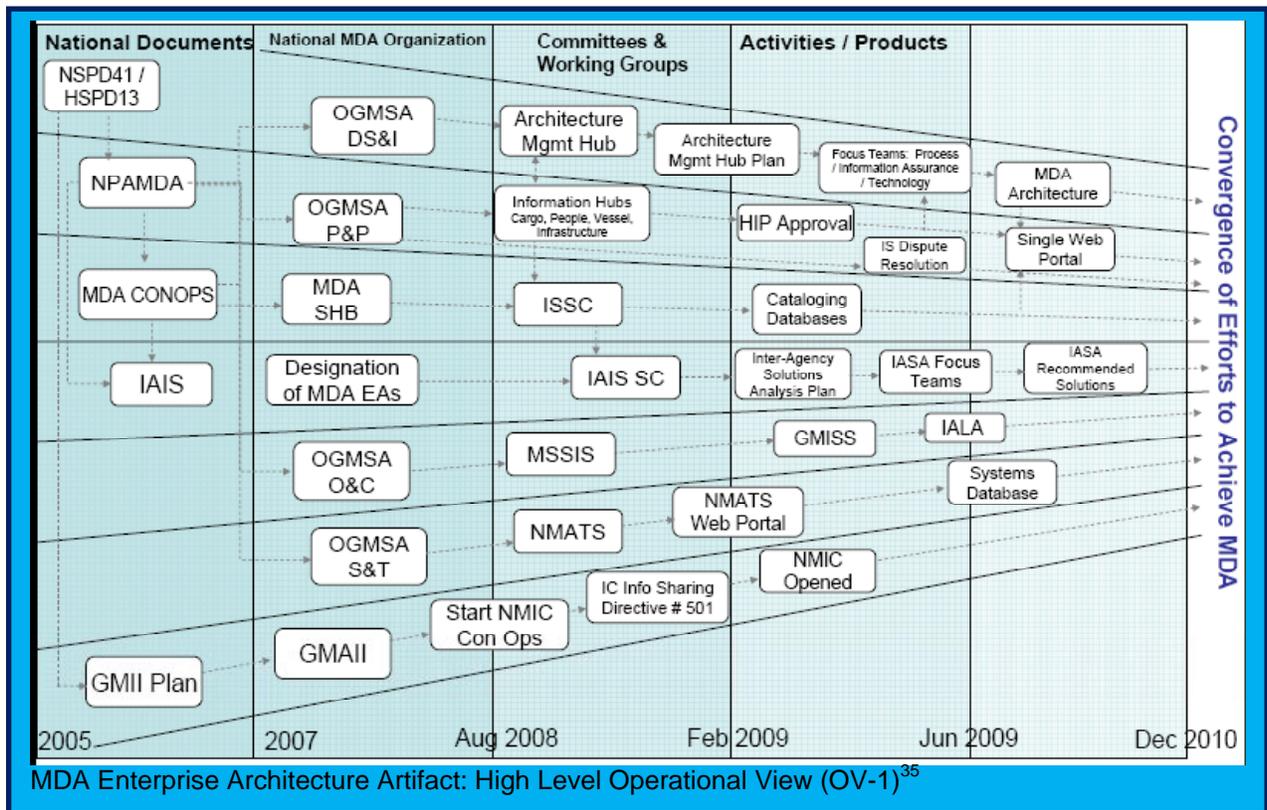
TEXASIII enabled more than 100 technical experts from nine nations and the European Union to exchange information about space-based MDA projects and concepts.

Additional DS&I Initiatives / Accomplishments:

- In accordance with the AMH Plan, established focus teams (Process, Standards, Technology and Information Assurance) and an Architecture Coordination Board. The Coordination Board serves to ensure teams are aligned and their collective products are fully integrated.
 - The focus teams began meeting in February'09 with representation from a broad cross-section of governmental agencies including: OGMSA, GMAIL, DOD, DHS, Navy, and USCG. In accordance with the MDA CONOPS, these efforts are led by the DON CIO.

³⁴ The Department of Defense **Joint Capability Technology Demonstrations (JCTD) Office** exploits mature and maturing technologies and introduces new operational concepts to solve important military problems and facilitates transition of these new capabilities from the developers to the users. The JCTD process focuses on meeting operators' near term joint/coalition/interagency operational needs, with an emphasis on demonstration and transition. It includes a mechanism for coordinating multiple funding sources.

- The Process, Standards and Technology focus teams met regularly throughout most of FY09, and the Information Assurance focus team began meeting August 2009. The first task for the focus teams was the creation of the “As-Is” architecture. The “As-Is” architecture is scheduled for completion during the first quarter of FY10. The “To-Be” architecture is scheduled for completion by the end of FY10.
- The Process Focus Team began developing the Operational Model for the architecture. The team’s objective is to determine existing business processes, document current (cyber) infrastructures and their limitations.
- The Standards Focus Team began developing the Information Model to identify standards and incorporate existing standards or procedures for mediation as necessary into the “To-Be” architecture.
- The Technology Focus Team, as part of information and service modeling, began collaborating with the NMATS to create a database of information collection, fusion / analysis and dissemination technologies in support MDA. A team of network architects were hired under contract to the DON CIO to develop a catalogue of MDA documents. This initiative led to a consolidated document review process and allowed data to be available for input into a file, developing necessary architecture artifacts³⁵.



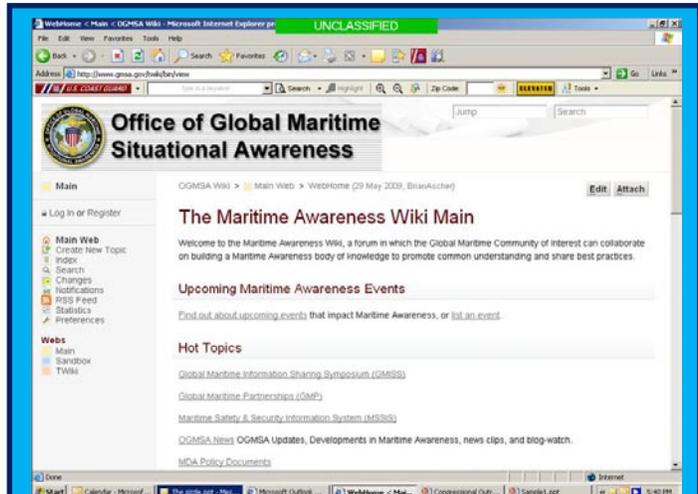
³⁵ Architecture artifacts are documents and models produced by enterprise architects to understand and document the structure of an enterprise.

- Upgraded OGMSA's Wiki application to provide secure (non-classified) document sharing and collaborative capabilities to improve information sharing across the interagency community and the larger maritime community of interest. Among organizations making extensive use of the Wiki were:

- The National MDA Stakeholder Board
- The MDA Stakeholder Board ESC
- The MDA Stakeholder Board Interagency Information Sharing Subcommittee
- The MDA Stakeholder Board Interagency Investment Strategy Subcommittee
- The AMH
- The Vessel Information Hub

- Managed and maintained the OGMSA Web site (gmsa.gov) — an example of a collaborative interagency venture; it is hosted by DOT's MARAD, funded by DHS, licensed under ODNI, and maintained by OGMSA. The website supports the body of work pertaining to implementing national MDA and details the mission and references that guide OGMSA's objectives and actions.

- Drafted the NMATS charter.
- Established an NMATS Wiki within DOD's Techpedia.
- NMATS partnered with DoD's Defense Technical Information Center (DTIC) to begin the technical work required to host the NMATS catalog of emerging MDA technologies.
- Participated in JCTD Reviews and S&T Conferences at NORTHCOM, U.S. Southern Command (SOUTHCOM), U.S. Pacific Command (PACOM), U.S. Central Command (CENTCOM) and U.S. Strategic Command (STRATCOM).



Throughout FY09, OGMSA managed the Maritime Awareness Wiki to provide the global maritime community of interest a platform for collaborating on the development of MDA.

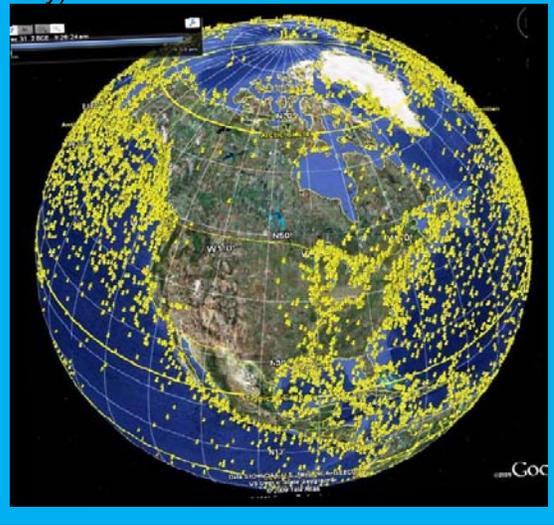
The OGMSA Web site, at gmsa.gov, supported the global maritime community of interest in building the body of work required to achieve global MDA.



- Developed the concept for and aided implementation of the Shipboard AIS and Radar Contact Reporting (SARCR) project for DHS and supported expansion of the program to JCTD. DHS completed a pilot test on one U.S. flagged commercial vessel, with agreements in place to expand to six cargo vessels and a cruise ship. SARCR helps reduce the wide area surveillance capability gap by providing enhanced, 360-degree awareness of maritime activity surrounding SARCR-equipped vessels. SARCR enables AIS tracking outside of port and coastal regions, and increases the probability of detecting vessels that are not transmitting AIS data. SARCR-equipped vessels detect other vessels in their vicinity via AIS signal and onboard radar, compress the data, and transmit the data via iridium to on-shore fusion centers.
- Promoted the concept of a Global Space Partnership to emphasize Collaboration in Space for International Global Maritime Awareness (C-SIGMA), which includes maximizing the use of current commercial satellite technology and automating processing in order to monitor large ocean areas and resurvey areas quickly to accurately detect vessels³⁶. OGMSA briefed the Global Space Partnership concept at:
 - Earth Observation Business Network, Vancouver, BC, Canada May 2008
 - U.S./French bilateral Maritime Security discussions, Paris, France, Sept 2008



The C-SIGMA concept involves maximizing the use of current commercial satellite technology to achieve effective MDA quickly and efficiently. Above: This one-meter resolution image of the oil tanker SIRIUS Star was collected by the 10-year-old IKONOS commercial satellite while the vessel was under the control of pirates about five miles off the coast of Somalia Nov. 20, 2008. (Image courtesy of GEO-EYE) Below: AIS data collected by a commercial satellite launched during FY09 is overlaid on Google Maps. (Image courtesy of SpaceQuest. *(Examples are for illustrative purposes only)*³⁶)



³⁶ The Office of Global Maritime Situational Awareness does not endorse any commercial products, services or companies. OGMSA helps develop the situational awareness aspect of MDA by coordinating efforts among federal, state and local agencies, tribal authorities, other nations, and the maritime industry. One aspect of that mission is identifying capabilities or combinations of capabilities that could improve MDA. OGMSA does not operationalize these findings nor does OGMSA endorse associated products or services.

- First Global MDA Conference, Valparaiso, Chile, December, 2008
- VRMTC-A Technology Workshop, Rio de Janeiro, Brazil, April 2009
- U.S./EU Maritime Security Workshop, Ispra, Italy, April, 2009

4.4.2. Relationships: Outreach & Coordination (O&C) Branch



OGMSA's Lt. Katuska Pabón, US Coast Guard, briefed the Tenth Meeting of the Executive Board of the Inter-American Committee on Ports Subcommittee and Technical Advisory Group on Port Security (TAGPS), Buenos Aires, Argentina, March 23, 2009. She presented OGMSA's strategic approach to developing a global maritime information exchange, and regional and global initiatives such as VRMTC-A and MSSIS. Member states included Argentina, Bahamas, Barbados, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, United States, Uruguay, and Venezuela. (Photo courtesy the Inter-American Committee on Ports)

The Outreach & Coordination Branch focuses on fostering the relationships needed to achieve effective MDA, including interagency, inter-jurisdictional, and international relationships, and those between government and industry. The O&C Branch focused primarily on coordinating OGMSA efforts to achieve the following FY09 Objectives:

- A coherent federal outreach and coordination effort for the maritime industry led by DOT (MARAD).
- Outreach to and coordination with state, local, international civil partners led by DHS (USCG).
- Increased availability and sharing of maritime persons, cargo, vessel,

and infrastructure data.

- OGMSA Project Management coordination of these objectives

Commercial Outreach

OGMSA's most significant outreach effort to the maritime industry was the Global Maritime Information Sharing Symposium (GMISS). GMISS is an annual event hosted by OGMSA to align U.S. Government outreach to the maritime industry and improve and increase industry-government maritime information sharing partnerships. GMISS is undertaken under the concept that it is crucial to solicit input from the maritime industry while developing maritime information sharing policies so policy makers can limit the negative impacts of maritime security efforts on the economy while optimizing the benefits of partnering with the people that maintain

GLOBAL MARITIME INFORMATION SHARING SYMPOSIUM 2009
 SEPTEMBER 15-17
 NATIONAL DEFENSE UNIVERSITY
 FORT LESLEY J. MCNAIR
 WASHINGTON, D.C.

Aligning government outreach to the maritime industry. Bringing the industry perspective into government policy.

Streamlining Information Sharing
 Improving Efficiency, Security, Safety and the Environment

OFFICE OF GLOBAL MARITIME SITUATIONAL AWARENESS
 www.gmsa.gov/gmiss

The Global Maritime Information Sharing Symposium (GMISS) brought together more than 230 representatives from the shipping industry, government, navies and coast guards from 15 nations to improve the ability of governments to work with the maritime industry in achieving effective global MDA.

the greatest visibility of the maritime domain. Therefore, GMISS brings together representatives of the shipping industry, non-governmental organizations, U.S. federal, state and local government agencies, and experts in the field from around the world to collaborate on maritime information sharing solutions.

The long range (multi-year) objectives of the GMISS include:

- Coordinate the U.S. government's maritime commercial outreach
- Implement industry/government working groups to tackle key issues
- Highlight and learn from the most productive relationships
- Promote regional involvement
- Engage a more diverse range of stakeholders

During FY09, GMISS became an official program within MARAD, encompassing the symposium, ongoing working groups, and the Naval Postgraduate School's (NPS) Maritime Information Sharing Taskforce (MIST).



OGMSA hosted GMISS 2009 at the National Defense University, Fort Lesley J. McNair, Washington, D.C. Sept. 15 through 17. Partner organizations included the Maritime Administration, the Coast Guard, Fleet Forces Command, the Department of Justice Office of Community Oriented Policing Services, the Office of Naval Intelligence, the National Maritime Intelligence Center, and the Naval Postgraduate School. (OGMSA photo)

OGMSA hosted the second annual GMISS September 15 through 17, 2009 at the National Defense University on Fort Lesley J. McNair in Washington, D.C. and brought together a diverse mix of more than 230 participants from maritime companies worldwide, U.S. federal state and local agencies, non-governmental agencies, and MDA experts from 15 nations.

Partner agencies included MARAD, USCG, U.S. Navy Fleet Forces Command (USFFC), the DOJ COPS, ODNI, the NMIC, and the NPS. In addition, Marine Log Magazine rolled its 2009 Combating Piracy

conference into GMISS.

OGMSA coordinated every detail of the event, including catering, transportation, lodging, staffing, and facilities thus guaranteeing all attendees the ability to participate to the fullest extent possible in addressing substantive maritime issues during the three day conference. GMISS 09 used WebIQ™, a Web-based collaboration software application, to ensure attendees were able to accurately record their input during every stage of the symposium.



OGMSA used a web-based collaboration application for GMISS 2009 to ensure the more than 230 participants were able to contribute their experience and expertise during the three-day symposium. (OGMSA photo)

More than 40 speakers and panelists helped shape a common understanding of the issues being addressed at GMISS, including:

- Mr. John Porcari, Deputy Secretary, United States Department of Transportation
- Mr. Andrew Shapiro, Assistant Secretary of State for Political-Military Affairs, United States Department of State
- Mr. David Matsuda, Deputy Maritime Administrator (Acting U.S. Maritime Administrator), United States Department of Transportation
- Vice Admiral David Pecoske, Vice Commandant, United States Coast Guard
- Ms. Sandra Webb, Deputy Director, Office of Community Oriented Policing Services, Department of Justice
- Mr. James Christodoulou, Chief Executive Officer, Industrial Shipping Enterprise
- Mr. Moses Calouro, President, Maritime Information Systems, Incorporated
- Mr. Steve Carmel, Senior Vice President, Maritime Services, Maersk Line Limited
- Mr. Giles Noakes, Head of Security Department, Baltic & International Maritime Council
- Mr. William Watson, Board of Governors, Maritime Security Council
- Rear Admiral Ann Gilbride, United States Navy, Director, National Maritime Intelligence Center
- COL Chua Meng Seng, Deputy Commander MSTF, Republic of Singapore Navy
- Rear Admiral Dennis FitzPatrick, U.S. Navy, N3 Joint Operations Director, U.S. Fleet Forces Command, United States Navy
- Mr. Mike Limpantsis, Acting Director Overseas Advisory Council (OSAC), United States Department of State
- Mr. Gordon Van Hook, Senior Director, Innovation and Concept Development, Maersk Line Limited

- Mr. Frank Jaramillo, Director, National Targeting Center (Cargo), Customs & Border Protection, United States Department of Homeland Security
- Mr. Conor Shields, Manager, Maritime Analysis and Operations Center Lisbon
- Mr. Charles Papavizas, Esq. Partner, Winston & Strawn, LLP
- Mr. Joe Milligan, Capabilities Based Planning, DOD MDA EA

Ongoing working groups were established during GMISS 09 to address issues prioritized by attendees during the symposium, surrounding four themes:

- Building a Global Maritime Information Exchange Grid
- Bridging the understanding gap between Maritime industry and Government
- Resolving Information Privacy, Proprietary & Classification Issues
- The Global Response to Piracy as A model of Co-Developed, Mutually Beneficial Policies

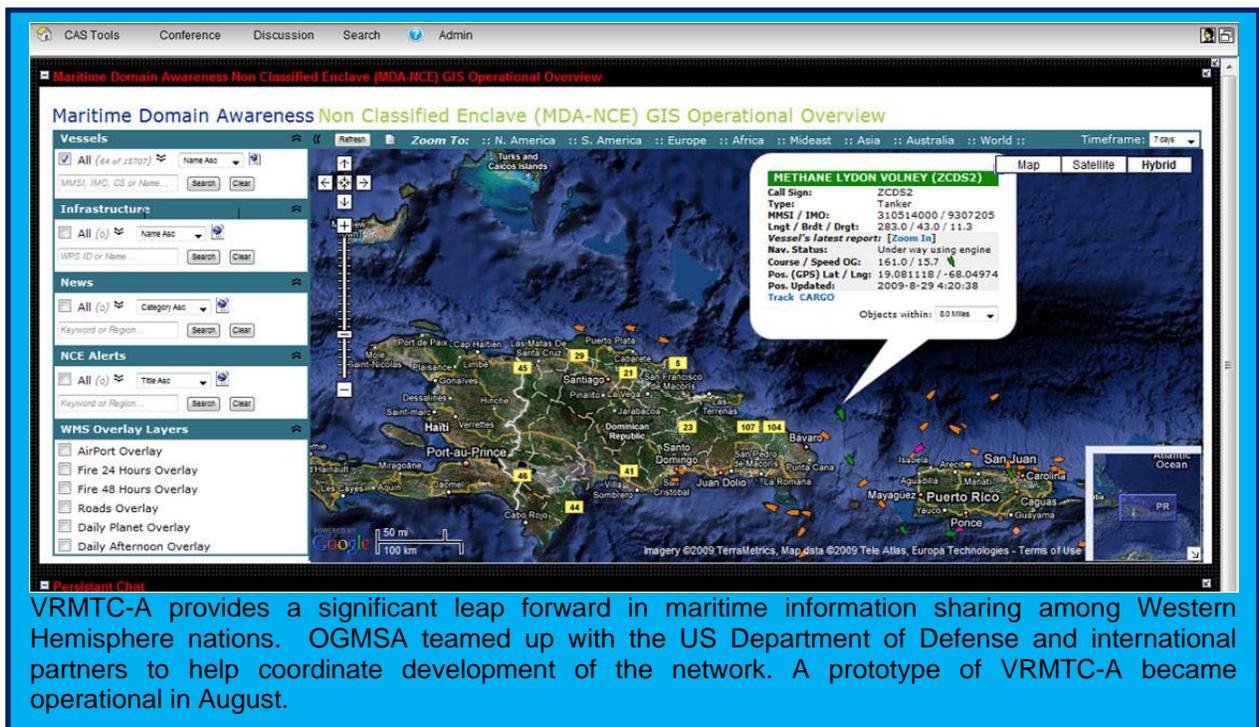


GMISS participants formed four working groups to identify and prioritize key maritime information sharing issues and steps toward resolution. (OGMSA photo)

International Outreach

A wide range of organizations around the world invited OGMSA to conduct international outreach efforts in support of MDA, which OGMSA coordinated closely with the Department of State. In addition, the U.S. Coast Guard invited OGMSA to conduct MDA outreach efforts within certain international maritime bodies at which the USCG is the U.S. delegate. The majority of outreach efforts to the governments of other nations centered on trust-building capabilities such as those available through the promotion of MSSIS as an effective system for sharing vessel data transmitted via AIS transponders on large commercial vessels. As has been discussed above, MSSIS participation presents an effective entry into a global maritime information sharing partnership upon which future initiatives can be built. In support of this effort, OGMSA coordinated with representatives of DOS; DOC; DHS; the Department of Energy (DOE); DOD (including various geographic COCOMS); as well as state, local, and non-governmental agencies. Currently, 62 nations are participating, and another 22 nations are either pending or otherwise constructing the infrastructure to support MSSIS.

In addition, OGMSA is a key partner with the U.S. Office of the Secretary of Defense for Acquisition, Technology and Logistics (OSD-AT&L) and SOUTHCOM in the creation of the Virtual Regional Maritime Traffic Center for the Americas (VRMTC-A), a ground-breaking maritime information exchange created by Western Hemisphere nations. OGMSA contributed personnel with both technical and policy expertise, and spearheaded the socialization of the



VRMTC-A provides a significant leap forward in maritime information sharing among Western Hemisphere nations. OGMSA teamed up with the US Department of Defense and international partners to help coordinate development of the network. A prototype of VRMTC-A became operational in August.

concept among international partners. The effort bore fruit in August 2009 when the first VRMTC-A prototype was demonstrated with 12 international partners contributing.

For international outreach in Asia and Oceania, OGMSA has closely worked in coordination with PACOM, U.S. Pacific Fleet, Joint Interagency Task Force – West (JIATF-W) and USCG District 14 on establishing a uniform approach for achieving maritime domain awareness. With the support of these agencies and commands, OGMSA has laid the groundwork for the development of an effective maritime information exchange in Asia-Pacific and South Asia. In addition, OGMSA was identified as a subject matter expert for maritime domain awareness and non-classified data sharing by maritime stakeholders in the region, prompting OGMSA participation in numerous events and forums to increase maritime information sharing. Currently, OGMSA is in the process of expanding participation in MSSIS to the region, with New Zealand and India agreeing to join, and 12 other countries considering participation. PACOM and the U.S. Pacific Fleet identified MSSIS as an essential tool in establishing effective maritime information sharing, with Commander U.S. PACOM Adm. Robert F. Willard specifically mentioning OGMSA's efforts with MSSIS in a message to the Chief of Naval Operations for the Republic of Philippine Navy. MSSIS is seen by many in the region as the foundation for a greater information exchange network.

OGMSA supported the U.S. DOS in using global MDA initiatives to further international partnerships. The DOS East Asian Bureau identified OGMSA as the subject matter expert on MDA and maritime information sharing. Because of this recognition, the office will lead, at the request of the DOS, the next roundtable and working group discussions on MDA at the Association of South East Asian Nations (ASEAN) Regional Forum (ARF) Maritime Security forum in New Zealand, in the spring of 2010. In addition, OGMSA has developed an on-going relationship and information exchange with the Republic of Singapore with respect to maritime

domain awareness. As a leader in MDA, Singapore is at the forefront of these efforts and views coordination with OGMSA as highly important in this regard.

On behalf of the USCG, OGMSA represented the United States at the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) to promote development of IALA-NET, a worldwide, unclassified, voluntary, web-based, open architecture, maritime data sharing exchange. It combines data from existing AIS data-sharing networks such as the HELCOM agreement between the Baltic States, the NORTHSEA agreement between North Sea States, and MSSIS. Eleven countries are currently participating including China, and 15 additional countries are seeking membership. IALA, a not-for-profit non-governmental organization, played leading role in developing global AIS standards for the International Maritime Organization (IMO). Within the framework of IALA-NET, IALA is developing standards for global maritime data sharing, including AIS.

Federal Interagency Outreach

OGMSA federal interagency outreach efforts developed and strengthened working relationships with offices and agencies across the executive branch in support of initiatives led by other OGMSA branches. In addition, O&C Branch built or expanded relationships with most cabinet-level departments and with the White House in support of maritime information sharing initiatives such as MSSIS, VRMTC-A, and IALA-NET, and commercial outreach programs such as GMISS.

State & Local Outreach

OGMSA participated in MIST outreach efforts in the ports of Puget Sound in the State of Washington. MIST, coordinated by NPS, is funded by DOT and DOD to gather data from a wide range of players within a single port area, and then bring local maritime security practitioners together to discuss information sharing concerns. MIST establishes and shares best practices with ports nationwide, and ensures local and regional concerns and issues are considered in the broader national/international focus of GMISS. For more information, please see Page 12 of Appendix A.

Additional O&C Initiatives / Accomplishments:

- Created or expanded relationships with the U.S. DOD, DOE, and DOS, and the U.S. Office of National Drug Control Policy to discuss maritime information sharing options.
- Upon invitation, presented briefings on global MDA initiatives at the North Atlantic Coast Guard Forum in Iceland, the 7th Annual Maritime Homeland Security Summit in Ponta Verda Beach, FL, and the Maritime Liaison Unit – Latin America Conference sponsored by SOUTHCOM.
- Upon invitation by the Coast Guard, participated in the President’s Oceans Policy Task Force, to inform OGMSA coordination of interagency MDA initiatives in support of national and homeland security.



NAVAL
POSTGRADUATE
SCHOOL



MIST Maritime Information Sharing Taskforce



A Prototype Process

In 2008, the MIST Steering Committee created an exploratory process for facilitating the sharing of threat information between the private maritime industry and government at the local port area. This process began with an event at the Port of Long Beach/Los Angeles that included a local workshop and a social networking web site. Continuing in Seattle in 2009, event activities expanded to include a case-study of local information flow and additional community bridging. Future plans include a mapping of local networks and a mechanism for consolidating national feedback.

MIST works in concert with the Global Maritime Information Sharing Symposium (GMISS) to provide the local/regional perspective to the broader national and international efforts to share maritime domain information between government and private sector maritime operators and policy makers.

OUR FINDINGS:
 THE PUGET SOUND IS DRIVEN BY ECONOMICS AND SAFETY.....
 LOCAL INTERAGENCY COLLABORATION IS STRONG, BUT STOVE-PILING IS A PROBLEM.....
 GOOD COMMUNICATION IS KEY.....
 INFORMATION SHOULD BE EASY TO ACCESS AND OF HIGH QUALITY.....

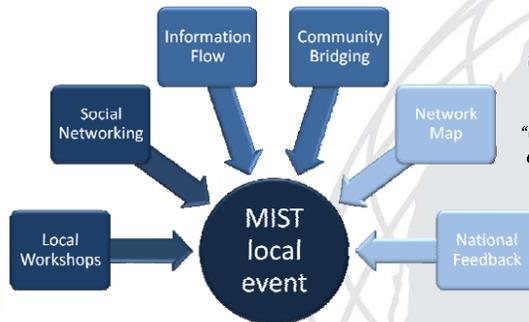
Profile of an FSO
Information needs
 John values personal communication. In his daily work, John interfaces with a lot of people and agencies – management, employees, vendors, labor, port authorities, the USCG, Customs, Harbor Police.

Case Study: Seattle AMSC
 The Seattle sector Area Maritime Security Council (AMSC) serves the ports of the Puget Sound. Its focus is on collaboration, and mission and policy planning.

Value Seattle seen as practice:
 • Bu
 • Fci
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 • Joi

Case Study: Dial "S-E-A"
 Based on our findings in LA/LB, the MIST team selected a proposed GMISS policy implementation for concept testing. The concept was an "at sea" universal dial string (similar to 911) that could be used to report and retrieve MDA information. In evaluating the viability of the concept, participants looked at desirability, requirements, and implementation issues:

Source: *Industry and Public Sector Cooperation: Ports of the Puget Sound*, July 2009



- Collaboration**
"The further away you get from the flag pole of Washington DC, the smoother the flow"
- Communication**
"When we're on the dock if I don't know anything about it, it doesn't do any good"
- Incentives & motivations for sharing**
"First you have to show me that there really is a threat out there— that's why we're spending all this money on it."
- Information quality**
"Give us something to work with. Is it homegrown eco-terrorists or international level cells I need to worry about?"
- Information delivery**
"We need to have some synergy... if you have everyone calling in, what is the infrastructure to direct the information?"
- Streamlining government**
"Choose a system and improve it, rather than improving all ten."

Maritime Information Sharing Taskforce
 Naval Postgraduate School

Wendy Walsh, Project Manager
 831-917-5923
 wdwalsh@nps.edu

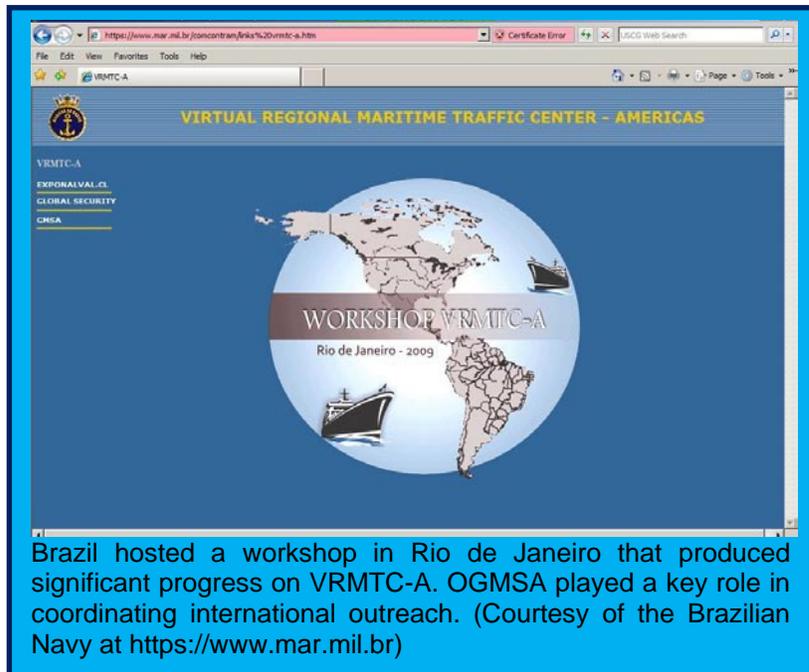
<http://www.gmsa.gov/gmiss/mist.html>

The Maritime Information Sharing Taskforce (MIST) conducted extensive research in the ports of Puget Sound in the state of Washington during FY09. The results are available in a report on OGMSA's Web site at www.gmsa.gov/gmiss/mist/MISTPS09.pdf.

- In support of DOS and DOT, OGMSA provided briefs on MSSIS and other non-classified maritime data sharing initiatives to diplomatic and other government personnel from :
 - Albania
 - Argentina
 - Australia
 - The Bahamas
 - Bangladesh
 - Barbados
 - Brazil
 - Colombia
 - Costa Rica
 - Croatia
 - Ecuador
 - France
 - French Polynesia
 - Gibraltar U.K.
 - Greece
 - Grenada
 - Guatemala
 - Honduras
 - Indonesia
 - Israel
 - Italy
 - Malaysia
 - Malta
 - Montenegro
 - Morocco
 - Paraguay
 - People’s Republic of China (PRC)
 - Portugal
 - Republic of China (ROC, Taiwan)
 - Republic of Korea (ROK, South Korea)
 - Republic of the Philippines
 - Russia
 - Singapore
 - Slovenia
 - Spain
 - St. Lucia
 - St. Kitts and Nevis
 - St. Vincent and the Grenadines
 - Thailand
 - Trinidad and Tobago
 - Tunisia
 - Turkey
 - Vietnam
 - plus non-governmental organizations (APEC, ReCAAP, ARF)

- Conducted continuous diplomatic efforts that led to Chile becoming the first South American nation to join MSSIS. Chile is now a regional leader in the creation of VRMTC-A and has twice hosted working groups to further the project.
- Co-hosted, with the U.S. Office of Naval Research (ONR), the Global MDA Conference and the Global MDA Working group in Valparaiso, Chile in December 2008 in conjunction with EXPONAVAL. The working group developed the successful path ahead in the development of VRMTC-A.
- Opened and sustained a dialogue with the Maritime Authority of Jamaica about maritime information sharing. As a result, Jamaica joined MSSIS and VRMTC-A, and is a leader and advocate for maritime information sharing in the Caribbean.
- Wrote recommendations and guidelines for the open maritime information sharing of data on IALA-NET, and represented the U.S. as one of seven nations on the IALA-NET steering committee, guiding development of a web-based, open architecture, maritime data sharing exchange.
- Concluded 18 months of MDA-focused diplomacy with Sweden, which is already a participant in HELCOM, to successfully incorporate Sweden into a global maritime information sharing network via MSSIS.
- Concluded extensive outreach efforts to New Zealand, resulting in the nation joining MSSIS.

- Built a relationship with Peru which led the nation to share maritime information through MSSIS. Through discussions brokered by OGMSA, Peru is also exploring sharing oceanographic information with NOAA.
- Coordinated efforts to achieve full participation in MSSIS by India, with transmission pending resolution of technology issues. OGMSA worked with the Indian Navy and the Volpe Center to resolve the challenges associated with linking MSSIS and India's existing MSIS vessel traffic system.



- Provided guidance to Japan Coast Guard on the functions and benefits of MSSIS, resulting in their trial participation.
- Upon the request of U.S. Pacific Fleet (PACFLT) N2, provided a briefing on MSSIS and non-classified data sharing at a PACFLT/Republic of Philippine Navy Subject Matter Expert Exchange.
- Led efforts on behalf of U.S. PACOM, U.S. PACFLT, and the U.S. Coast Guard Activities Far East to bring AIS receivers to Timor-Leste and gain their participation in MSSIS. Arranged for technical support from other participating nations which will result in Timor-Leste's full participation in MSSIS during FY10.
- Briefed U.S. DOS Desk Officer for Algeria and Cypress about MSSIS and facilitated discussion with the Algerian Embassy about Algerian maritime challenges included migration.
- At the request of the U.S. DOS and the USCG Director of International Affairs and Foreign Policy, helped facilitate joint-interagency engagement to Libya to address maritime challenges including illegal fishing and illegal migration. Assisted Libya in their quest to enhance their integration into the global effort to manage the maritime commons.
- At the Request of U.S. Central Command (CENTCOM), formally presented MSSIS and other MDA initiatives to Egypt, Lebanon, Jordan, Oman, and Yemen.
- Researched feasibility and proposed installation of AIS



The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) played a key role in developing AIS standards on behalf of the IMO. Through IALA-NET, IALA is developing standards for the sharing of AIS data.

receivers in Caribbean nations which were added to Department of State's Caribbean Basin Security Initiative (CBSI) proposal submitted to Congress.

- Partnered with the Organization of American States (OAS) Inter-American Committee Against Terrorism (CICTE), Transport Canada, and the U.S. Coast Guard to lead quarterly Port Security Best Practices workshops in the Caribbean.
- In support of MARAD, partnered with the OAS Inter-American Committee on Ports (CIP) and briefed committee members at their bi-annual meeting in Buenos Aires.
- Identified by the USCG International Port Security (IPS) Office as a subject matter expert on interagency and international MDA and non-classified data sharing. OGMSA provided a subject matter expert briefing to all International Port Liaison Officers during IPS Training Conference.
- Prepared information papers on best practices of interagency information sharing for USCG Headquarters staff.
- Coordinated closely with USCG International Affairs Office to supplement international outreach.
- Attended several USCG workshops and conferences as the Subject Matter Expert on MSSIS.
- Wrote talking points for the Commandant of the Coast Guard and other senior USCG leadership for maritime-information sharing dialogues with their Latin American and Asia-Pacific government and military counterparts; for U.S. Navy flag officers for use in domestic briefings and international outreach efforts in support of MDA; and for key MARAD officials for use in international outreach efforts in support of MDA.
- Briefed Quad Defense Talks (Australia, France, New Zealand, and United States) on maritime domain awareness and non-classified data sharing, and its uses in Oceania.



A staff member alerts IFC Head MAJ Nicholas Lim (second from left) to a potential situation in the Malacca Strait at Singapore's new Information Fusion Centre (IFC). The IFC stood up on April 27 and hosted its first Maritime Information Sharing Exercise (MARISX) May 11-15 with OGMSA participation. Singapore is a global leader in MDA. (Photo by Chua Soon Lye, Cyberpioneer, courtesy of the Ministry of Defense Singapore)

- Participated in the first annual Maritime Information Sharing Exercise (MARISX) at the Information Fusion Centre (IFC), Singapore on May 11-15, 2009. OGMSA participated with U.S. Coast Guard Activities Far East (USCG FEACT), Naval Criminal Investigative Service (NCIS), and the U.S. Navy's Commander Logistics Group Western Pacific. The exercise included international representation from over 19 countries. MARISX established a strong working relationship between OGMSA and MDA Stakeholders in the Republic of Singapore Navy, USCG FEACT and NCIS for outreach and coordination in Asia-Pacific.

- Was identified as a key MDA

subject matter expert by the Asia-Pacific Economic Cooperation (APEC) on maritime

information sharing. Participated in the 32nd APEC Transportation Working Group meetings in Singapore in this capacity. OGMSA provided briefings to the maritime security experts group during this conference.

- Briefed the South Asia and Africa Port Security Cooperative (SAARPSCO) in Mauritius on MDA and non-classified data sharing at the request of USCG FEACT.
- Maintained relations with DOS & DOD desk officers for Bulgaria, Georgia, Romania, Ukraine, Turkey, Russian to facilitate wider maritime information sharing.
- Visited the Project Seahawk center in Charleston, SC to map and identify lessons learned by Interagency Operations Center.
- Met with the USCG office responsible for implementing the DHS Interagency Operations Centers (IOC) program. Identified synergies with OGMSA and laid the foundation for continued collaboration.
- Visited Joint Harbor Operation Centers (JHOC), to identify the centers' operations, relationships, concerns, and technology.
- Visited Virginia & Maryland State fusion centers to gain greater awareness of information sharing by specific fusion centers, and identify best practices and challenges between federal, state and local authorities. Comparing these results to best practices and challenges encountered by maritime information sharing and fusion centers overseas.
- Met with the Maryland Department of Natural Resources to discuss AIS and Radar data sharing. They currently receive data from the Patuxent River Naval Air Station and would like to share and receive maritime information to further increase their MDA for state and local law enforcement. Developed a prototype of information sharing across local, state, federal, international and commercial levels. Maryland and Virginia surround the Chesapeake Bay, the largest estuary in the United States.

All of the above reflect the time and effort necessary to build trust and have resulted in additional information to support U.S. national security objectives.

4.4.3. Policy: Plans & Policy (P&P) Branch

The purpose of the Plans and Policy Branch (P&P) is to develop and positively influence interagency policy, establish effective information sharing barrier resolution procedures, and promote information sharing best practices towards successfully achieving MDA. In defining MDA requirements and objectives, P&P Branch maintains close reference to the national objectives and tasks defined by NPAMDA, MDA CONOPS, and the IAIS.

The P&P Branch focused primarily on coordinating OGMSA efforts to achieve the following FY09 Objectives:

- Increased availability and sharing of maritime persons, cargo, infrastructure, and vessel data.
- OGMSA Project Management coordination of these objectives

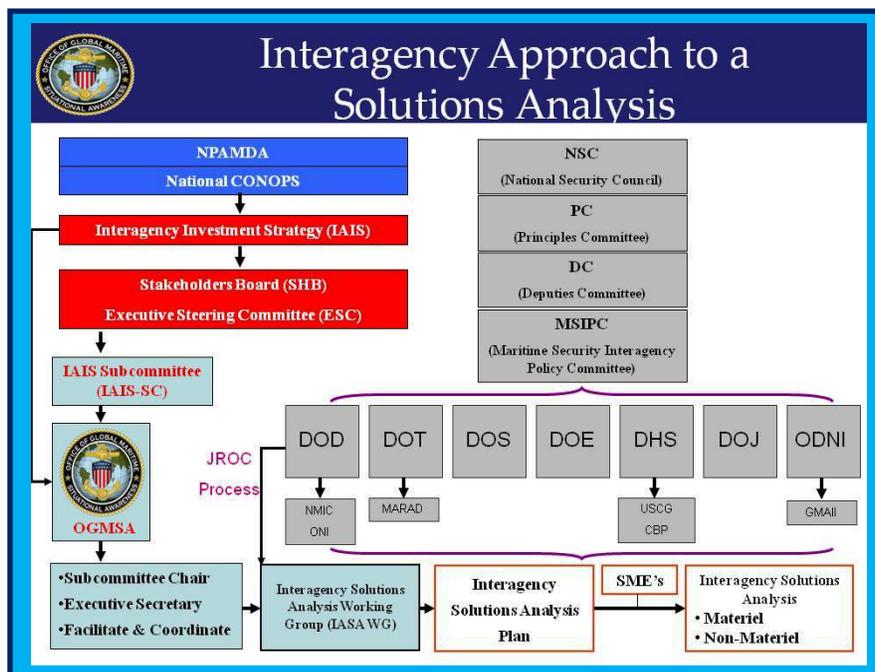
P&P Branch's primary avenue for policy development and influence is leading or participating in interagency committees and working groups, such as the Maritime Security Working Group

(MSWG), the Information Sharing Working Group (ISWG), the Information Sharing Subcommittee (ISSC) and Interagency Investment Strategy Sub-Committee (IAIS-SC) of the MDA Stakeholders Board, and the Interagency Solutions Analysis Working Group (IASA-WG).

Closing IAIS Critical Gaps

FY09 saw significant progress toward implementing the U.S. IAIS. The IAIS was a product of the MDA Implementation Team established by the NPAMDA. In developing the IAIS, the Implementation Team identified 74 MDA capability gaps, assessed them, and designated 15 for Tier 1 status, meaning either they were the most severe, or an investment would provide significant improvement in the U.S. ability to achieve MDA. The IAIS identifies 15 critical tasks to address these gaps. Included in each task are recommendations for action, designated primary and secondary stakeholders, and deadlines (*please see Appendix C*).

Since publication of the IAIS in May 2007, several stakeholders have undertaken action to complete these tasks. Many of the efforts are noted in the OGMSA FY08 Annual Report and in Appendix A of this report. However, to complete the tasks and to avoid duplication of effort among stakeholders, the interagency community needed a collaborative process to identify where the initiatives of individual agencies leave gaps within the needs of the entire interagency community, to identify what is required to fill those gaps, to apportion responsibilities for closing these gaps, and to provide analysis of and concrete justification for resources to be applied to these solutions.



During FY09, the IAIS-SC of the MDA Stakeholders Board addressed this deficiency by establishing the IASA-WG. Initiated and led by the DOD MDA EA, the IASA-WG built on a successful Capabilities Based Assessment (CBA) completed by the Navy in FY09. On behalf of the IASA-WG, the IAIS-SC initiated an outreach program to socialize the concept of an MDA IASA Execution Plan among the 13 IAIS stakeholder agencies, resulting in broad acceptance and support.

This outreach effort resulted in CBP and of the Office of Naval Intelligence (ONI) improving cargo and vessel information sharing before the MDA IASA plan was even completed.

With the support of the interagency community, the IASA-WG developed MDA IASA Execution Plan. The plan incorporated the DOD JCIDs process to plan resource requirements

for solutions. The IAIS-SC agreed upon the JCIDS process for this interagency plan because it is the most rigorous in the U.S. federal government and would meet the planning needs of every stakeholder agency.

The DOD MDA EA presented the plan to the DOD Joint Capabilities Board in August and to the DOD Joint Requirements Oversight Council in September and obtained support for the plan from DOD's senior leadership for resource allocation. The plan was subsequently approved by the MDA Stakeholders Board.

MDA Enterprise Hubs

A key concept of the MDA CONOPS, the IAIS companion document, is delegating coordination of various types of MDA data to the agencies with expertise in each type of data. These agencies facilitate the development of an information sharing network by forming Enterprise Hubs. Each hub is a community of interest in the maritime domain led by a U.S. federal agency, focusing on the coordination and facilitation of maritime information sharing within a specific subject area. Per the MDA CONOPS, the Hubs are administered by OGMSA, which primarily includes ensuring initiatives are aligned and coordinated among the hubs and eliminating redundant efforts.



Coast Guard Commandant Adm. Thad Allen, Director of National Intelligence John "Mike" McConnell, and Chief of Naval Operations Adm. Gary Roughead cut the ribbon opening the National Maritime Intelligence Center (NMIC) in Suitland, Maryland Jan. 14, 2009 with the help of a Coast Guardsman and a Sailor. The launch of the NMIC opened the door for the stand up of the Vessel Enterprise Hub in support of the National Concept of Operations for MDA. (Photo courtesy of NMIC)

The MDA CONOPS identifies four initial hubs to coordinate the most basic types of information needed for MDA: information about Cargo, People, Vessels, and the Infrastructure in the maritime domain. The Cargo, People, and Infrastructure Information Hubs stood up during FY08 as documented in the OGMSA FY08 Annual Report. However, there is some degree of overlap in activities and responsibilities described in the MDA CONOPS for the Vessel Information Hub and in the Global Maritime Intelligence Integration (GMII) Plan³⁷ for the Core Element. According to the GMII Plan, the Core Element leverages the existing civil maritime intelligence portions of ONI and the USCG Intelligence

³⁷ *The Global Maritime Intelligence Integration Plan (GMII)*, published in Oct. 2005, is one of the eight plans supporting the *National Strategy for Maritime Security (NSMS)*, as is the *National Plan to Achieve MDA (NPAMDA)* which the MDA CONOPS supports.

Coordination Center (ICC) to work with other key stakeholders to create a center that, among other tasks, manages and coordinates Maritime Domain-specific information access and integration³⁸. Per the MDA CONOPS, the Vessel Information Hub, led by ONI and USCG ICC, working with other stakeholder agencies, is responsible for the overall coordination of information flow for its respective subject area both domestically and internationally, and facilitating the sharing of related intelligence, information, and data³⁹. Therefore, the formal launch of the Vessel Hub was delayed until the completion of the NMIC in January 2009, which carries out the responsibilities of the Core Element identified in the GMII Plan.

The Vessel Hub began operation in January with the NMIC, ONI, and ICC sharing responsibilities as lead agencies. The Hub Leads identified key stakeholders and immediately began working with stakeholders to identify their needs and their capabilities. A robust Vessel Hub Charter followed and was approved by the MDA Stakeholders Board, along with a Vessel Hub Plan. The Vessel Hub Plan took a different course than the three existing hubs, aligning its operations with the four focus teams outlined in the MDA AMH Plan (*please see Section 4.5.1 of this report*) in order to better support the development of the digital information sharing network outlined in the MDA CONOPS.

Following the approval of the Vessel Hub Charter by the MDA Stakeholders board, the DHS MDA EA⁴⁰, working with OGMSA and the Hub Leads, spearheaded an effort to revise the 2008 Hub Implementation Plan to better coordinate hub activities and to reflect an evolution in understanding of Hub operations. The MDA Stakeholders Board approved the revised Hub Implementation Plan in April.

Transforming Interagency Information Sharing Workshops

During FY09, OGMSA launched a series of workshops in which the federal agencies that manage America's



Mr. Michael Resnick, Senior Director, Information Sharing Policy, Executive Office of the President (center) leads a panel discussion at the OGMSA's second Transforming Interagency Information Sharing Workshop Sept. 9. Joining Mr. Resnick on the panel were Capt. Rafael Nieves, USN, of OGMSA and Mr. Curtis Dubay of the Office of the DHS MDA Executive Agent. (US Coast Guard photo by Petty Officer Luke Pinneo)

³⁸ *GMII Plan*, Oct. 05

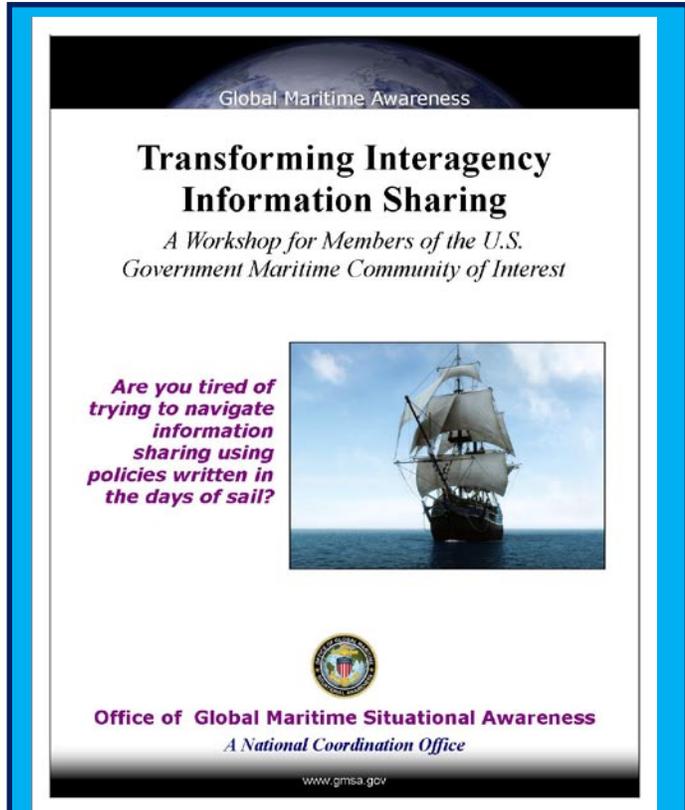
³⁹ *MDA CONOPS*, Aug. 2007

⁴⁰ DHS agencies are the leads for the Cargo, People, and Infrastructure Hubs, and co-lead for the Vessel Hub.

maritime affairs collaborated on advocating and adopting a formal interagency policy on information sharing, and establishing a standardized procedure to resolve information sharing disputes. The first Transforming Interagency Information Sharing Workshop in June at USCG Headquarters brought together approximately sixty participants from the seventeen federal agencies. The Director, State and Local Program Office, DHS Office of Intelligence and Analysis, Mr. Robert Riegel, offered the keynote address. The workshop addressed three specific questions:

- Does a mandate for interagency information sharing exist?
- What barriers prevent information sharing?
- What potential solutions can overcome these barriers?

The participants clearly indicated they are ready to share information; want to resolve disputes and eliminate barriers; seek concise, single source guidance; request support from senior leadership; and desire to transform the interagency culture to foster and institutionalize information sharing for the benefit and protection of the American public, its safety, economy and interrelationship with its government. Workshop attendees from all four working groups uniformly affirmed that there currently exists a federal mandate requiring inter-agency information sharing. The most common policy barriers identified were the Privacy Act, prevailing understanding of Personally Identifiable Information, national security concerns, document classification and the culture of information protectionism. However, participants concluded that the most frequent barriers were attributed to supervisors' ad hoc decisions. Participants also



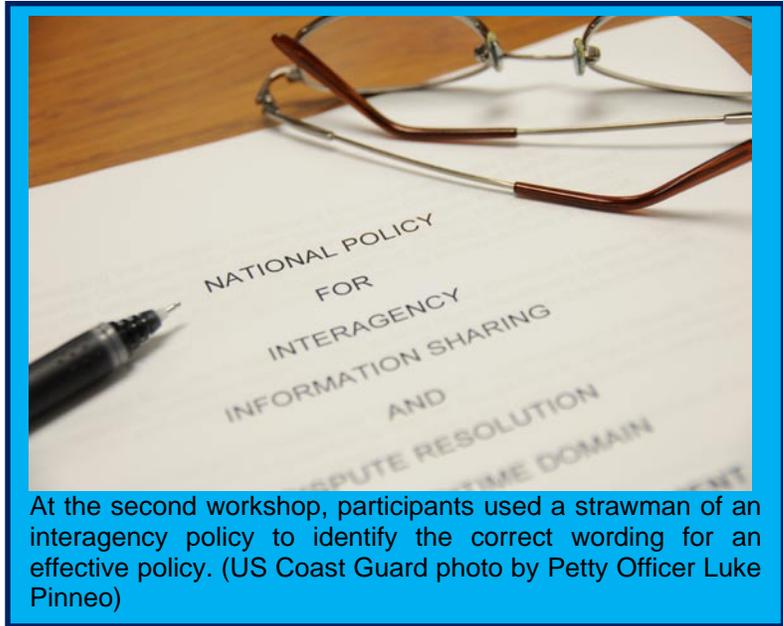
OGMSA's Transforming Inter-agency Information Sharing Workshops coordinate the efforts of federal maritime stakeholders to overcome policy barriers that unduly limit sharing of maritime information.



Workshop participants collaborated in working groups to identify common barriers and appropriate solutions. (US Coast Guard photo by Petty Officer Luke Pinneo)

provided a range of insightful recommendations, but agreed almost uniformly that successful transformation must include accountability for information sharing, by, between, and among agencies.

OGMSA held the second workshop Sept. 9 at USCG Headquarters. Mr. Michael Resnick, Senior Director, Information Sharing Policy, Executive Office of the President led a panel discussion with experts from OGMSA and the DHS Office of the Executive Agent for MDA. Building on the work of the June



At the second workshop, participants used a strawman of an interagency policy to identify the correct wording for an effective policy. (US Coast Guard photo by Petty Officer Luke Pinneo)

workshop, 48 attendees examined what form an interagency information sharing policy should take, recommended language for such a policy, and examined likely paths to success in gaining approval for such a policy. The workshop resulted in major advances in the development of an interagency information sharing and conflict resolution policy and procedures, and deliverables will be refined at the upcoming workshop in December 2009.

Additional P&P Initiatives / Accomplishments:

- Coordinated interagency progress toward a preliminary charter for MSSIS International Governance Board.
- As co-chair and Executive Secretariat for the ISSC and Hub Administrator:
 - Oversaw Hub Lead collaboration to create an Integrated Plan of Action and Milestones that coordinates Hub efforts with those of the MDA Enterprise Architecture Management Hub to develop a net-centric maritime information sharing environment.
 - Tested and implemented a data-cataloging portal through the DOD MDA EA that will provide the foundation for a unified effort to meet the Hub's responsibilities under the MDA CONOPS to inventory and catalog the databases and information sources that contribute to achieving MDA while eliminating redundant data calls.
 - Initiated development of a single web portal to the entire catalog of sources of MDA data in the GMCOI to enable all participants to locate and contact sources of maritime information.
 - Planned, coordinated and moderated a Hub Summit in September to address issues surrounding information sharing agreements with industry, development of the Single Web Portal, and interagency data cataloging. Participants included representatives from ONI, DON CIO, CBP, DHS Office of Infrastructure Protection (OIP), NMIC, DOD MDA EA, DHS MDA EA, and OGMSA

- Initiated development of an Oceans Information Hub to begin coordination of categories of data not addressed by existing hubs in support of the U.S. President's Oceans Policy Task Force.
- Began initial feasibility study regarding a Financial Information Hub in accordance with the MDA CONOPS.
- As chair and Executive Secretariat for the IAIS–SC re-engaged and renewed involvement of essential representatives from offices and agencies within DOC, DOE, DHS, DOJ, and DOS in support of the IASA-WG.
- As member of the MSIPC and MSWG:
 - Developed a process and spreadsheet catalog tool to support the National Security Staff's efforts to prioritize efforts in support of the NSMS.
 - Managed collection and compilation of interagency input on actions taken to address the tasks identified in Appendix B of the NPAMDA.
- Developed a Progress Assessment Tool (PAT) to track completion of OGMSA's FY09 objectives, sub-objectives, tasks, and sub-tasks. The PAT allowed OGMSA leadership and the MDA Stakeholders Board to monitor completion of the most pressing MDA objectives of the U.S. federal interagency community as identified by the Stakeholders Board's ESC in October 2008.



In a working group at OGMSA's 2009 Global Maritime Information Sharing Symposium (GMISS), members of the maritime industry learned about the US government's Interagency Solutions Analysis (IASA) Plan for MDA investment and were able to provide a unique perspective on interagency challenges regarding allocating resources across projects that require the support of many departments. The synergy between OGMSA initiatives contributed significantly to success in FY09. (OGMSA photo)

5. Conclusion

Fiscal Year 2009 saw positive progress for MDA, both for the United States and globally. Much of the prior MDA effort was focused on planning, and putting the initial pieces in place. During FY09, the GMCOI made significant progress in actually developing awareness of the maritime domain. In the United States, the federal MDA governance process matured and worked through the challenges associated with coordinating a collaborative effort of which no one is “in charge.” In February 2009, President Obama reaffirmed that governance process, keeping in place the interagency committee for coordinating Maritime Security policy even as he realigned the National Security Council and Homeland Security Council to execute the vision of his administration.

Vessel traffic in the open oceans became more transparent during FY09 when the Long Range Identification and Tracking (LRIT) system became operational. LRIT is a designated IMO system designed to collect and disseminate vessel position information received from IMO member states ships that are subject to the International Convention for the Safety of Life at Sea (SOLAS)⁴¹. LRIT now provides global tracking of a nation’s flagged vessels and also long range tracking of all vessels within 1000nm of a nation’s coast, something not currently possible through shore-based AIS. In addition, the USCG purchased AIS data collected by a commercial satellite during FY09, demonstrating the feasibility of using a commercial satellites for tracking vessels in the open oceans beyond the reach of shore-based AIS receivers. Other potential vendors have entered the market and begun to explore this technology. The Coast Guard and Navy conducted a joint evaluation of the data from the Coast Guard concept demonstration satellite and are planning to conduct a joint evaluation of data from other vendors to ascertain the potential of this technology to support non-classified AIS information sharing and improve AIS coverage.

During FY09, the U.S. maritime community of interest significantly improved its ability to share data with the rest of the government. Prior to FY09, maritime data sharing systems were developed using the Maritime Information Exchange Model (MIEM), which was not entirely compatible with the National Information Exchange Model (NIEM) used by other departments and agencies in the federal government. During FY09, the MIEM was fully integrated into NIEM version 2.1. This enables the reuse of data across the full range of government agencies, and allows the maritime community to leverage the tools, training and governance provided by the NIEM.

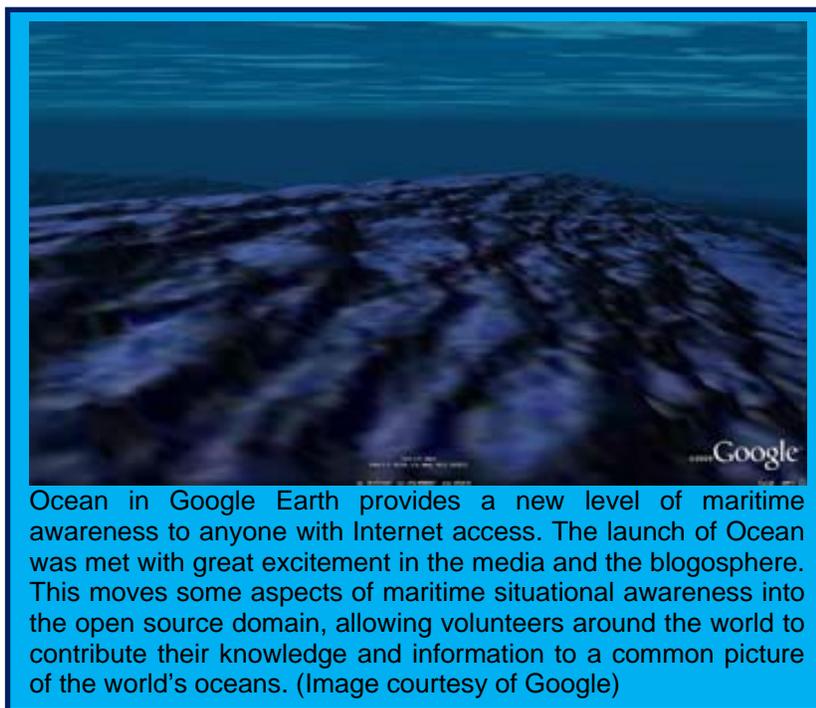
The DHS and NORTHCOM took a major step forward developing a Common Intelligence Picture in FY09 with the creation of the NMIC, an integrated interagency entity that generates the national maritime Common Intelligence Picture to be used by DHS and NORTHCOM components for situational awareness and, where necessary, orchestrating a response to developing events.

⁴¹ US Coast Guard Navigation Center, *Long Range Identification and Tracking (LRIT) Overview*, <http://www.navcen.uscg.gov/lrit/> accessed Sep. 28, 2009.

Access to the U.S. maritime transportation system became better controlled during this reporting period. Transportation Worker Identification Credential (TWIC) cards were issued in ports across the nation. The TWIC is a bio-metric-based identification credential, mandated by the Maritime Transportation and Security Act (MTSA), which helps identify workers who have been properly cleared and prevents individuals who pose a potential security threat from having unescorted access to secure areas of the marine transportation system.

In Singapore, the IFC became operational in April, improving maritime awareness in the critical Strait of Malacca. The European Union is proposing an integrated maritime surveillance system as part of an Integrated Maritime Policy for the EU. China is eager to expand its contributions to the global maritime information sharing community and has become a member of the IALA-Net Steering Committee developing a network of AIS sharing networks under IALA. India realigned its maritime domain awareness governance structure to improve maritime information sharing within weeks of the terrorist attack on Mumbai in November 2008. Throughout Africa, nations are aggressively developing the maritime awareness needed to protect their exclusive economic zones from illegal fishing, piracy, and other illicit activities.

Even the civilian private sector outside the shipping industry became excited by the ability to contribute to and benefit from global maritime awareness during FY09. In February, Google launched Ocean in Google Earth, also known as Google Ocean. This addition to Google Earth and Google Maps enables anyone with Internet access to explore the sea floor with ease. Users can also add data to the display, creating a rich information sharing environment. This moves MDA into the open-source domain and begins to bring



to certain non-classified elements of global maritime situational awareness the benefits of mass collaboration, with thousands of volunteers contributing their own knowledge and information to a common picture of the world's oceans.

All of these developments, and literally hundreds more around the globe, set the stage for an even greater explosion of MDA achievements in Fiscal Year 2010. Because it is not bound to any single federal department, OGMSA is nimble enough to work impartially across the whole of the GMCOI and stay on the crest of this growing wave of innovation. Therefore, despite its small staff, no budget, and lack of enforcement authority, OGMSA is clearly delivering

tremendous value to the U.S. Government as well as the global community. It is OGMSA's plan going forward to build on the successes of FY09 and expand its role in promoting, facilitating, and coordinating global MDA even more effectively in FY10.

Appendices

- A:** Significant MDA Activities across the Federal Government – FY'09
- B:** OGMSA Objectives and Progress Assessment Tool Dashboard for September
- C:** Interagency Investment Strategy (IAIS) 15 Critical Tasks
- D:** Acronyms

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APPENDIX A

Significant MDA Activities across the Federal Government, Fiscal Year 2009

The following report of significant MDA activities is based on inputs from U.S. federal MDA stakeholders in response to a data call conducted by OGMSA in July and August of 2009 on behalf of the Maritime Security Interagency Policy Committee (MSIPC) of the National Security Council (NSC). It is believed that additional significant activities were conducted but were not reported to OGMSA, and therefore this listing is not intended to be construed as an all-inclusive accounting of federal MDA progress.

For reference of Interagency Investment Strategy (IAIS) Critical Tasks, please see Appendix C.

Department of Commerce (DOC)

National Oceanic and Atmospheric Agency (NOAA)

AIS on Weather Buoys

- **With whom output/benefit is shared:** U.S. Coast Guard (DHS)
- **Description:** This was a demo-project with the U.S. Coast Guard to partner with NOAA and make use of the extended horizon view of offshore weather buoys and situational awareness of vessel traffic. As part two of the demo project there are four AIS receivers, three have been deployed on active buoys off Virginia Beach, the Gulf of Alaska, and 200 nm south of the Aleutian Islands. The 4th AIS receiver is under repair.

The USCG extended the operation and maintenance for these 3 NAIS-buoys for another year through October 2010.

Future: The USCG is considering implementation on all, or a significant portion of all deployed NOAA buoys.

Department of Defense (DOD)

DOD Executive Agent for Maritime Domain Awareness (DOD MDA EA)

Establishment of DOD Executive Agent for MDA

- **IAIS Tasks Addressed:** 1,3, 4, 5, 10
- **Partners:** All of DOD & U.S. Government
- **With whom output/benefit is shared:** All of DOD & U.S. Government
- **Description:** DOD EA for MDA oversees the execution of MDA initiatives within DoD and coordinates on MDA policy with the Under Secretary of Defense for Policy while ensuring continuous global and sustainable support for DOD MDA implementation, and establishes liaison with interagency partners to support policy initiatives and resource requirements. This office responds to a critical need for an effective, integrated whole of government, intelligence-to-warning-to-action approach that provides non-redundant, cost-effective unity across numerous DOD and Service organizations and activities and will help ensure coordination among the multiple federal agencies responsible for the security of the maritime domain.

Forward leaning examples that support all DOD Combatant Commanders and other DoD Components and which link to other USG departments and agencies include:

- OSD Staff and the Joint Staff – collect, compile, and assess the first set of Annual MDA Plans submitted by COCOMs and other DOD components.
- DOD's Federal interagency partners – conduct an Interagency Solutions Analysis (IASA), as endorsed by the Joint Staff Joint Capabilities Board on 21 Aug 09 (and submitted for final JROC approval), that identifies the range of whole of government-capabilities to fill MDA gaps identified in the Interagency Investment Strategy. Concurrently, the NORTHCOM/PACOM MDA Joint Integrating Concept (JIC) was approved by the JCB for publication, an 8-20 year forward look and will be integrated in the IASA efforts.
- NORAD/NORTHCOM – conduct the Joint Integration of Maritime Domain Awareness (JIMDA) Joint Test as approved by the DOD Operational Test and Evaluation Senior Advisory Council on 5 Aug 09 to develop, test, and evaluate TTPs to improve how operation centers use legacy systems and platforms to quickly improve MDA operator capability.
- Federal interagency partners – conduct a USG MDA Architecture Management Hub Plan that will document maritime data sources, information sharing agreements, and data sharing models.
- Department of Justice staff – transition the Maritime Information Exchange Model as the maritime information domain component of the National Information Exchange model.

- OSD staffs, the Joint Staff, and various Intelligence Community agencies – conduct an MDA data call from COCOMs and DoD components, establish a baseline of MDA-related programs and associated data products, information sharing details, and related programmatic and budget information.
- OSD staff, the Joint Staff, Federal inter-agency partners, and the DOD components – put in place an international and a USG governance structure for the Maritime Safety and Security Information System.

The EA for MDA responsibilities and operations support all of the DOD. Also, the DOD EA for MDA carries out interagency responsibilities that are more appropriately performed at the Secretary of Defense vice the Service level. The DOD EA for MDA thus provides unique capabilities in support of the whole of government approach necessary to ensure the safety and security of the maritime domain.

Navy

Establishment of N3N5⁴² Navy MDA Office (NAVADMIN 080/09 March 2009)

- **Description:** Navy MDA office:
 - Serves as the coordination and integration organization for Navy MDA efforts
 - Coordinates with USFF to establish MDA priorities and capability requirements
 - Advocates for fleet and naval component equities in OPNAV, department of defense and national MDA forums
 - Develops Navy MDA roadmaps to provide guidance in order to align and synchronize Navy MDA activities (e.g. communications strategy, engagement and outreach, architecture and acquisition, science and technology and operationalizing MDA).
 - Communicates across service, departmental, interagency and international boundaries to articulate Navy MDA priorities and interests.
 - Coordinates Navy engagement with congressional staff through the office of legislative affairs.
 - Update the Navy MDA concept and coordinate with USFF on revision of the fleet MDA CONOPS.
 - Facilitates and coordinate with USFF on development of MDA tactics, techniques and procedures (TTP), and requisite training.
 - Coordinates with Navy international programs office on MDA-related technology exchanges.

⁴² At the end of this reporting period, the Navy MDA Office was moved to Navy N2/N6.

- Participates in the planning and execution of Navy, joint and interagency exercises involving MDA, and ensure lessons-learned are incorporated into appropriate doctrinal or capability development processes

SECNAV INST 3052.1 January 20, 2009

- **Description:** SECNAV INST 3052 assigns responsibilities and establishes the authorities and governance structure necessary to develop and implement comprehensive, integrated Maritime Domain Awareness activities for the Department of the Navy. Governance structure consists of a Senior Steering Group and MDA Oversight Group, and also establishes the N3N5 MDA Office.

MDA Concept

- **Description:** The concept is a revision to the Navy MDA Concept published in 2007, and will guide the development and integration of further naval MDA initiatives into the broader effort to advance the National Plan to Achieve Maritime Domain Awareness (NPAMDA). This concept provides the basis for continuing MDA discussion, debate, and experimentation intended to align Navy and influence subsequent investments and capability development. The purpose is to provide a vision of how the Navy would operate in an aligned information architecture contributing to and benefiting from a National Maritime Domain Awareness (MDA) effort.

Maritime Safety & Security Information System (MSSIS)

- **Partners:** OGMSA, Coast Guard
- **Others who benefit:** U.S. Government, All MSSIS participants
- **Description:** Initially developed by the John A. Volpe National Transportation Systems Center in Cambridge, Massachusetts, a part of the U.S. Department of Transportation's Research and Innovative Technology Administration, in support of the Commander, U.S. Navy Europe/Commander Sixth Fleet's (CNE-C6F) efforts to expand his MDA capabilities in its Area of Responsibility and to develop an unclassified network that could provide real-time data that is essential to maritime security and safety. MSSIS has since evolved to incorporate worldwide servers combining many AIS data streams into a near real-time (less than five mins) stream.

The collaborative effort between Combatant Commanders, Navy Component Commanders and OGMSA has resulted in a strategy of engaging partner nations that have AIS collection systems to share their AIS data in a global community of interest via the MSSIS. There are over 60 countries from all COCOMs currently sharing AIS data openly through MSSIS, and additional countries are planning on joining the network. It is recognized that the sharing of AIS data alone will not result in overall Maritime Domain Awareness, but instead AIS data sharing is the baseline in the establishment of a community of maritime nations committed to safety, security and an environment open to commerce.

MSSIS Memorandum of Agreement (MOA)

- **Partners:** DOD/DHS/DOT, NATO
- **Description:** N3N5 MDA Office staffed MSSIS MOA across the Navy and received critical comments. N3N5 MDA Office drafted a revised MSSIS MOA that addresses the critical comments and received Flag level concurrence from across the Navy. This revised MSSIS MOA was subsequently submitted to the Joint Staff as Navy's unified position.

N3N5 MDA continues to work with NCC's, COCOMs, and DOD EA for MDA to ensure the future governance and management of MSSIS is consistent U.S. policy and regulations while maintaining the spirit and intent of this international information sharing initiative.

Exercises/ Events

- **Description:**
 - CNE-C6F Spring Offensive: A real-time event designed to test MDA technologies, MOC processes, and the MDA Reference Guide
 - TRIDENT WARRIOR 10: Is an annual FORCENet sea trial event, sponsored by Commander Second Fleet (C2F) and directed by Navy Net work Warfare Command (NNWC) focusing on operational level command and control. MDA Policy issues will be a main objective of TW 10.

Navy: OPNAV (N6)

The Non-Classified Enclave (NCE) and Shared Awareness and De-confliction Tool (SHADE-T)

- **IAIS Tasks Addressed:** 1, 2, 3, 4, 7, 9, 10, 11
- **Partners:** Commander Task Force (DTF) 151 Coalition Partners
- **Description:** The Non-Classified Enclave provides a collaboration environment outside the DOD Global Information Grid to afloat NGOs and international partners. Its capabilities include collaboration tools, alert based management technology, a shared non-classified common operational picture, persistent chat, social networking and advanced data monitoring and alerting, based on user defined alerts.

A Quick Reaction Assessment (QRA) of the NCE capability was successfully conducted by the Operational Test and Evaluation Force (OPTEVFOR) staff on December 3, 2008 and achieved Initial Operating Capability (IOC). In early 2009 the capability was deployed on USS Nashville in support of Africa Partnership Station. Due anti-piracy operations in C5F, a technology called Shared Awareness and De-confliction Tool (SHADE-T) was added to NCE, to enable collaboration with non-traditional coalition partners. NCE is currently aligning to transition to Coalition Enterprises Information Exchange System - Maritime (CENTRIXS-M) in FY11.

MDA Spiral 1

- **IAIS Tasks Addressed:** 1, 2, 3, 4, 7, 9, 10, 11
- **Description:** The MDA Spiral 1, including the Non-Classified Enclave (NCE), delivered enhanced vessel tracking, anomaly detection (Track Assessment and Anomaly Detection - Maritime (TAANDEM)), threat detection, expanded maritime interdiction capabilities and improved access to national databases for Naval and Coast Guard activities supporting National Maritime Security. Spiral 1 provides hardware, software and other technical support for components deployed at Command 2nd Fleet - C2F, C3F, C4F, C5F and C7F as well as PACFLT, U.S. Fleet Forces Command (USFF), National Maritime Intelligence Center (NMIC), Maritime Intelligence Fusion Center (MIFC) MIFCLANT, MIFCPAC, NAVCENT, NAVEUR and the MDA Enterprise Node. SPIRAL 1 supports the NMIC and MIFC LANT/PAC by facilitating data integration with the Intelligence Community systems, DHS (Department of Homeland Security) and DOJ (Department of Justice).

Specific activities in FY09 included; implementing the FY08 Quick Reaction Assessment (QRA) findings and recommendations, systems engineering and test and evaluation activities, deploying Forward System Engineering Teams (FSETS) to maintain prototype capabilities at fielded sites; delivered enhanced training materials, refresher training and long-term training development, logistics support and other program management support.

MDA Capabilities Based Assessment (CBA)

- **IAIS Tasks Addressed:** 1, 2, 3, 4, 7, 9, 10, 11
- **Description:** Maritime Fusion and Analysis Services (MFAS) Increment and Information Sharing End to End (IS E2E) Increment: The Navy's Resources, Requirements, Review Board (R3B) approved the MDA Capabilities Based Assessment (CBA) as briefed in January 2009. The MDA CBA identified capability gaps that will be resolved through non-materiel and materiel solutions. Pre-acquisition activities such as the development of an IS E2E Initial Capabilities Document (ICD) and the completion of MFAS and IS E2E Analysis of Alternatives (AoA), will identify potential materiel solutions and form the requirements basis for the future development of the MFAS and IS E2E increments.

Navy: OPNAV (N151)

MDA Spiral (Training & Education)

- **IAIS Tasks Addressed:** 2, 9, 10, 11, 13, 14, 15
- **Partners:** N2, N6, CFFC, NETC, Learning Centers, PMW-120
- **With whom output/benefit is shared:** Combattant Commanders, Joint interagency, interservice, Coast Guard
- **Description:** The MDA Spiral 1 including the Non-Classified Enclave (NCE) Training Planning Process Methodology and Training Evaluation Reports (TRE) were developed by PEO C4I and PMW 120, and validated by OPNAV N151 30 Jun 2009. The TRE provides an evaluation of training gaps and requirements associated with Spiral 1. The training gaps

and needs include: MDA operational nodes differ in configuration, technologies, manning, and missions; procedure standardization due to unique theater requirements and missions; varied roles and processes at the nodes; training gaps due to rapid fielding of new technologies and upgrades that exceed the pace of formalized training; lack of comprehensive training and education strategy aligned with individual, team, unit and integrated training.

Planned activities include implementing a performance support system (learning management system) to support online access to web-based training, provision of repository for job aids, and training management capability that aligns with learning center to provide a platform to support continuous learning. Development of a MDA overview course for leaders, operators, analysts, and maintainers to provide MDA familiarization. Development of technology application modules to provide operator, analyst, and maintenance training. Development of MDA scenario-based training to support unique regional/theater MDA requirements. Delivering performance support products including job aids that contain MDA reference material, quick reference guides, and job qualification requirements.

The planned development activities serve as the foundation for a Front End Analysis, the Navy Training System Plan (NTSP), and a comprehensive MDA training and education strategy. Recommendations approved in the NTSP by the Resource Sponsor and concurred by N1, will establish the training requirements to be used for Program Objective Memorandum (POM) 12 budget submission to support transition of training to formal educational environment, learning center and fleet training organizations.

Navy: OPNAV (N3/N5 NPS)

MDA Data Sharing Community of Interests (MDA DS COI)

- **IAIS Tasks Addressed:** 1, 5, 10, 11
- **Partners:** DHS, CBP, U.S. Army Corp of Engineers, TRAC-Monterey, U.S. Marine Forces Pacific Experimentation Center, Office of Naval Research, Naval Research Lab, U.S. Marine Forces Pacific Experimentation Center, N2, N6, CFFC, NETC, Learning Centers, PMW-120
- **With whom output/benefit is shared:** DHS, CBP, U.S. Army Corp of Engineers, TRAC-Monterey, U.S. Marine Forces Pacific Experimentation Center, Office of Naval Research, Naval Research Lab, U.S. Marine Forces Pacific Experimentation Center, N2, N6, CFFC, NETC, Learning Centers, PMW-120, Combatant Commands, interagency, interservice, Coast Guard
- **Description:** The MDA DS COI is the UNCLASSIFIED data sharing arm of the MDA prototype. MDA DS COI support will include capabilities developed to provide Automatic Identification System (AIS) tracks, Fusion and Analysis tools in addition to interagency/international resources and databases which enhance the commander's ability to gain an effective understanding of the maritime environment. Following its successful relationship-building with UCore, on November 5, 2008, the NIEM Program and the DoD Executive Agent (DoD EA) for Maritime Domain Awareness (MDA) entered into a strategic partnership with NIEM designed to strengthen information exchange for this critical mission area. Under this agreement, the DON and the DoD Executive Agent for MDA will work with

the NIEM Program to transition the Maritime Information Exchange Model (MIEM) 1.0, developed by the MDA Data Sharing Community of Interest, into NIEM as its maritime information domain component.

The Department of the Navy worked within the established community of interest, including the U.S. Coast Guard, to ensure that MIEM would meet the maritime community's requirements for information sharing. The development of MIEM included leveraging significant portions of National Information Exchange Model (NIEM) and extending beyond NIEM to include maritime-specific elements required for information exchange. The transition of MIEM will allow the maritime community of interest to leverage the tools, training, and governance provided by NIEM at a fraction of the cost

Navy: U.S. Fleet Forces (USFF)

Fleet MDA CONOPS Revision

- **IAIS Tasks Addressed:** 9, 11
- **Description:** USFF commenced review and revision of the Fleet MDA Concept of Operations (CONOPS). This review will examine how MDA is generated in the Maritime Operations Center (MOC) and will describe MDA at the Operational to the Tactical level. The revision will use the Navy's experience with MDA and the new tools developed to enhance MDA and update the guidance to the Fleet and its contribution to MDA. Additionally the Fleet is updating the Fleet ISR CONOPS. The ISR CONOPS describes how the Fleet collects, processes, and disseminates, ISR data in the MOC, and uses ISR to generate MDA.

MDA 101 and Fleet Courses

- **Description:** A Maritime Domain Awareness (MDA) Introductory Course is designed to close identified training gaps in Maritime Domain Awareness across USN staff. It is to be taught in three versions: two as CBT (one for high level audiences, one for mid-level audiences) and one with PowerPoint, Instructor Guide and Student Guides to be incorporated into other related courses. The courses will begin instruction OCT 09.

Fleet-level training is to be developed to support MOC MDA functions.

USFF Shipping Coordination Centers (SCC)

- **IAIS Tasks Addressed:** 1, 9, 14
- **Partners:** Joint Interagency Task Force – South (JIATF-S), Coast Guard
- **Description:** Shipping Coordination Centers (SCC) are the fundamental operational unit within the USFF Naval Coordination and Guidance for Shipping (NCAGS) mission. Physically located in Joint and Interagency commands, they allow for the populating of the MDA Maritime white picture through the collection of commercial shipping track and characteristic data from various sources and across Navy and DoD boundaries. These source include Alfa Reports received directly from commercial ships, U.S. Coast Guard (USCG)

and Customs and Border Patrol (CBP) and Department of Transportation (DOT) databases, the Shipping Coordination Teams (SCT) distributed at ports within the SCC's AOR when NCAGS areas are active, open source UNCLASS information generally found online via subscription commercial shipping services (e.g.: AIS-Live, Portguide, Lloyds-Fairplay), and military and USCG MDA networks such as GCCS-M, WebTAS, SANS, and CNIES.

Additionally, it has played a key role in influencing the development and testing of future MDA technologies through operational testing of systems like BRITE during technology testing exercises like TRIDENT WARRIOR, participation in conferences discussing the end-users requirements with regard to the Virtual Regional Maritime Traffic Center-Americas (VRMTC-A), the Non-Classified Enclave (NCE), and the drafting of general MDA doctrine, and through lessons learned through real world operations and utilization of new technology and doctrine (e.g. PANAMAX, TRANSOCEANIC, daily SCC operations). It has and continues to evolve as a key example of the operationalization of the MDA concept for the Navy's Maritime White Picture COP.

South America Liaison Officer (SOAM LNO)

- **Description:** South American navy organization (CAMAS) is responsible for MDA in SOAM water. The USFF CAMAS LNO billet provides assistance to CAMAS countries with their MDA initiative on the technology front by aiding in the installation and training of the JIATF-S Cooperative Navies Information Exchange System (CNIES) equipment in South America. Also by assisting DOT/Volpe and SOUTHCOM/C4F by working as a liaison between these organizations and the Brazilian Navy for MSSIS.

The CAMAS LNO participates in NCAGS exercises TRANSOCEANIC and TRANSAMERICA. The CAMAS LNO aids in training Foreign Navies in MDA doctrine, policies and procedures by facilitating the GMATS/NCAGS Basic and SCT Export courses for the training of Navies in South American countries.

MDA Development with Mexico

- **Partners:** U.S. Northern Command (NORTHCOM)
- **Description:** This effort includes development of an active Mexican Navy (SEMAR) component of NCAGS trained officers and enlisted personnel familiar with maritime activity and prepared to share information with USN on vessels of interest (VOI). USFF NCAGS has supported Maritime Domain Awareness through its outreach efforts to support the SEMAR in development of an NCAGS organization that would be available to share maritime information going forward. Coordinated with THIRD Fleet (as the NORTHCOM agent) and NAMSII, the support has focused on building a well-trained NCAGS function in Mexico that is now present at more than 24 local ports (CUMARS) and sharing information with the Section 6 command center in Mexico City.

Although still in development, the support effort has also involved providing the MSSIS platform to SEMAR and steps to provide technical assistance to help create a national maritime picture from AIS data throughout the country. To ensure consistency in subject matter expertise, USFF NCAGS contracted with GMATS (Global Maritime Administration Training System at Kings Point USMMA) to provide course training on

the maritime industry, NCAGS and MDA to further development of NCAGS. As further training, Mexico has participated in key exercises as observers, including PANAMAX and Bell Buoy. USFF NCAGS facilitated several seminar and planning conferences to advance the 24 month POA&M developed in December of 2007. USFF efforts are ongoing and have helped ensure that similar tools, conformity with ATP guidance, and Mexican interagency agreements have been established to further MDA.

Navy: Naval War College War Gaming Department (NWC WGD)

Fleet MDA CONOPS Revision

- **Description:** NWC will conduct a Maritime Domain Awareness (MDA) focused wargame at both the strategic and operational level. The wargame is sponsored by N3N5 Navy MDA Office and is being developed in conjunction with USFF and the Navy War College (NWC). The purpose of the wargame is to identify gaps, seams and overlaps in the Fleet MDA CONOPS.

Navy: Office of Naval Research

Naval S&T Strategy

- **Description:** The Naval S&T Strategy contains 13 focus areas of which Maritime Domain Awareness is one. The Strategy provides a synopsis of the S&T vision, high-level objectives, and pictorial representations that were presented to and approved by the Naval S&T Corporate Board. These highlight how S&T can advance Naval capabilities and will guide investments. The Naval S&T Focus Areas are:
 - Developed from naval needs
 - Embody durable or enduring themes
 - Sized for reasonable scale and magnitude
 - Traced directly from warfighting functions.

Navy: Naval Postgraduate School (NPS)

System / Sensor Fusion Networks

- **IAIS Tasks Addressed:** 1, 3, 5, 6
- **Partners:** DHS, U.S. Coast Guard, U.S. Army Corp of Engineers, TRAC-Monterey, U.S. Marine Forces Pacific Experimentation Center
- **Benefits shared with:** DHS, U.S. Coast Guard, U.S. Army Corp of Engineers, TRAC-Monterey, U.S. Marine Forces Pacific Experimentation Center

- **Description:** The goal of this research is to meet several MDA JIC capability gaps via the extending the capabilities of a current Common Operational Picture (COP) system, called the Integrated Real-time Automated Position Identification System (iRAPIDS) with capabilities to collect data from various sources (e.g. UAS, aerial, and surface assets) of maritime surveillance, fuse the sensor data, and pass this data to a behavior analysis algorithm for persistent & rapid early warning of impending threats.

The foundational system upon which the project will be based, iRAPIDS is a 2009 C/GOTS product, providing a universal common operational picture through a 2D geospatial, interactive tactical visualization and operational platform, and a 3D representation of sensors and assets in an operational zone. The platform is open, managing any network available information resources under any transport or protocol. iRAPIDS includes a configurable interoperability model that can allow almost any possible automatic response, e.g., allows sensors to cause cameras to focus on the affected areas.

Non-programmers can configure most new sensors and assets. Information can be summarized or detailed to any other platform on the network, including any other open network-available GCCS platform. iRAPIDS includes a multi-dimensional, configurable access model that allows virtually unlimited control of which subset of information are available to each instance of iRAPIDS as managed by any type of operator. The system can be deployed on any Windows platform, including small format PC's.

Humanitarian Assistance / Disaster Relief (HADR)

- **IAIS Tasks Addressed:** 5, 9
- **Partners:** U.S. Marine Forces Pacific Experimentation Center
- **Benefits shared with:** U.S. Marine Forces Pacific Experimentation Center
- **Description:** The Rapid Data Management System (RDMS™) is a patented solution from Global Relief Technologies, Inc., that enables the collection, aggregation and reporting of critical HADR information in real-time from remote and disconnected environments. The RDMS™ solution provides a secure but unclassified collections and reporting capability specifically designed to facilitate and enable interagency, intergovernmental and NGO collaboration during complex HADR missions.

MARFORPAC has leveraged the RDMS™ solution in the past in support of HCA MEDCAP missions and is now interested in evaluating the potential expanded use of RDMS™ across the full spectrum of HADR missions.

To that end, an HADR CONOPs will be developed for Crimson Viper to begin the process of defining relevant MARFORPAC HADR mission sets, their respective collections and reporting requirements and the relevant coordination partners including USG interagency partners, partner nation agencies, international organization partners and NGOs. This initial experiment will then be used to further refine an HADR capabilities set that can be more fully tested during subsequent MARFORPAC exercises (e.g. Balikatan and Cobra Gold).

Maritime Information Sharing Taskforce (MIST)

- **IAIS Tasks Addressed:** 4.1.1, 4.2.1, 4.3.1, 4.3.2, 4.4.2
- **Partners:** GMAII, OGMSA, USCG, CBP, NCAGS, DOT
- **Description:** The Maritime Information Sharing Taskforce (MIST) is an interagency effort to capture best practices in information sharing, create a structure for collaborative problem solving, and convey unique local issues to national policy makers. The MIST team is led by the Maritime Defense and Security Research Program (MDSRP) at the Naval Postgraduate School (NPS) in partnership with several federal agencies: the Maritime Administration (MARAD), the Office of Global Maritime Situational Awareness (OGMSA), Global Maritime and Air Intelligence Integration (GMAII), the U.S. Coast Guard (USCG), Customs and Border Protection (CBP), and Naval Cooperation and Guidance for Shipping (NCAGS).

MIST was stood up in the summer of 2008 as a prototype process to help the federal maritime domain awareness (MDA) effort incorporate the input of the private sector into the sharing of maritime security information. Coordinating with other national MDA efforts, MIST works closely with MARAD, OGMSA and GMAII. While MIST has a local practitioner level focus, our national partners held the inaugural Global Maritime Information Sharing Symposium (GMISS). To ensure that our local work efforts aligned with the national efforts, both organizations looked at incentives and models for information sharing and ways to streamline government requests.

The MIST Puget Sound process culminated in a stakeholder workshop in the Port of Seattle in May 2009, then a publicly released report of our findings in July 2009. Using a participatory design approach, the researchers partnered with federal and commercial stakeholders to assess the information sharing needs of security personnel in this port region. The research design included an issues workshop, field studies of port personnel, and local networking events. The findings indicate the need for increased interagency collaboration in MDA and highlight local recommended practices and incentives for information sharing with the private sector. In addition, we gathered usability data on two federal policies/programs.

Tactical Network Topology - Marine Interdiction Operations (TNT-MIO)

- **IAIS Tasks Addressed:** , 2, 5, 9, 11
- **Partners:**
 - **Main partner:** Lawrence Livermore National Lab
 - **Other partners:**
 - 10 DoD + U.S. Government Agencies
 - 4 State and Local Government
 - 4 Foreign Partners
- **Description:** This is a multi-year project that involves simulated interdiction operations in various ports and Riverine locations in the U.S. and around the world. The experimental concepts are:

1. To bridge the gap between sensors and actors on the ship, and decision-makers and analysts on the shore,
2. Utilizing ad hoc self-forming mesh networking technology combined with collaborative decision-support tools to compress the timeline of interdiction operations, and
3. Exploring Inter-Agency and Coalition collaborative information sharing, enabling geographically distributed command centers and subject matter experts to collaborate with the boarding parties in real time to facilitate situational understanding and course of action selection. The latest experiments are also focused on multiple small craft global monitoring interdiction and search.

Maritime Domain Awareness – Multi-source Fusion and Correlation

- **Partners:** The Space and Naval Warfare Systems Center (SSC) Pacific
- **Description:** Our concept involves the fusion of classified data from national Signals Intelligence (SIGINT) and Image Intelligence (IMINT) sources, unclassified contact information from AIS collectors and radar satellites, unclassified open source information from shipping companies, port authorities, vessel tracking systems, such as in use by the U.S. Coast Guard, and classified human intelligence (HUMINT) sources.

One of our goals in our MDA research effort is to keep apprised of and examine current capabilities that can keep track of vessels on a global scale.

Additionally, in an effort to promote further awareness and knowledge-sharing of not only MDA-related products, but all research (theses, technical reports, conference proceedings, etc.) at NPS, we have developed a Classified Research Database on both the SIPRnet and JWICS systems.

US Northern Command (NORTHCOM)

Theater Security Cooperation Plan

- **IAIS Tasks Addressed:** 9
- **Partners:** Mexico
- **Description:** NORTHCOM international cooperation with Mexico is progressing on illicit trafficking. NORTHCOM is assisting Mexico with development of its MDA capabilities.

Joint Integrated Maritime Domain Awareness (JIMDA) Joint Test and Evaluation (JT&E)

- **Partners:** North American Aerospace Defense Command (NORAD)
- **Description:** NORAD-USNORTHCOM Maritime Domain watchstanders use an intensive in-house training program. Formal assessment of joint and intra-government MDA processes and tactics, techniques and procedures is needed. On 5 August 2009 the Joint Test & Evaluation Senior Advisory Council chartered JIMDA as a three-year JT&E.

US Northern Command (NORTHCOM) / U.S. Pacific Command (PACOM)

DOD MDA Joint Integrating Concept (JIC) Development

- **Description:** NORTHCOM and PACOM are the primary authors of the MDA JIC. The JIC identified seven required capabilities based on a substantial body of prior work. On 21 August 2009 the Joint Capabilities Board endorsed the MDA JIC and the MDA Interagency Solutions Analysis/JIC CBA Integrated Study Plan. The IASA plan will be forwarded for final approval by General Cartwright, Vice Chairman, JCS and Joint Requirements Oversight Council Chair.

US Pacific Command (PACOM)

Cooperation Afloat Readiness and Training (CARAT)

- **Partners:** Philippines, Singapore, Malaysia, Thailand, Brunei and Indonesia
- **Description:** PACOM's traditional allies continue to collaborate while work continues to add more partners to the collective. PACOM encourages, supports and actively participates in various regional maritime forums. One focus of these partnerships is to establish cooperative bilateral and multilateral efforts to increase interoperability and enhance regional cooperation. PACOM supports and conducts many activities while respecting each country's sovereignty. For example:
 - CARAT provides the U.S and six Southeast Asian nations the opportunity to exchange knowledge and information sharing, to collaborate and expand and sharpen maritime security through shared training, equipment and manpower.

Transnational Information Sharing Cooperation JCTD

- **IAIS Tasks Addressed:** 3, 11
- **Partners:** Office of the Secretary of Defense (OSD)
- **With whom output/benefit is shared:** Combatant Commanders
- **Description:** Transnational Information Sharing Coalition (TISC) Joint Capabilities Technology Demonstration (JCTD) provides a tool set to allow internal and external partners to the Department of Defense to rapidly share information in a protected, non-classified environment, and explores an open source concept that delivers an information sharing capability at an affordable cost, leveraging federation of capabilities. PACOM utilizes TISC to share information on activities common to adjoining AORs

Asia-Pacific Area Network (APAN)

- **IAIS Tasks Addressed:** 2, 15
- **With whom output/benefit is shared:** U.S. Government, DOD, All Partners
- **Description:** APAN is an unclassified, world wide web site offering information resources and a collaborative planning environment as a means to greater defense interaction, confidence-building, and enhanced security cooperation in the Asia-Pacific area. Established in 2000 and hosted by PACOM. Supports the Theatre Security Cooperation Program (TSCP). Visit APAN website: <http://www1.apan-info.net/>

Southeast Asia Cooperation Against Terrorism (SEACAT)

- **IAIS Tasks Addressed:** 11
- **Partners:** Brunei, Indonesia, Malaysia, Philippines, Thailand, U.S. Government
- **Description:** SEACAT is designed to focus maritime information sharing, cooperation and coordination, enhancing maritime domain awareness. SEACAT brings six countries together for simultaneous bilateral exercises with the United States. The multifaceted exercises present participants with realistic situations involving criminal and terrorist threats requiring international coordination, communication and decision-making. SEACAT also provides participants with practical maritime interception training opportunities to enhance the maritime security and interoperability of the participating forces.

US Southern Command (SOUTHCOM)

Leverage MDA in Operational Plans

- **IAIS Tasks Addressed:** 1, 8, 11, 15
- **Partners:** Columbia, Panama, Brazil
- **With whom output/benefit is shared:** Columbia, Panama, Brazil
- **Description:** Enabling Partner Nations participation in MDA initiatives and information sharing. Capacity building in Partner Nation's ability to monitor maritime and respond to maritime scenarios. While working with other countries, Colombia had tremendous success in mitigating the counter narcotics / drug trafficking organizations challenges; Panama had cooperative efforts in regarding defense and transition of the Canal; leveraged Brazil's existing maritime monitoring system. Continuing objectives include identifying all available data sources, publish source libraries, detect anomalies, understand user defined operational picture, and decide upon course of action.

MDA Current and Planned Capabilities

- **IAIS Tasks Addressed:** 5, 6, 7, 10, 11, 15
- **Description:** Baseline of current capabilities are used to manage, collect, fuse, analyze, and disseminate information, and make decisions in the maritime domain of Area of Focus.

Planned capabilities are Non-Classified Enclave (NCE), Tag, Tracking, and Locating, MASTER, CMA, TRIPWIRE, biometrics, and ADDER. Some critical capabilities are persistent ISR (in accordance with USSOUTHCOM IPL); fuse all government and commercial data sources, and anomaly detection based on fused data.

Desired capabilities within the next 18 months are commercial imagery linked into NCE, a fully fielded NCE available across whole of government enterprise, persistent AIS coverage, and increased partner nation involvement.

Gaps that have been noted are a common (cross domain solution) collaboration system that performs anomaly detection, displays, and enables decision making. Also ISR technology to locate and track self-propelled, semi-submersible threats.

Ensure Security for Political and Economic Freedom, with Respect for Human Rights

- **IAIS Tasks Addressed:** 1, 4, 9, 10, 11, 13, 14, 15
- **Partners:** Joint Interagency Task Force – South (JIATF-S)
- **Description:** Working with interagency partners, we assist partner nations on the development of their national security strategies to help them better understand the linkages of their entire governmental apparatus, as it pertains to their internal security, sovereignty, and cooperation. As MDA is driven in part by international partnerships and relationships, primary interests include fisheries, energy, illicit trafficking, disaster response, and national commerce protection. Area of focus challenging partnerships are as follows:
 - Circular 175 states DoD officials are authorized to propose and negotiate MSSIS user agreements with appropriate military authorities. The agreement can only be concluded after coordination through OSD and DoS. This holds true for providing or loaning AIS “kits” to participate in either VRMTC-A or MSSIS networks. However, if a potential partner nation were to contact the DoT VOLPE Center directly, they could obtain MSSIS access directly.
 - Poverty throughout AoF.

Mission and Responsibilities

- **IAIS Tasks Addressed:** 1, 12
- **Partners:** DoD, COCOMs, Joint Staff
- **Description:** USSOCOM requires access to and the ability to collaboratively collect process, analyze, and disseminate information on surface, near surface, and sub surface maritime threats.

MDA current and planned resources:

- Integrated Survey Program
- Maritime special operations forces and intelligence, surveillance, and reconnaissance (SOF ISR) and Tagging, Tracking, and Locating (TTL)
- Standing intelligence fusion and dissemination
- Maritime sensor and TTL quiver (planned)
- Identifying needed or recommended changes in policies, procedures, exercises, or other functions with Joint Staff and DoD EA for MDA.

US European Command (EUCOM) / Naval Forces Europe (NAVEUR)

Engaging European nations to join MSSIS

- **Partners:** Croatia, Montenegro, Bulgaria, Ukraine
- **Description:** The majority of the European Maritime Safety and Security Information System (MSSIS) members are connected through their national AIS networks. Some of these countries, such as Croatia, Montenegro, Bulgaria, and Ukraine, required equipment and technical support to successfully join MSSIS. However, to date, no European nation has required a data sharing agreement to share their AIS data to date.

Continued support is required for MSSIS and other technological capabilities that facilitate partner data sharing and common situational awareness.

US and European efforts to integrate MDA systems

- **Partners:** Finland, NATO, Sweden, and Singapore
- **Description:** NAVEUR successfully demonstrated the unclassified system integration with maritime partners in the Multi-National Experimentation 5 (MNE5) series. Each nation or organization involved was integrated into MDA Service-Oriented Architectures. They executed detailed MDA scenarios in integrated operational environments. Plans are to continue participation in the MNE6 series, working towards a sustainable theater-wide integrated operational MDA architecture. However, to integrate with other partner nations, it would require an establishment of policies and the use of network outside Global Information Grid.

US African Command (AFRICOM)

Engaging African nations to join MSSIS

- **Partners:** Angola, Cameroon, Cape Verde, DROC, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mauritius, Morocco, Mozambique, Seychelles, Sao Tome and Principe, Senegal, Sierra Leone, Tanzania, Tunisia, and Togo

- **With whom output/benefit is shared:** Angola, Cameroon, Cape Verde, DROC, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mauritius, Morocco, Mozambique, Seychelles, Sao Tome and Principe, Senegal, Sierra Leone, Tanzania, Tunisia, and Togo
- **Description:** AFRICOM has utilized 1206 monies to establish AIS installations with visualization software (TV-32). This allows for partner countries to share AIS data among themselves, with AFRICOM, and with other participating nations outside the region.

Regional Maritime Awareness Capability (RMAC)

- **Partners:** Department of State, Sao Tome and Principe, Nigeria, Djibouti
- **With whom output/benefit is shared:** Department of State, Sao Tome and Principe, Nigeria, Djibouti
- **Description:** RMAC is a surface surveillance system utilizing an automatic identification system and ground-based radar and sensors to enhance awareness of maritime traffic. It is U.S. Navy inspired and the project is coordinated with DoD and DoS. Sao Tome and Principe Coast Guard were the first to install this system which has assisted all involved in enforcing maritime governance and preventing illegal activities.

The effort was coordinated with AFRICOM as a means to respond to specific African requests for assistance.

US Transportation Command (TRANSCOM)

Partnerships and Capabilities

- **IAIS Tasks Addressed:** 1, 2, 15
- **Partners:** ONI, MIFC PAC/LANT, PACOM, EUCOM, AFRICOM, CENTCOM
- **Description:** TRANSCOM maintains comprehensive knowledge of strategic ports and associated infrastructure and disseminates this knowledge to the developing MDA architecture to enhance actionable intelligence. Liaisons have been developed with MDA intelligence centers to enhance intelligence sharing and disseminations for the National MDA COP. Some of the capabilities used are TRIPWIRE, MIDB, Google Earth, and Global Transportation Network / Single Mobility System. TRANSCOM continues to contribute to the larger MDA picture by integrating our port infrastructure analysis and production into the MDA UDOP.

Department of Homeland Security (DHS)

Customs and Border Protection (CBP)

MDA Information Enterprise Hubs (Cargo & People)

- **With whom output/benefit is shared:** Across the U.S. Government (longer term: entire GMCOI).
- **Description:** The development of the MDA Cargo and People Information Hubs is on-going and facilitates information sharing within the GMCOI for maritime related information

National Targeting Center - Cargo (NTC-C)

- **IAIS Tasks Addressed:** 5, 6, 9
- **Partners:** DHS, USCG, USN, DoD, various federal law enforcement agencies
- **With whom output/benefit is shared:** DHS, USCG, USN, DoD, various federal law enforcement agencies
- **Description:** The National Targeting Center-Cargo (NTC-C) was established to coordinate and support CBP anti-terrorism activities relating to cargo movements in all modes of transportation by proactively targeting and coordinating examinations of high-risk shipments, and instruments of international traffic. NTC-C supports CBP offices in the United States as well as CBP offices located in foreign ports by providing high quality research to assist in all cargo-related activities. NTC-C has established partnerships/liaisons with numerous federal agencies in order to gain information to identify and examine cargo shipments that may pose as a threat to the United States. NTC-C supports the assistance of other countries in developing systems to manage anti-terrorism and security threats by hosting foreign Customs officials under the International Fellowship Program.

National Targeting Center - People (NTC-P)

- **IAIS Tasks Addressed:** 7, 8, 9
- **Partners:** DHS, USCG, USN, DoD, various federal law enforcement agencies
- **With whom output/benefit is shared:** DHS, USCG, USN, DoD, various federal law enforcement agencies
- **Description:** The CBP National Targeting Center-Passenger (NTC-P) facility is a 24/7 operation with the centralized mission of coordinating anti-terrorism targeting and support of all CBP Anti-Terrorism activities. The NTC-P supports and responds to inquiries from the field, conducts tactical targeting to identify actionable targets, develops Automated Targeting System (ATS) rules, and supports Intelligence Driven Special Operations (IDSO). NTC-P has established partnerships/liaisons with numerous federal agencies and international entities in order to gain information to identify and examine passengers that may pose as a potential terrorist threat to the United States.

International Trade Data System (ITDS)

- **IAIS Tasks Addressed:** 1, 5, 6, 9, 12, 13
- **Partners:** Forty-six (46) federal stakeholders
- **With whom output/benefit is shared:** Forty-six (46) federal stakeholders
- **Description:** International Trade Data System is the process of integrating the business requirements of participating government agencies (PGAs) into the Automated Commercial Environment (ACE) s to provide capability for the electronic collection, use, and dissemination of trade data to over 40 federal agencies. ITDS is the program that assists the PGAs as they prepare for, integrate their business requirements into, deploy, and sustain ACE. In addition, the program provides guidance on the legal implications of PGA integration into ACE and serves as a forum for agency issues. ACE will offer a single window filing to the trade community and supports the World Customs Organization (WCO's) efforts to facilitate the exchange of information between those government agencies that regulate international trade worldwide

Office of Infrastructure Protection (IP)

MDA Information Enterprise Hubs (Infrastructure)

- **With whom output/benefit is shared:** Across the U.S. Government (longer term: entire Global Maritime Community of Interest)
- **Description:** The development of the Infrastructure Information Hubs is on-going and facilitates information sharing within the GMCOI for maritime related information.

Coast Guard

Integration of Maritime Information Exchange Model (MIEM) into National Information Exchange Model (NIEM)

- **IAIS Tasks Addressed:** 1, 2, 4
- **Partners:** DoD, DON, DOJ & various federal, state, local, and private sector stakeholders
- **With whom output/benefit is shared:** DoD, DON, DOJ & various federal, state, local, and private sector stakeholders
- **Description:** The Coast Guard awarded the contract to enhance NAIS by developing AIS data exchange capability. This will give NAIS the ability to exchange AIS information between equipped vessels, aircraft, aids to navigation, and shore stations, including AIS receive and transmit messaging, data processing, storage, and retrieval, and system monitoring. Project will initially deliver this capability to three major sector commands, with planned future development nationwide. Additionally, as a Concept Development piece of NAIS, the Coast Guard has begun to receive AIS data gathered from space by commercial

satellite. The effectiveness of this capability is being evaluated and the AIS data is being shared with DoD for their independent evaluation.

Nationwide AIS (NAIS)

- **IAIS Tasks Addressed:** 1, 10, 11
- **With whom output/benefit is shared:** DOD, All MSSIS participants
- **Description:** The Coast Guard awarded the contract to enhance NAIS by developing AIS data exchange capability. This will give NAIS the ability to exchange AIS information between equipped vessels, aircraft, aids to navigation, and shore stations, including AIS receive and transmit messaging, data processing, storage, and retrieval, and system monitoring. Project will initially deliver this capability to three major sector commands, with planned future development nationwide. Additionally, as a Concept Development piece of NAIS, the Coast Guard has begun to receive AIS data gathered from space by commercial satellite. The effectiveness of this capability is being evaluated and the AIS data is being shared with DoD for their independent evaluation.

Long Range Identification and Tracking (LRIT)

- **IAIS Tasks Addressed:** 1, 10, 11
- **With whom output/benefit is shared:** DOD
- **Description:** The IMO's LRIT system is now operational, although full implementation will not be realized until Dec 2009. LRIT will make it possible for participating nations to purchase and receive certain data on vessel locations. Specifically, the U.S. will have access to purchase data regarding positions of U.S. flag vessels anywhere in the world, all SOLAS vessels bound for U.S. ports, and all SOLAS vessels within 1000 nm of U.S. territory, regardless of destination. The Coast Guard has established the interim International Data Exchange, as well as the U.S. National Data Center.

Maritime Awareness Global Network (MAGNet)

- **IAIS Tasks Addressed:** 1, 9, 11
- **Partners:** DHS, DoD, Intel Community
- **With whom output/benefit is shared:** DHS, DoD, Intel Community
- **Description:** MAGNet is an operational Coast Guard system which ingests, stores, and fuses strategic and technical intelligence and law enforcement data. MAGNet is composed of three independent systems--one for each classification level (Top Secret (TS) / Sensitive Compartmented Information (SCI), Secret, and Unclassified). These systems connect through high assurance guards to properly sanitize information before passing it to another level of classification. Each level collects, processes, and disseminates a complete MDA picture.

Interagency Operations Centers/Command 21 (IOC/Cmd21)

- **IAIS Tasks Addressed:** 1, 10, 12
- **Partners:** DHS, DoD, various federal, state, local, and private sector stakeholders.
- **With whom output/benefit is shared:** DHS, DoD, various federal, state, local, and private sector stakeholders.
- **Description:** Interagency Operations Centers are mandated by the Security and Accountability For Every (SAFE) Port Act of 2006. Project includes port-specific sensors and an information management system which consumes and organizes data, applies knowledge and planning tools, then allows decision makers to visualize the maritime environment and act.

US Coast Guard Enterprise Service Bus

- **IAIS Tasks Addressed:** 2
- **Partners:** Intra-USCG
- **With whom output/benefit is shared:** Intra-USCG
- **Description:** Developing USCG Service Oriented Architecture capabilities to provide support for emerging inter-agency information services.

The Intelligence Coordination Center (ICC) Partnership with Office of Naval Intelligence (ONI)

- **IAIS Tasks Addressed:** 5
- **Partners:** Intra-USCG
- **With whom output/benefit is shared:** Intra-USCG
- **Description:** The U.S. Coast Guard's Intelligence Coordination Center (ICC) and U.S. Navy's Office of Naval Intelligence (ONI) are partnered together at the National Maritime Intelligence Center (NMIC). The NMIC is responsible for generating the national maritime Common Intelligence Picture, used by the Department of Homeland Security and NORTHCOM components for situational awareness and, where necessary, orchestrating a response to developing events. This partnership is the key ingredients of the Global Maritime Intelligence Integration Plan, Maritime Domain Awareness, as well as the National Intelligence Program War on Terror.

Global Trader (in partnership with Office of Naval Intelligence)

- **Partners:** Various federal stakeholders
- **With whom output/benefit is shared:** Various federal stakeholders
- **Description:** An Office of Naval Intelligence (ONI) capability shared with the Coast Guard Office Intelligence Coordination Center (ICC) which gathers, queries, and analyzes supply-chain transactional data. Advanced analytics provides benefits beyond simple information

retrieval, including detecting emerging patterns; identifying new patterns; fusing data; creating models that can learn and predict behavior; and identifying new features for future tools.

Transportation Worker Identification Credential (TWIC) (in partnership with the Transportation Security Administration)

- **Partners:** various federal, state, local, and private sector stakeholders
- **With whom output/benefit is shared:** various federal, state, local, and private sector stakeholders
- **Description:** TWIC is a bio-metric-based identification credential, mandated by the Maritime Transportation and Security Act (MTSA), which will help identify workers who have been properly cleared and will prevent individuals who pose a potential security threat from having unescorted access to secure areas of the marine transportation system. The program is administered by the Transportation Security Administration (TSA), with the Coast Guard responsible for the Regulatory process and providing program overview. MTSA mandated two types of maritime credentials -- the Transportation Workers Identification Credential (TWIC), which allows access to secure areas of vessels and facilities for domestic workers, and an enhanced identification credential for international seafarers.

COASTWATCH

- **Partners:** DHS, USN, & various federal, state, local, and private sector stakeholders.
- **With whom output/benefit is shared:** DHS, USN, & various federal, state, local, and private sector stakeholders.
- **Description:** A function of the USCG ICC, Coastwatch's mission is to identify, watch, and warn of potential security threats in the form of suspect ships, people and cargo in or enroute to the U.S. maritime domain. Goals are to provide USCG and interagency decision-makers with as much advanced threat warning as possible to facilitate an appropriate operational response. Coastwatch personnel screen all arriving passengers and crew of ships required to give an advanced 96-hours notice of arrival. This activity directly supports the President's maritime security policy documented in NSPD-41/HSPD-13

Maritime Intelligence Fusion Centers (MIFC)

- **Partners:** DoD, DHS, CBP, ICE, FBI, NSA, NCIS
- **With whom output/benefit is shared:** DoD, DHS, CBP, ICE, FBI, NSA, NCIS
- **Description:** MIFCs are the Coast Guard Areas' tactical maritime intelligence nexus, leveraging all available information sources and methods to provide time-critical, actionable operational and tactical intelligence to Area operational commanders, and partners

National Tactical Integration Office (NTIO)

- **Partners:** DoD, USN & various federal stakeholders
- **With whom output/benefit is shared:** DoD, USN & various federal stakeholders
- **Description:** NTIO exploits existing and planned national intelligence collection systems and capabilities for the purposes of improving the operational effectiveness of CG maritime, air, and shore units. The USCG's equivalent to the various Tactical Exploitation of National Capabilities (TENCAP) offices located within the Department of Defense, NTIO is tasked with rapid Research and Development (R&D) prototyping to develop major breakthroughs in the delivery of intelligence to tactical units to increase their operational effectiveness.

Vessel Identification System (VIS)

- **Partners:** Various federal, state, local boating safety administrators
- **With whom output/benefit is shared:** Various federal, state, local boating safety administrators
- **Description:** VIS is a nationwide system for collecting information on vessels and vessel owners and other information that will assist law enforcement officials in their investigations of stolen vessels or other crimes, such as fraud. VIS also supports Maritime Domain Awareness by providing the ability to identify all vessels in and around ports. State participation in VIS is on a voluntary basis.

National Vessel Movement Center (NVMC)

- **Partners:** DHS & various federal stakeholders
- **With whom output/benefit is shared:** DHS & various federal stakeholders
- **Description:** NVMC was established to process the information being received under the expanded 96-hour ship Advanced Notice of Arrival requirements. The Center's ship arrival notification system database collects vessel information which is forwarded to the intelligence community and other maritime stakeholders.

Coast Guard Counter-Intelligence Service (CGCIS)

- **Partners:** DHS & various federal stakeholders
- **With whom output/benefit is shared:** DHS & various federal stakeholders
- **Description:** The CGCIS is the intelligence collection capability that detects, deters, & defeats (neutralize) espionage, Foreign Intelligence and Security Services (FISS), organized criminal organizations (drug cartel and alien migrant smuggling intelligence collection directed against the Coast Guard) and international terrorist collection efforts directed against Coast Guard

Maritime Homeland Threat Analysis Division (MHTAD)

- **Partners:** DHS & various federal stakeholders
- **With whom output/benefit is shared:** DHS & various federal stakeholders
- **Description:** MHTAD is a division the Office of Naval Intelligence (ONI) and the U.S. Coast Guard Intelligence Coordination Center (ICC) at the National Maritime Intelligence Center (NMIC) in Suitland, Maryland, which provides relevant and timely maritime related homeland threat analysis reporting of events that originate both at home and overseas

Electronic Notification of Arrival /Departure (eNOAD)

- **Partners:** Customs and Border Protection
- **With whom output/benefit is shared:** Customs and Border Protection
- **Description:** eNOAD provides an easy-to-use and efficient method for reporting the vessel arrival and/or departure information required by the USCG and other Federal agencies for vessels visiting U.S. ports. It was developed to enable an eNOAD to be submitted directly to the NVMC via the Web (even while the vessel is underway), thereby avoiding faxes, scanners, and telephones. It provides a means for managing and storing recently submitted company, vessel, personnel, and arrival information

America's Waterways Watch (AWW)

- **Partners:** Various stakeholders
- **With whom output/benefit is shared:** Various stakeholders
- **Description:** America's Waterway Watch is a public outreach program, encouraging participants to simply report suspicious activity to the Coast Guard and/or other law enforcement agencies

Marine Information System for Safety and Law Enforcement (MISLE)

- **Partners:** DoD, DHS, & various federal, state, local, and private sector stakeholders
- **With whom output/benefit is shared:** DoD, DHS, & various federal, state, local, and private sector stakeholders
- **Description:** The Coast Guard's comprehensive official law enforcement (LE) and marine safety information database. Provides data on vessels, cargo and people, including merchant and recreational vessel data, from the USCG marine safety and law enforcement personnel, from either observed or boarded vessels. MISLE provides the user with rapid access to tactical LE information including lookout lists, vessel registration, and prior encounter information and provides information to the USCG Common Operating Picture (COP)

Inland Rivers Vessel Movement Center (IRVMC)

- **Partners:** DHS, & various federal, state, local stakeholders
- **With whom output/benefit is shared:** DHS, & various federal, state, local stakeholders

- **Description:** The Coast Guard's system to collect information concerning barges loaded with Certain Dangerous Cargo (CDC) transiting the Western River System of the U.S.

Immigration and Customs Enforcement (ICE) / Sector Specific Agency Executive Management Office (SSA EMO)

Law Enforcement Information Sharing Service (LEISS)

- **IAIS Tasks Addressed:** 1, 2
- **Partners:** DHS, USCG, NCIS, various state & local law enforcement agencies.
- **With whom output/benefit is shared:** DHS, USCG, NCIS, various state & local law enforcement agencies.
- **Description:** Law Enforcement Information Sharing (LEIS) Service is an initiative of the inter-agency Law Enforcement Shared Mission Community. LEIS offers investigators a more efficient, automated system for obtaining information and aggressively shares information with a broad array of federal, state and local law enforcement agencies via a web-based exchange, promoting the sharing of pertinent, legally sharable case information more rapidly and extensively, while allowing personnel to more quickly identify non-obvious relationships, patterns and connections between individuals and organizations. The LEIS Service has been deployed on a regional basis to law enforcement consortiums at southwest border locations. LEIS has been expanded to OneDOJ and takes advantage of the Department of the Navy – Naval Criminal Investigative Service (NCIS) Law Enforcement Exchange (LInX) platform

Immigration and Customs Enforcement (ICE)

Law Enforcement Analysis Data System (LEADS)

- **Partners:** DHS
- **With whom output/benefit is shared:** DHS
- **Description:** Supports intelligence collection, dissemination analysis, and generation of finished intelligence and investigative products

Office of Intelligence and Analysis (DHS I&A)

DHS Information Sharing Strategy

- **Partners:** DHS agencies
- **With whom output/benefit is shared:** DHS agencies
- **Description:** Department of Homeland Security high level policy and guidance for information sharing based on the National Strategy for Information Sharing.

Domestic Nuclear Detection Office (DNDO)

West Coast Maritime Preventive Radiological/Nuclear Detection Pilot (WCMP)

- **IAIS Tasks Addressed:** 1, 2
- **Partners:** USCG, DHS, various federal, state, local, and tribal stakeholders
- **With whom output/benefit is shared:** USCG, DHS, various federal, state, local, and tribal stakeholders
- **Description:** The WCMP pilot is a 3-year plan to design, field & evaluate layered preventive radiological/ nuclear detection (PRND) capability for participating public safety forces to counter the small vessel risk. The pilot expands education, communication, and coordination among local public safety officials, and it builds awareness about the risk of small vessels smuggling WMD, & vulnerability of these ports to direct attack

Maritime Test Campaign "CRAWDAD/DOLPHIN"

- **IAIS Tasks Addressed:** 1, 2
- **Partners:** USCG, DHS, various federal, state, local, and tribal stakeholders
- **With whom output/benefit is shared:** USCG, DHS, various federal, state, local, and tribal stakeholders
- **Description:** This project characterizes baseline performance of current COTS/GOTS boat-mounted radiation detectors, followed by on-the-water testing in an operational maritime environment of the best performers.

Science and Technology Directorate (DHS S&T)

DHS Inter-Agency Requirements Integrated Product Teams

- **Partners:** Various
- **With whom output/benefit is shared:** Various
- **Description:** DHS Science & Technology (S&T) Inter-Agency Requirements Integrated Product Teams (IPTs) were established for inter-agency requirements vetting in three areas: Identity Management & Privacy; Data Fusion & Visualization; and, Cross-Targeting. These IPTs provide requirements of the 22 DHS components and agencies (including Customs & Border Protection, Immigration & Customs Enforcement, Federal Emergency Management Agency and USCG) to DHS

Visualization Information Fusion Project

- **IAIS Tasks Addressed:** 1, 2
- **Partners:** Various DHS stakeholders
- **With whom output/benefit is shared:** Various DHS stakeholders

- **Description:** Visualization Information Fusion Project is an interoperable functionality managed by the DHS S&T Command Control Interoperability Division, and supported by Vis Tools, which is expected to result in cost-avoidance and increased information sharing across the maritime community. The project was successfully piloted in 2006 with implementations currently under development. -present; potential for inter-agency LE sharing, provided by NIEM

Maritime Security Technology Program (MTP)

- **Partners:** DHS, Naval Research Laboratory, shipping industry
- **With whom output/benefit is shared:** DHS, Naval Research Laboratory, shipping industry
- **Description:** In FY09 DHS S&T initiated the Maritime Security Technology Program to develop technology solutions that address key Homeland Security maritime mission risks. The MTP is focused on sensor and surveillance technology shortfalls, with particular emphasis on Wide Area Surveillance (WAS), port and coastal surveillance improvement, small boat harbor surveillance, and Inland Waterways Maritime Security (IWMS). A primary goal of the MTP is to create novel and affordable technology solutions (options) for the detection, classification, and localization of non-emitting, so-called "dark", targets such as semi-submersibles, wooden ships, low profile vessels, et cetera with particular emphasis on the ability to search wide areas, i.e. volumes of water

Department of Transportation (DOT)

Volpe National Transportation Systems Center (Research and Technology Innovation Administration)

Maritime Safety & Security Information System (MSSIS)

- **Partners:** DHS, DoD, OGMSA
- **With whom output/benefit is shared:** DHS, DOD, 65 participating nations
- **Description:** Provides vessel information including near-real time position.
 - MSSIS is a vessel tracking viewer developed by DOT/VOLPE that utilizes the International Maritime Organization (IMO) mandate for all vessel over 300GT to provide a VHS signal with prescribed vessel information. A demonstration project was initiated by the Navy with VOLPE, which proved successful, initially in the European Theater, and continues to be expanded world-wide under the management of the Maritime Administration. MARAD has an interagency agreement with VOLPE to continue the project.
 - Next step is the transition from a demonstration project to a program to continue the maintenance and operation with current users, and add more users world-wide. MOA on domestic governance of MSSIS between DOD, DHS & DOT is currently under review.

Maritime Administration (MARAD)

Marine View (MARVIEW)

- **With whom output/benefit is shared:** Any interested user can obtain an account
- **Description:** In report language, Congress tasked the Maritime Administration to be the “Information Advocate of the Marine Transportation System” and provided funds in 2005 that initiated the MarView project. The program provides shared access to a fault tolerant, secure, Federal facility capable of the collection, storage, management, and assured delivery of this critical information. The information is used to monitor the condition and performance of the marine transportation system. OGMSA is subscribed and using the collaboration tools within MarView.

Private Sector Sub-Committee

- **Partners:** OGMSA
- **Description:** MARAD has the lead for the private sector subcommittee to respond to tasks from the Maritime Domain Awareness (MDA) Executive Steering Committee (ESC). The Maritime Administration is the voice within the federal government in support of the maritime industry, and as such, has strong ties with the private sector. In addition, MARAD provides education and training to those in the industry. Responds to the taskings from the MDA ESC.

OGMSA Chief of Staff

- **Description:** MARAD has provided a full time COS to the GMSA staff who provides the reach-back and connectivity to DOT

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APPENDIX B

Fiscal Year 2009 OGMSA Objectives

OGMSA's Strategic Approach

- a. Relationships
- b. Technology
- c. Policy

OGMSA's FY09 Objectives

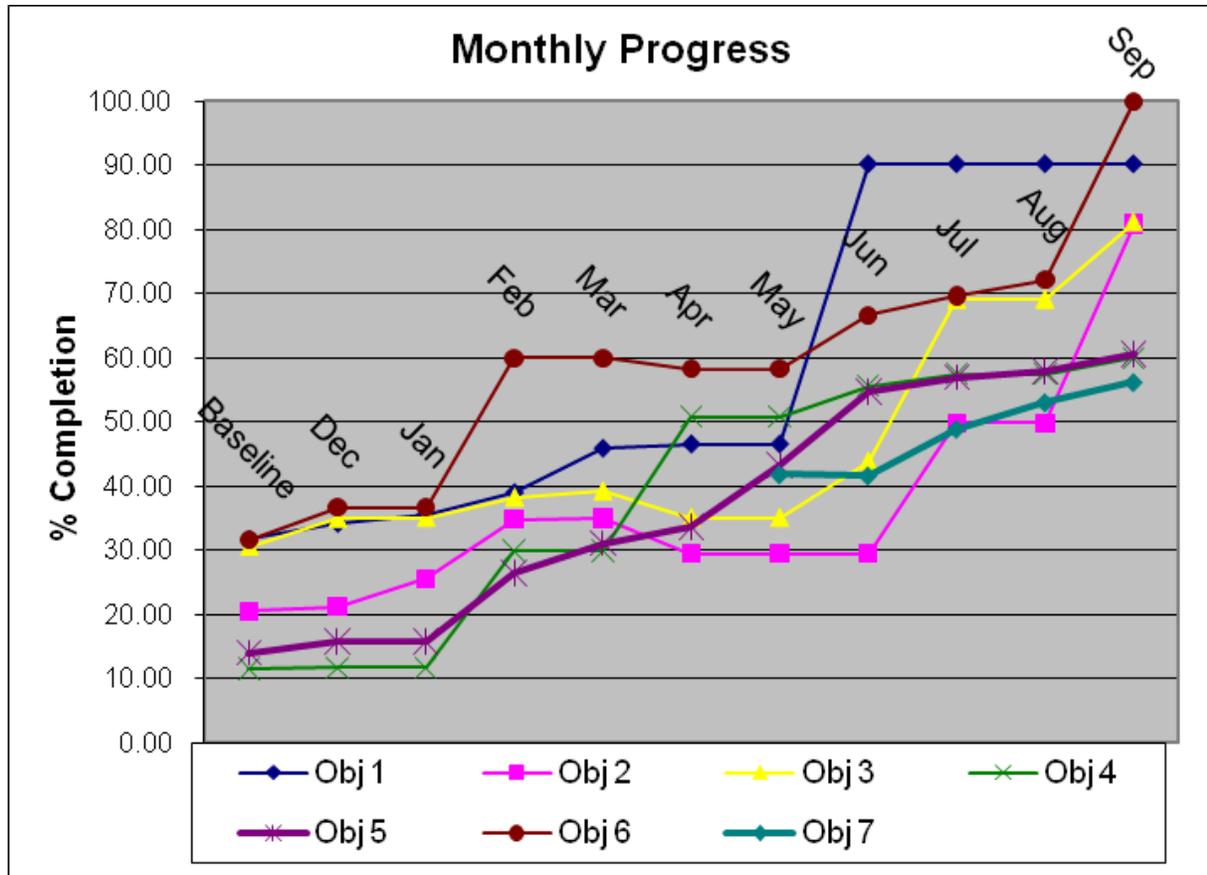
OGMSA's FY 09 Objectives were established to meet the needs of the U.S. federal MDA stakeholders, as put forward by the MDA Stakeholders Board Executive Steering Committee on Oct. 1, 2008.

1. Development of a national MDA Enterprise Architecture led by the Department of the Navy Chief Information Officer (DON CIO). This effort must synchronize with similar efforts within the Intelligence Community.
2. A coherent federal outreach and coordination effort for the maritime industry led by the Department of Transportation (DOT) Maritime Administration (MARAD).
3. Outreach to / coordination with state, local, international civil partners led by the Department of Homeland Security's (DHS) U.S. Coast Guard (USCG).
4. Creation, maintenance, and appropriate dissemination of an inventory/index of all MDA-related projects and research efforts (including those w/in DOD and the Intelligence Community).
5. Increased availability and sharing of maritime persons, cargo, infrastructure, and vessel data.
6. OGMSA Project Management coordination of these objectives

OGMSA Objectives Dashboard

(Through the end of September 2009)

The Objectives Tracking Tool was compiled by the OGMSA Plans and Policy Branch in cooperation with the other OGMSA Branch Heads to track progress of the objectives, as well as the supporting sub-objectives and tasks. This document is meant to be a dynamic tool to guide OGMSA’s course of actions (COA) regarding fulfillment of these objectives.

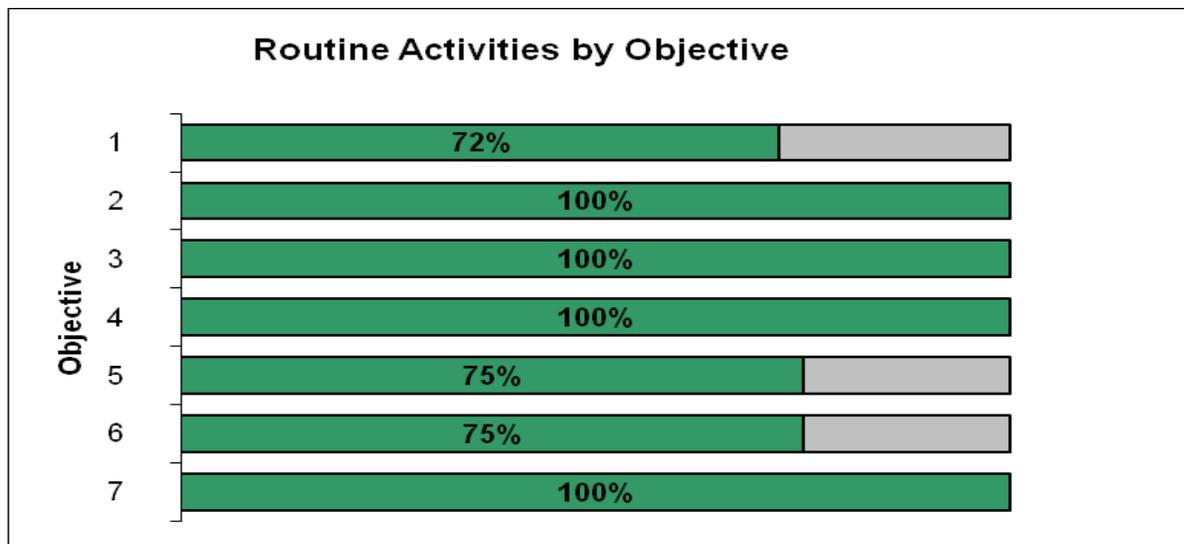


Through Sept. 30, 2009

Notes:

“Completion” for the purposes of the OGMSA Objectives Dashboard means completion of FY09 goals and should not be inferred to mean completion of the long-term objectives.

Displays for “Objective 7” are for OGMSA tracking of internal administrative goals only.



Through Sept. 30, 2009

SIGNIFICANT ENGAGEMENTS / PRODUCTS (Quantitative / Qualitative)

Objective 1 - (2) Created a Wiki site with over 200 users , serving as a collaboration point for the interagency. / Stood up the National Maritime Awareness Technology Subcommittee (NMATS).

Objective 2 - (2) Held GMISS 09, with over 80 members of the private maritime industry attending. Final report due end of OCT09. / Attended various MDA conferences and workshops to outreach to the maritime industry, both domestic and international. (ISS, MIST, IALA, APEC)

Objective 3 - (3) Toured regional and international fusion centers. OGMSA in contact with over 24 centers. / Developing an article that highlights the information sharing successes that have been beneficial to the Hampton Roads area, a crossroads for Federal, Local, Military and industry interaction. /Faciliated info exchange between: DOS, DOC, DHS, DOD MDA EA.

Objective 4 - (3) Drafted NMATS charter / Developed & aided in implementation of SARCR program / Promoted Global Space Partnership to emphaise coin C-SIGMA

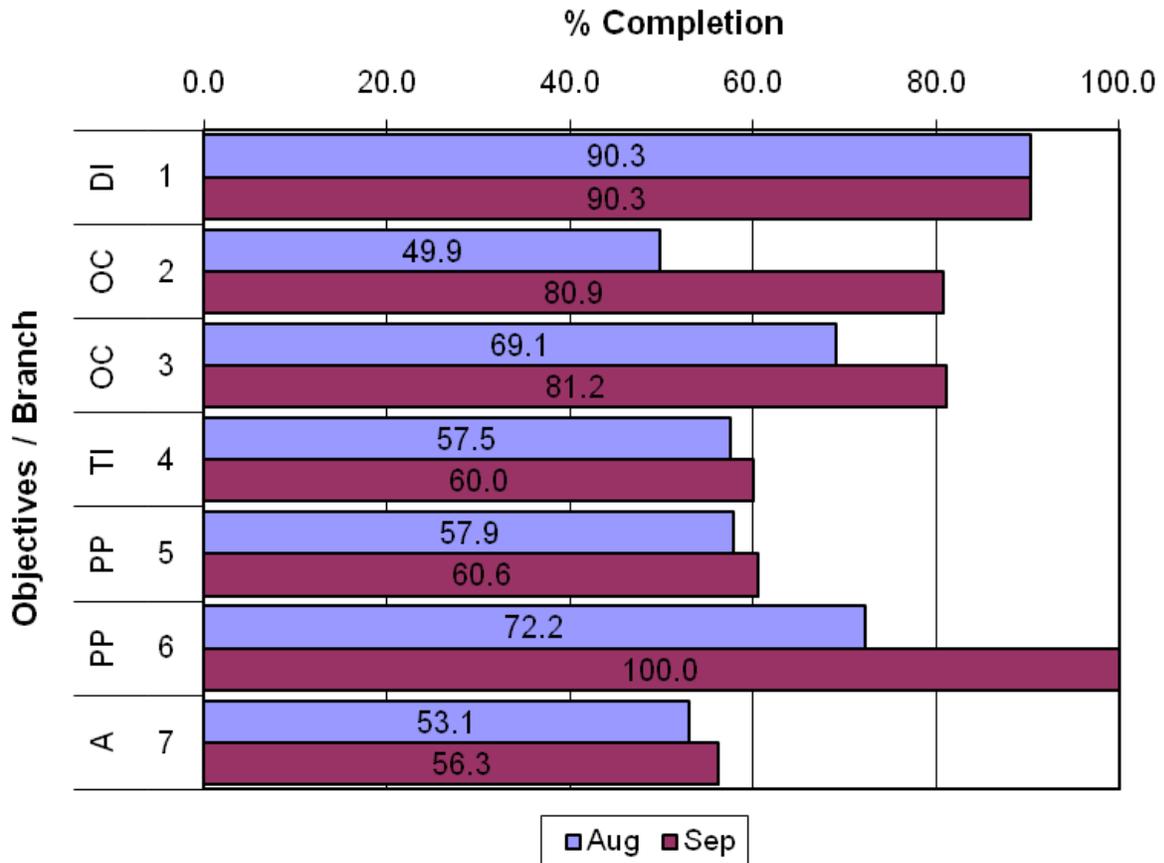
Objective 5 - (3) Held two Information Sharing Workshops / Held Information Hub Summit Meeting / Feedback to National Security Staff re: refocusing on implementation of NPAMDA, MDA CONOPS & IAIS.

Objective 6 - Presented monthly reports to OGMSA Branch Heads in support of objectives.

Objective 7 - N/A - objective consists of routine activities in support of OGMSA

Objectives Progress Δ

Depicts the change in progress towards completion of each objective from month to month.



Through Sept. 30, 2009

APPENDIX C

Interagency Investment Strategy (IAIS)

15 Critical Tasks

The National Plan to Achieve MDA established an MDA Implementation Team tasked with developing an Interagency Investment Strategy (IAIS). In developing the IAIS, the Implementation Team identified 74 MDA capability gaps, assessed them, and designated 15 for Tier 1 status, meaning either they were the most severe, or an investment would provide significant improvement in the U.S. ability to achieve MDA. The IAIS identifies the following 15 critical tasks to address these gaps.

1. Improve/establish interagency procedures to receive, process, assess and display information, provide tasking and support decision making across GMCOI
2. Enable network access to all designated nodes across the GMCOI
3. Implement Information Assurance (IA) and Cross Domain Security procedures across the GMCOI
4. Establish National MDA data standards and data strategy across the GMCOI
5. Improve the cooperation between DHS, DOD and DOT for analysis of cargo information and data
6. Upgrade the cargo screening process, especially for non-US bound cargo not entering or exiting a U.S. port
7. Analyze data and information in order to vet all crew and passengers for inbound, outbound and non-US bound voyages, as well as MIO
8. Develop a robust cross-agency global crew and passenger-vetting federated query capability
9. Improve both predictive and current operations analysis to determine which vessels are high risk and should be monitored or interdicted
10. Fuse and analyze all-source data to maintain tracks on small or uncooperative, non-emitting vessels and provide alerts for suspicious behavior
11. Provide critical fusion and analysis capabilities to accomplish near-real-time vessel identification and tracking to identify anomalous behavior and potential threat escalation from vessels operating in areas of interest
12. Collect all-source data for non-emitting vessels
13. Collect all-source data to facilitate the capability to access and display designated cargoes transiting internationally (not destined for U.S.)
14. Collect information on all vessel owners, operators, charterers, agents & commercial personnel inbound U.S.
15. Develop information collection requirements against threats to personnel, operations or infrastructure.

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APPENDIX D

MDA-Related Acronyms

| | |
|------------|--|
| ACE | Automated Commercial Environment |
| AIS | Automatic Identification System |
| AMOC | Customs and Border Protection Air and Maritime Operations Center |
| AMH | MDA Enterprise Architecture Management Hub |
| AOR | Area of Responsibility |
| APEC | Asian-Pacific Economic Cooperation |
| APIS | Advanced Passenger Information System |
| ASD | Assistant Secretary of Defense (DOD) |
| C-SIGMA | Collaboration in Space for International Global Maritime Awareness |
| CBA | Capabilities Based Assessment |
| CBP | United States Customs and Border Protection (DHS) |
| CBSI | Caribbean Basic Security Initiative |
| CI/KR | Critical infrastructure / key resources |
| CICTE | OAS Inter-American Committee Against Terrorism |
| CIP | OAS Inter-American Committee on Ports |
| CENTCOM | U.S. Central Command (DOD) |
| COCOM | Combatant Commander |
| COMNAVEUR | Commander U.S. Naval Forces Europe (DOD/DON) |
| COMPACFLT | Commander U.S. Pacific Fleet (DOD/DON) |
| CONOPS | Concept of Operations |
| COPS | DOJ Office of Community Oriented Policing Services |
| CMA | Comprehensive Maritime Awareness |
| CNA | Center for Naval Analysis (DOD/DON) |
| CTISS | Common Terrorism Information Sharing Standards |
| DHS | Department of Homeland Security |
| DHS MDA EA | Department of Homeland Security MDA Executive Agent |
| DIA | Defense Intelligence Agency (DOD) |
| DirGMAIL | Director of Global Maritime and Air Intelligence Integration |
| DirGMSA | Director Global Maritime Situational Awareness |
| DISA | Defense Information Systems Agency (DOD) |
| DLA | Defense Logistics Agency (DOD) |
| DOC | Department of Commerce |
| DOD | Department of Defense |
| DOD MDA EA | Department of Defense MDA Executive Agent |
| DOE | Department of Energy |
| DOJ | Department of Justice |
| DON | Department of the Navy (DOD) |
| DON CIO | Department of the Navy Chief Information Officer |
| DOS | Department of State |
| DOT | Department of Transportation |
| DOT MDA EA | Department of Transportation MDA Executive Agent |
| DTIC | Defense Technical Information Center (DOD) |

| | |
|---------|---|
| DTRA | Defense Threat Reduction Agency (DOD) |
| DUSN | Deputy Under Secretary of the Navy (DOD/DON) |
| EAF | Enterprise Architecture Framework |
| ESC | (MDA Stakeholder Board) Executive Steering Committee |
| FEACT | USCG Activities Far East (DHS) |
| GIS | Geographic Information System |
| GMAII | Global Maritime and Air Intelligence Integration |
| GMCOI | Global Maritime Community of Interest |
| GMII | Global Maritime Intelligence Integration |
| GMISS | Global Maritime Information Sharing Symposium |
| GMSA | Global Maritime Situational Awareness |
| GWT | Gross Weight Tonnage |
| HELCOM | Helsinki Commission of the Helsinki Convention |
| HSPD 13 | Homeland Security Presidential Directive No. 13 |
| HUB | Maritime Domain Awareness Information Enterprise Hub |
| IALA | International Association of Marine Aids to Navigation and Lighthouse Authorities |
| IAIS | [MDA] Interagency Investment Strategy |
| ICE | U.S. Immigration and Customs Enforcement (DHS) |
| ICC | Intelligence Coordination Center (DHS/USCG) |
| ICE | Immigration and Customs Enforcement (DHS) |
| IFC | Information Fusion Centre (Singapore) |
| IMO | International Maritime Organization |
| IOC | Interagency Operations Center |
| IPL | Integrated Priority List |
| IPS | (USCG) International Port Security Office (DHS) |
| IAIS-SC | (MDA Stakeholders Board) Interagency Information Sharing Subcommittee |
| IASA | Interagency Solutions Analysis |
| IASA-WG | Interagency Solutions Analysis Working Group |
| ISE | Information Sharing Environment |
| ISSC | (MDA Stakeholders Board) Information Sharing Subcommittee |
| ISWG | Information Sharing Working Group |
| ITDS | International Trade Data System |
| JCTD | Joint Capability Technology Demonstration |
| JHOC | Joint Harbor Operations Center |
| JIATF-S | Joint Interagency Task Force – South |
| JIATF-W | Joint Interagency Task Force – West |
| JIC | Joint Integrating Concept |
| JTF-N | Joint Task Force North |
| LRIT | Long Range Identification and Tracking |
| LOE | Limited Objective Experiment |
| MARISX | Maritime Information Sharing Exercise |
| MARAD | Maritime Administration (DOT) |
| MarView | Marine View |
| MASTER | Maritime Automatic Super Track Enhanced Reporting |

| | |
|------------|--|
| MDA | Maritime Domain Awareness |
| MDA CONOPS | National Concept of Operations to Achieve MDA |
| MIEM | Maritime Information Exchange Model |
| MIST | Maritime Information Sharing Taskforce |
| MOA | Memorandum of Agreement |
| MOC | Maritime Operations Center |
| MOU | Memorandum of Understanding |
| MSIPC | Maritime Security Interagency Policy Committee |
| MSPCC | Maritime Security Policy Coordinating Committee |
| MSSIS | Maritime Security Safety Information System |
| MSWG | Maritime Security Working Group |
| MTSA | Maritime Transportation Safety Act |
| NAIS | National Automatic Identification System |
| NAMSI | North American Maritime Security Initiative |
| NAVAIR | Naval Air Systems Command (DOD/DON) |
| NCIS | Naval Criminal Investigative Service (DOD) |
| NCTC | National Counterterrorism Center |
| NICC | National Infrastructure Coordinating Center (DHS) |
| NIEM | National Information Exchange Model |
| NMATS | National Maritime Awareness Technical Sub-Committee |
| NMIC | National Maritime Intelligence Center |
| NOC | National Ocean Council |
| NOC | National Operations Center |
| NOAA | National Oceanic and Atmospheric Administration (DOC) |
| NORAD | North American Aerospace Defense Command (DOD) |
| NORTHCOM | U.S. Northern Command (DOD) |
| NPAMDA | National Plan to Achieve MDA |
| NPS | Naval Postgraduate School (DOD) |
| NRO | National Reconnaissance Office (DOD) |
| NRL | Naval Research Laboratory (NRL) |
| NSA | National Security Agency |
| NSMS | National Strategy for Maritime Security |
| NSPD 41 | National Security Presidential Directive No. 41 |
| OAS | Organization of American States |
| ODNI | Office of the Director of National Intelligence |
| OIP | Office of Infrastructure Protection (DHS) |
| OGMAII | Office of Global Maritime and Air Intelligence Integration |
| OGMSA | Office of Global Maritime Situational Awareness |
| ONI | Office of Naval Intelligence (DOD/DON) |
| ONR | Office of Naval Research (DOD/DON) |
| OPNAV | Office of the Chief of Naval Operations (CNO) |
| OSD | Office of the Secretary of Defense (DOD) |
| PACOM | U.S. Pacific Command (DOD) |
| PACFLT | U.S. Pacific Fleet (DOD) |
| PAIS | Profile and Architecture Implementation Strategy |
| PM-ISE | Program Manager, Information Sharing Environment |

| | |
|----------|---|
| PSI | Proliferation Security Initiative |
| RITA | Research and Innovative Technology Administration (DOT) |
| RMAC | Regional Maritime Awareness Capability |
| SAARPSCO | South Asia and Africa Port Security Cooperative |
| S&T | Science and Technology |
| SARCR | Shipboard AIS and Radar Contact Reporting |
| SAR | Suspicious Activity Report |
| SEMAR | Secretaria de Marina Armada de Mexico (Secretariat of the Navy, Mexico) |
| SHB | [MDA] Stakeholder Board |
| SOA | Service Oriented Architecture |
| SOLAS | (International Convention for the) Safety of Life at Sea |
| SOUTHCOM | U.S. Southern Command (DOD) |
| STRATCOM | U.S. Strategic Command (DOD) |
| TENCAP | Tactical Exploitation of National Capabilities |
| TEXAS | Technical Exchange on AIS via Satellite |
| TSA | Transportation Security Administration (DHS) |
| TWIC | Transportation Worker Identification Card |
| USCG | United States Coast Guard (DHS) |
| USFF | U.S. Navy Fleet Forces Command (DOD) |
| USG | United States Government |
| USN | United States Navy (DOD) |
| USNAVSO | U.S. Naval Forces Southern Command (DOD) |
| VCPI | Vessels, Cargo, People, Infrastructure |
| V-RMTC | Virtual Regional Maritime Traffic Center |
| VRMTC-A | Virtual Regional Maritime Traffic Center - Americas |

**Additional information is available at
www.gmsa.gov**