A FRAMEWORK FOR ENHANCED INTERNATIONAL MARITIME SECURITY COOPERATION AND AWARENESS

Executive Summary

The development of standards for safe navigation, communication, and operation of maritime shipping has long been an area of international cooperation. International maritime security cooperation has now become a necessary step in dealing with increasing crime such as piracy, terrorism, illicit trade and illegitimate exploitation of marine resources. Increased security depends on co-ordinated security awareness and broader collaboration in response to maritime threats.

Security awareness is largely the responsibility of different national agencies in a domestic setting. In some nations, there are explicit oversight or co-ordination centres. To achieve awareness at a regional or even global level, many of the functions currently managed by individual nations will have to be undertaken by organizations which will enable all stakeholders to operate more efficiently and effectively together. One model for understanding maritime security cooperation and awareness (MSCA) organizes activities in layers:
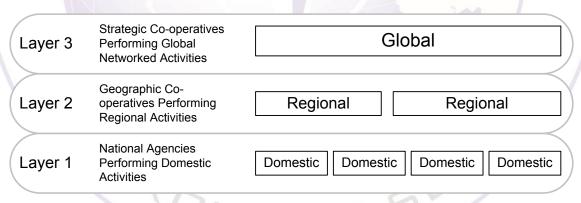

Figure 1. The Layers of Maritime Security Cooperation and Awareness (MSCA)

International governance architectures often form in response to a need to coordinate behaviour among countries around an issue such as maritime security. In the absence of an overarching governance organization, countries would have to align and coordinate activities, such as internet domain names and cellular telecommunications through numerous bilateral agreements, which would become impossibly complex to administer worldwide. Fortunately, international organizations such as, the Internet Corporation of

Assigned Names and Numbers (ICANN) and the International Telecommunications Union (ITU) serve simultaneously as a forum, a multilateral treaty, and a governing body to standardize these activities globally.

Given the plethora of maritime security initiatives which are now rapidly evolving in many nations and regions around the world, the challenge of linking the best of these diverse processes to form an effective international framework for maritime security cooperation and awareness is compounded by differing cultural norms, political agendas and technical standards. Given the inherent linkage of maritime safety and security, international co-operation in these activities could follow one of several conceptual models which could successfully close the gaps and provide effective global maritime security cooperation. A prime example where success has been achieved is in the civil air industry. The International Civil Aviation Organization (ICAO), founded by like-minded states, was originally designed to improve air safety standards. It has also achieved great success in sharing information and setting new security standards for passengers and air cargo worldwide to counter the growing threats from hijacking, terrorism and air piracy. There is no reason why this same conceptual approach would not work for maritime transportation.

Enhanced maritime security begins with a framework of domestic law enforcement and defence activities coordinated amongst various national agencies. This collaborative framework extends individual mandates and collective interests to facilitate broader co-operation for geographic regional activities, and can culminate in intra-regional global initiatives.

The enablers for greater maritime security cooperation and awareness (MSCA) include:

1. Consolidated Legal and Policy Strategies
   impeded by:
   Legal Obstacles
   Policy Obstacles
   Information Classification/Security Obstacles
2. Information Sharing
3. Data/Information Standards
4. Surveillance and Technology
5. Commercial Interests
6. Inter-Organizational Relationships

Figure 2. Enablers for Maritime Security Cooperation and Awareness (MSCA)

Whether operating at a domestic level, or a global level, any initiative for MSCA must tackle the difficult legal and policy issues which surround agency responsibility and co-ordination with other domestic or international groups. Sovereign governments must confirm that it is in their national interest to work with neighbouring states and commercial or non-governmental agencies to improve maritime security.

Timely and effective information sharing must remain a central priority for the stakeholders who have a responsibility to inform and update information in line with desired operational outcomes. These networks must link constabulary with military networks where it makes good operational and economic sense to do so. There are practical concerns on how such information is to be structured electronically and securely managed. In many ways, new surveillance and communication technology is making MSCA more feasible, but such improvements carry with them the challenges of expense and increased complexity for establishing the requisite infrastructure that not all national partners can afford. Commercial maritime organizations have a vested interest in improved maritime security (since it directly impacts their costs and risks) but companies must often be convinced that their participation in MSCA initiatives will offer real affordable benefits within clear regulatory structures. Finally, co-operation between current regional MSCA initiatives leverages the trusted relationships built between participants over many years of operation.

The growing number of national and regional initiatives creates independent systems and processes which detract from common standards. Through alignment of best practices, implementation of these enablers can provide a framework for superior maritime security cooperation and awareness on a global scale. Selecting the coordinating body for such a large undertaking must be made through consensus formed by all participants. This international community of interest will determine activities such as surveillance and information requirements, as well as, establish standards for the tools and applications needed to share and conduct collaborative risk assessments. The key objective here is aligning and linking the broad spectrum of maritime security capabilities which will enable the relevant agencies to rapidly sort through volumes of data to quickly assess the appropriate level of response to deal with a specific threat.

The United Nations, as an international body with a reputation for impartiality among many participants, is an obvious choice for facilitating, providing legitimacy to, but not necessarily executing, global MSCA. Cooperation promotes a convergence of national strategic and security interests. International institutions help facilitate alignment of interests and provide a forum for establishing a reputation for implementing the efficient employment of complex strategies.

The International Maritime Organization (IMO) Maritime Security Directorate has a mandate which fits closely with enhancing international maritime security. It is a logical candidate for consideration as a facilitator for aligning processes and coordinating standards that enable regions to build on existing international cooperative frameworks to achieve global MSCA, leading to improved maritime security.

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"Experience demonstrates that multilateral cooperation arrangements, between and among States, regions and institutions, can provide the means to reduce the risk of unprovoked attacks on innocent ships, including through coordinated patrols in high-risk areas; information sharing and training; intelligence exchange; and hot pursuit, following attacks. Let us maintain and increase our efforts to do so."[1]

Mr. Efthimios E. Mitropoulos, IMO Secretary-General,
Address at the UN General Assembly, May 2010

Introduction

Transnational maritime crimes such as piracy, illicit trafficking (weapons, drugs, money, humans or other contraband), terrorism, threats to the environment and aggressive exploitation of resources, affect all nations. The collective efforts of many nations and organizations are needed to counter these threats to the Maritime Commons.[2] No single nation can address this task alone. Where powerful states once provided governance across seas and oceans, there is now a need for all states to play a role in maritime security.

International organizations often form in response to a need to coordinate behaviour among countries around a critical issue, such as the growing need for better maritime security cooperation through established regimes. A regime is defined by Stephen D. Krasner as a set of explicit or implicit "principles, norms, rules, and decision making procedures around which actor expectations converge in a given issue.[3] Regime theory states that cooperation in anarchy is possible without a hegemon because there exists a "convergence of expectations". When these processes are well embodied in consensual policies and consent with respect to agreed standards a measure of confidence is achieved and cooperation is sustained.

The foundation of maritime security is Maritime Security Cooperation and Awareness (MSCA). MSCA collates information on potential threats within a dynamic maritime environment. At the moment, unique sources of data and intelligence information available

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[1] Statement made by Mr. Efthimios E. Mitropoulos, Secretary-General of the International Maritime Organization, General Assembly Informal Meeting on Piracy, United Nations Headquarters, New York, 14 May 2010

[2] The Maritime Commons comprise seas and waterways either beyond sovereign control of any nation, or under the shared sovereignty of two or more nations.

[3] Krasner, Stephen D. 1982. "Structural Causes and Regime Consequences: Regimes as Intervening Variables." International Organization 36/2 (spring). Reprinted in Stephen D. Krasner, ed., International Regimes, Ithaca, NY: Cornell University Press, 1983

within the maritime environment are managed through various domestic, regional and international organizations that possess either a defence mandate, a law enforcement mandate, or involve corporate interests. Although no single entity has a requirement to know or see all the information, all of the time, there are instances when a collaborative and coordinated effort among various agencies and authorities is needed in order to mitigate risks and quickly respond to maritime threats. Given the alarming proliferation and adaptability of criminal and piracy activities, particularly terrorists who are intent on employing a potential weapon of mass destruction, the flow of information must work seamlessly between constabulary and military security networks.[4] Jurisdictional constraints may, in fact, limit the type, source or sensitivity of information, but when there is an operational imperative to share critical time sensitive information - establishing better MSCA now is a critical step to preserving maritime security in the future.

Timely and accurate information is needed to make rational and informed decisions, especially in situations where a potentially serious threat must be immediately resolved. MSCA leverages information from various sources in order to support the decision making process. What is most important is recognition of the fundamental requirement that agencies and/or governments have both a moral responsibility and vested interest in sharing appropriate levels of information and intelligence, so that other organizations may act and lead if necessary.

This paper proposes the establishment of an enhanced global framework for international maritime situational awareness and security cooperation. It will reference ICAO's role in air transportation, simply to illustrate a well-recognized conceptual model for security cooperation in international transportation. Although this governance model is specific to the air domain, a similar conceptual framework specific to the Maritime Commons is both timely and necessary to preserve the flow of global maritime commerce. The evolution of a layered approach of national and multinational agreements is necessary to reach the desired level of cooperation. The primary elements or "enablers" of MSCA will be outlined.

Finally, the paper recommends the establishment of an international organization to facilitate alignment of processes and standards for maritime security cooperation. This will help promote an integrated domestic and regional approach to maritime surveillance and information sharing. This proposed international framework should not exercise operational control over maritime security operations at the regional or domestic level. It merely sets in place the conditions for success which permit more effective and efficient sharing of information. It further establishes a "standardized" framework for nations and

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[4] Based on observations made during the Maritime Security Data Sharing Panel, offered by Mr. Stephen Ewell, Executive Director ECJ6United States European Command, during Maritime Security Conference 2011, Kiel, Germany, 5 May 2011.

regional cooperative organizations to emulate as they address immediate or evolving threats which compromise their right of access to the maritime commons.

A Layered Approach to Maritime Security Cooperation and Awareness (MSCA)

In recent years, MSCA has grown from local or domestic initiatives into a layered set of activities which rely on national, regional and pan-regional organizations to facilitate information collection, collation and dissemination. Formal and informal agreements have created cooperative organizations which share best practices and have created trusted relationships that promote the limited exchange of data and information.
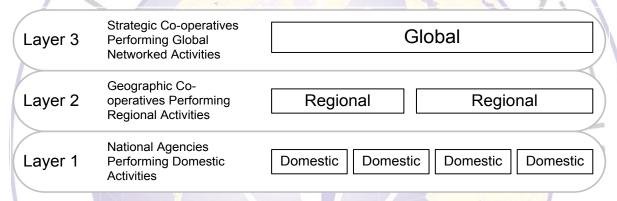
Layer 3	Strategic Co-operatives Performing Global Networked Activities	Global			
Layer 2	Geographic Co-operatives Performing Regional Activities	Regional		Regional	
Layer 1	National Agencies Performing Domestic Activities	Domestic	Domestic	Domestic	Domestic

Figure 1. The Layers of Maritime Security Cooperation and Awareness (MSCA)

As illustrated in Figure 1, MSCA consists of:

Layer 1: National Agencies Performing Domestic Activities.

The first stage of situational awareness begins in territorial waters. Steps toward national MSCA are achieved when agreements and relationships are established to share the appropriate information in a timely manner between governmental agencies possessing a maritime law enforcement mandate (coast guard, fisheries, customs, or federal/municipal police forces), and non-governmental entities (port authorities, insurance companies, and commercial maritime firms). This information can be obtained from a number of tiered reporting sources (self-reported, satellite, ship sensors, coastal surveillance stations, local port and maritime authorities' reports, or shipping and insurance companies' data bases) and should be shared using standardized procedures. In some nations, a central interagency information sharing centre - or a network of centres - collects this information

and translates it into timely, actionable intelligence. A risk assessment can then be conducted to determine the threat to local/regional areas or national security. If it is necessary to take action, a lead agency is identified to coordinate a balanced and effective response with the support of other assigned agencies and resources.

Layer 2: Geographic Cooperatives Performing Regional Activities

Once national MSCA is established, the next layer extends situational awareness beyond territorial waters. Currently nations employ a limited number of formal, informal and ad hoc relationships with their neighbours to gather information and coordinate actions to secure the maritime commons. These regional cooperatives are generally oriented toward specific threats affecting nations in the region, or apply to areas near the nine key maritime choke points in the world.[5]

In establishing regional information sharing relationships, partners must understand the requirement and responsibility to share the necessary information as it applies to resolving an imminent threat. A specific list of desired information to be exchanged must be standardized and universally accepted by all parties. Also, it must be clear to all stakeholders how the information will be protected from non-compliant actors, and how and when this information would be used in law enforcement or defensive actions. Similar to the case of national situational awareness, the exchange of information should be tied to the use of standard protocols and classification criterion that allows a common understanding of the situation.

Layer 3: Strategic Cooperatives Performing Global Networked Activities

A logical extension of the regional MSCA cooperative is to reach beyond geographical boundaries and share situational awareness at strategic distances. Establishing a Global Maritime Security Network would be the most beneficial form of future cooperation. Such a network, or collection of networks, could be informal at first, but once established could provide benefits far beyond those of multilateral arrangements. Cooperative organizations often arise through the leadership or initiative of a strong state or institution, yet a network can evolve without a centre or focal point - provided the network architectures and data formats are standardized. Increasing the number of agreements within the region would expand the network and bind regional states through closer cooperation. An initial step in

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[5]Suez Canal, Panama Canal, Straits of Hormuz, Malacca Straits, Bab Al Mended Straits, Turkish Straits, Dover Straits, Mozambique Channel, and Straits of Gibraltar.

creating a Global Maritime Security Network would be to work toward networking many of the bilateral or regional MSCA cooperatives in existence today.

At the centre of this requirement for a global network are the sovereign rights and obligations of a nation to monitor and control security conditions in their territorial waters and the extended sea approaches leading to their coastlines. Nations will benefit from a cooperative, layered, global approach to MSCA, particularly through the identification of emerging risks at extended ranges. Using global networks, nations could assess and address immediate threats or involve regional partners, especially when the threat exceeds the capacity of any individual nation to deal with effectively.

Engagement at every level in this network of networks has to be driven by a strategy. In most cases concerning maritime security, that overarching strategy is currently absent. When the underlying governance theme for organizations is discussed, a comprehensive strategy for creating multi-layered governance structures at global, regional and national levels must be included. Governance requires significantly different approaches at global, regional and national levels.

Governance on a global level effectively means governance by consent and by consensus. The need for consent drops dramatically when addressing governance at a domestic level where a reliable legal framework exists. The need for public legitimacy of that framework, however, increases.[6]

Enablers for Maritime Security Awareness

Having outlined a layered model of Maritime Security Cooperation and Awareness, scaled from the national to the global level, there are a number of "enablers" which help build and shape MSCA at all levels. Each of these enablers comprise an area of interest which require the attention of participating parties in order to further international maritime security cooperation. Some of these enablers relate closely to each other, but each has specific characteristics which are discussed below.

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[6] Observations on Maritime Security Governance Panel, offered by Ms. Michelle Hughs, senior Rule of Law Advisor to Deputy Commander - Police NATO Training Mission - Afghanistan, during Maritime Security Conference 2011, Kiel, Germany, 05 May 2011.

1. Consolidated Legal and Policy Strategies

impeded by:

Legal Obstacles
Policy Obstacles
Information Classification/Security Obstacles

2. Information Sharing
3. Data/Information Standards
4. Surveillance and Technology
5. Commercial Interests
6. Inter-Organizational Relationships

Figure 2. Enablers for Maritime Security Cooperation and Awareness (MSCA)

1. *Consolidated Legal and Policy Strategies*[7]

There is a compelling reason for nations seeking international Maritime Security Cooperation and Awareness to promote information sharing and to overcome internal caveats to allow the free exchange of this data with their partners, especially when dealing with potential threats. As a general rule, most nations are able and willing to share, however, there can be considerable obstacles to sharing of maritime information that need to be addressed. These obstacles generally fall into at least one of three categories:

a. **Legal Obstacles** – National legislation which may prevent civilian agencies from sharing information (about individuals, companies, cargo, and ship identifiers) with the military or with other governments. In many cases, the privacy laws of nations do permit the sharing of this information for reasons of national security. Information from commercial sources often cannot be shared with third parties due to licensing and contractual restrictions. Information used in an ongoing criminal investigation or judicial proceedings may not be accessible either. Additionally, misinformed data handlers may have erroneous perceptions or opinions about other interpretations of international or pan-national laws (such as European Union laws and directives) which can severely impede the sharing of critical information.

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[7]The content of this paragraph is inspired in the lecture "The Legal Aspects of Information Sharing" given by CDR US Kimberlie Young (LEGAD SACT) at CJOS COE Lisbon Maritime Security Conference May 2010, and the subsequent Maritime Situational Awareness Phase I Legal Study Report (NATO SACT HQ Legal Affairs Office, 01 SEP 2010).

b. **Policy Obstacles** – Cooperating nations and organizations need to understand why information must be shared in order to develop policies for information exchange. Partners must trust each other to <u>use</u> the shared data for commonly agreed purposes. There are formidable challenges in educating political leadership and the public on the significance of maritime security. There must be a political willingness to share if success is to be achieved. To support this willingness, partners must have appropriate levels of data protection in place to protect sensitive information and must be able to keep that information from non-compliant actors. Clearly defined ownership[8] of data shared among states must include provisions to establish how the data is safeguarded as it passes among nations.

c. **Information Classification/Security Obstacles** – Generally this includes information about sensors, sources, quality indicators, deployment schedules, routine patrol areas, etc. Caveats on the release and sharing of classified information, either nationally or within an alliance, can halt or slow the exchange of this data. Additionally, local misconceptions as to the meanings of security classifications can cause data which is otherwise releasable, to be withheld.

When considering the exchange of maritime information, nations need to continually address questions such as:

(a) What are the arguments for sharing information?

(b) What information needs to be shared?

(c) Is the nation legally able to share that information?

(d) What barriers exist that prevent the nation from sharing that information?

(e) What can be done to overcome these barriers?

Nations must establish the necessary protocols to allow information to be exchanged with partners, subject to applicable national regulations governing the release of personal, commercially sensitive, or classified information. They must determine what role their

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[8]Defined ownership refers to the originator of the data and information. If an external agency chooses to add additional information to refine or update the original report, the originating party should be entrusted to be informed as to why their data/information was modified.

military plays in maritime security issues. Where will each nation draw the line between maritime security (law enforcement) and defence-related threats?

In the final analysis, nations have a responsibility to share information internally and externally when there is a significant threat to its own (1) commercial and national interests, (2) regional partners and (3) the maritime commons at large. The general consensus among maritime law experts is that the current body of international law and national legislation provides a sufficient - but not totally satisfactory - basis for the planning and conduct of maritime security cooperation. While there is room for improvement in international law, nations may wish to consult with national legal authorities and to review current practices for facilitating mutual cooperation and operational harmonization with partners.

2. *Information Sharing*

Maritime security cooperation requires a major cultural change for many countries. Adopting a level of information transparency and securing a level of trust may make some nations uncomfortable, or worse, cause them to be openly opposed to any appearance of softening their sovereign rights. A secure maritime environment, however, can only be achieved when information is shared among appropriate agencies and partners in a comprehensive manner.[9]

Key to this cooperation is a willingness to close - or mitigate - the "seams" or "gaps" that currently exist at the national, regional and international levels of maritime security cooperation. These seams are largely due to cultural attitudes towards information sharing and can occur at many government or non-government levels. Each seam represents a potential lapse in awareness which can mask potential threats.

Seams may take many forms. They can represent the gaps in information exchange:
- between nations;
- between military and civil authorities;
- between international organizations, governmental organizations or non-governmental organizations;
- between alliances/cooperatives and non-participating nations;
- between operational headquarters and tactical commands;

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[9]The Comprehensive Approach to maritime security operations can be defined as the synergy amongst all actors and actions of the International Community through the coordination and de-confliction of its political, development and security capabilities to face today's challenges including complex emergencies.

- within the implementation of technical interfaces,
- in the application of conflicting or non-complimentary rules of law, or in military parlance - variability in rules of engagement; or
- between regions (actions that occur in one region and spill over to another region).

Seams, or gaps, can also create misinterpretation of information that leads to improper employment of resources to deal with a threat, or worse still, a complete lack of resources.

The greatest impediments to information sharing –and conversely, the best approaches to closing seams in MSCA - are neither technical nor procedural. They are institutional and cultural. In order to achieve the required level of situational awareness, all stakeholders will need to implement a "responsibility-to-share" philosophy in their mandated practices and actively work to identify and mitigate the obstacles encountered in sharing information. Some have developed practices, policies or procedures to overcome these difficulties. These practices should be built upon, refined and shared globally to help participating nations and organizations to overcome similar barriers.

3. Data/Information Standards

Standardization provides the foundation for the global exchange of maritime data and information. It removes ambiguities and identifies inconsistencies in the reported information which, in turn, could lead to poor decision-making. Some standards currently exist and are managed by organizations such as the International Maritime Organization (IMO). These apply to the data transmitted through shipboard Automatic Identification Systems (AIS) and the Long Range Identification and Tracking (LRIT) service.

A global set of standards and best practices for the exchange of comprehensive maritime information is needed to support and build situational awareness among global maritime interests. Safety and security protocols have been established for the civil air transportation system through the efforts of the International Civil Aviation Organization (ICAO). A similar convention to support a set of international maritime standards and governance for maritime situational awareness and security is also necessary.[10]

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[10]Recognizing the need to prevent emerging terrorism in the air, ICAO took the necessary action to introduce legislation and implement strategies to counter this threat. Senior government representatives from 154 countries endorsed a new strategy to improve airline security. The system was implemented by national governments and ICAO, which then assumed responsibility for follow-up programs to help rectify deficiencies identified through regular audits.

Further standards are needed that define how regional security centres will operate across the strategic landscape of maritime awareness. This includes defining data formats, system exchange protocols, the categorization of Vessels of Interest (VOI), training programs and standardizing classification processes that will facilitate information transfer while considering policies for safeguarding information.

4. Surveillance and Technology

While surveillance provides the source of maritime data, technology provides the means to conduct the surveillance, to facilitate the transfer of that data, and transform the data into meaningful, actionable maritime awareness information. Surveillance is generally a national activity and the data collected through surveillance provides the foundation for maritime security awareness. Two requirements of MSCA data collection often overlooked are (1) presence and (2) persistence of surveillance activities. MSCA is only achievable over areas of the marine environment where there is a collection presence. That presence must be persistent over time in order to track vessel movements, perform trend analysis and identify anomalies.

The conduct of surveillance and patrolling on the high seas, and the sharing of information gathered in support of law enforcement and in accordance with international law or applicable treaties, must be addressed and coordinated among partner nations. The allocation of limited surveillance resources and the distribution of maritime information should be managed among nations and through regional maritime security cooperatives.

Current Maritime Situational Awareness (MSA) technology focuses on the products of two shipboard systems which were not originally developed for persistent maritime awareness. Both the AIS and LRIT systems are self-reporting and were primarily developed to support collision avoidance and safety at sea respectively. The information that each of these systems transmits, contributes to comprehensive MSCA. They are self-reporting, however, and susceptible to "spoofing"[11] (and in some cases restricted to line-of-sight). They do not provide a comprehensive, dependable maritime picture. Additional data is needed from other sources.[12] Systems are being developed which can ease the workload on the user by automatically detecting anomalies in tracks, managing system alerts and collating VOI information.

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[11] "Spoofing" is hiding ones' identity.

[12] Sources of data and information include radar, electro-optical sensors, acoustic sensors, space-based sensors, ground based, air or satellite imagery, Vessel Monitoring Systems (VMS), Vessel Traffic Management Services (VTS), commercially available data sources, and any number of national or multinational intelligence sources.

Acquisition of the technology to support the exchange of data is primarily driven by national requirements rather than international desires. Given that there is an overarching need for these technologies to be interoperable with those of other nations or multinational organizations, commonly accepted standards (as discussed in the previous section) are important. Technology is constantly evolving to support maritime awareness. In order to remain valued international contributors to maritime security, nations would be expected to upgrade maritime awareness suites as technological improvements become available and other systems become obsolete. This ongoing evolution of systems is a continuous source of friction in achieving maritime interoperability. New systems can bring new data standards. As new technological capabilities are brought on-line, care must be taken to ensure ongoing compatibility amongst MSA legacy tools, especially in the areas of nation-to-nation or nation-to-alliance information exchange.

There is no need to re-invent the wheel in terms of establishing new architectures. Existing maritime security organizations and inter-agency networks can be leveraged. To enable trans-regional cooperation, a global network for information sharing and collaborative planning should leverage existing commercial technologies which employ robust encryption and data protection standards.

To this end, an effective international architecture for the exchange of baseline maritime information should be developed independently of technological platforms. If nations acquire new technologies, they should try to conform to the standards of this international MSCA architecture.

5. *Commercial Interests*

There is little debate about the importance of keeping commercial sea lanes safe. More than 90% of world trade is shipped by sea, and communications cables on the seabed carry 95% of the world's cyberspace traffic. There is a growing concern that any threat to the free flow of shipping or information will threaten the global economy, no matter where in the world it occurs or what part of the economic chain (resources, manufacturing, supply or consumer) is disrupted.

In addition to the threat of economic disruption, commercial maritime interests can be compromised by illicit supply chains run by organized crime and terrorist elements. World trade is a complex network of networks that few fully understand. Commercial participation in MSCA mitigates potential costs incurred during disruption of trade networks. Applying law enforcement pressures on illicit supply chains which compete with

legitimate enterprises or which threaten the security of the state is dependent on the information that is only available to commercial organizations.

An obvious concern of the shipping industry is safety and security of crews, vessels and cargos. Safety systems, such as AIS, can inadvertently provide information to criminals, such as pirates or hijackers, and compromise vessel security. Shipboard safety systems have the ability to receive as well as transmit information. Processes that leverage the regional and global flow of MSCA information, and synthesize it into local, timely intelligence updates for the benefit of merchant shipping traffic is a first step in controlling risk, and cost. Such systems would allow vessel masters and shipping companies to construct a local maritime picture and take mitigating action as necessary.

A well aligned maritime regulatory and security cooperation system based on the voluntary exchange of commercial maritime information will promote, not impede, today's intermodal marine transportation system. Benefits for commercial interests include standardized regulatory compliance which provides faster turnarounds with greater cost savings. Continuous information sharing with coast guard, port and customs authorities throughout a voyage could lead to less time in port and to a more efficient movement of goods. Commercial organizations have a strong incentive to be involved in MSCA to protect and promote their interests.

6. *Inter-Organizational Relationships*

The critical element of MSCA is the ability and willingness to share information by partners. Whether among agencies within a given nation, with similar counter-parts in regional cooperatives, or in a global alliance, the creation and maintenance of trusting relationships to foster the exchange of maritime data and build operational cooperation is a fundamental requirement.

However, the need for maritime security cooperation and governance is not fully understood. A clear rationale must be provided to politicians, law enforcement agencies, coast guards, navies, and the broader public. Navies, in collaboration with maritime law enforcement agencies, are effective enablers of MCSA. This reality must be reflected in each national and regional analysis which incorporates a holistic approach to:

- Support and sustain the rule of law
- Support and sustain global economies; and
- Support and sustain global development

Several cooperative maritime security organizations that are currently in operation have incorporated the above themes into their own regional analysis -it justifies the need for

improved international relationships. Like minded nations converge on a collective need to assure access to the maritime commons and adopt a collaborative approach to preserve safety and security on the high seas. In Europe, regional organizations such as the BLUEMASSMED, an EU project comprised of six Mediterranean nations; or the Sea Surveillance Co-operation Baltic Sea (SUCBAS) involving all the Baltic Sea countries except Russia; are at various levels of maturity and are experimenting with information exchange within their own regional cooperatives. In the Americas, ROCRAM is the Operative Network for Regional Co-operation among Maritime Authorities of the Americas and includes many South and Central American countries. While its founding purpose in 1983 was economic, it has recently begun to focus on MSCA and information sharing. The South Asia and Africa Regional Port Stability Cooperative (SAARPSCO) is a new organization that is working to promote global maritime governance and supply chain safety. While primarily focused on the economic impact of MSCA, the organization has a wide variety of members in the Middle East, Africa, and Asia and is working toward developing an improved communications and data-sharing framework.

A number of regional partnerships are positioning themselves to work towards the sharing of MSCA tasks, resources and information with other regional organizations, thus creating the beginnings of a "Layer 3" in a proposed Global Framework for Maritime Security Cooperation and Awareness.

Noting all these efforts, it is apparent that the time has come to codify maritime security standards and align policies across a broad framework of like-minded states and interested partners.

Maritime Security Cooperation Best Processes – Leveraging Enablers to Build a Framework for MSCA

Each of the six MSCA enablers discussed in the previous section have already been addressed in some measure by various maritime organizations. Employment of best processes in each of these cases can assist nations or organizations in understanding:

- the responsibilities of participating states in a MSCA alliance;
- the roles of international and regional governance;
- defining shared objectives;
- standardization of policies and reporting procedures;
- the commonalities of existing governing infrastructure requirements and their associated capabilities and limitations;

- the organizational challenges and limitations;
- the interfaces with existing regional structures;
- the guidelines for coordinating integrated surveillance and enforcement operations; and
- the incentives for participating in a MSCA framework.

These best processes should be captured, validated and shared amongst maritime security awareness initiatives. These processes, along with lessons learned and standardizations in training, policies and procedures, will set the stage for a strategic framework for security cooperation among willing nations. This framework can be codified into formal agreements, or simply implemented via *ad hoc* arrangements, depending on the levels of willingness to share information by the participating nations.

Less advantaged states would have a framework model to help them achieve a greater level of interoperability without investing significant time and resources. The objective is to make the best and most effective use of existing regional networks, while helping other national or regional centres to focus their development strategy through a set of well-defined international standards. Participating states and the commercial sector would achieve greater efficiencies in addressing maritime security concerns which would lead to improved economic gains.

A Strategic Framework for Enhanced International Maritime Security Cooperation and Awareness

While the challenges that face developing global MSCA are significant, they are not insurmountable. The time is right for the international maritime community to seek the leadership of a host organization to actively manage these efforts with the overall objective of building a standardized international strategic framework for maritime cooperation.

An international maritime security governance body taking on this important leadership role would facilitate the linking of regional maritime security organizations into a standardized global network. It would define standards and structures for maritime security, information sharing, training, reporting and technical interfaces. The organization would work to establish a baseline international architecture for maritime information exchange. From that architecture would emerge a framework for exchange agreements, including defining data exchange protocols and procedures for exchanging information, policies for safeguarding classified information and for protecting personally or commercially sensitive information.

Additionally, this organization would provide leadership in coordinating regional organizations for specified maritime areas, or developing plans of action for ungoverned maritime areas that require civil agencies and organizations to deliver their unique capabilities. It could establish guidelines for regional planning and coordination of key transportation hubs, straits and international waterways, as well as stringent reporting requirements for transiting vessels. It would also be the impartial voice of international maritime security to the commercial maritime industry.

Finally, this organization could leverage and disseminate best practices of current regional structures on which to mode the experience of existing structures. These best practices would be captured, validated, and shared across the span of maritime awareness organizations. These practices, along with lessons learned and standardizations of training, policies and procedures, will set the stage for a strategic framework for security cooperation among willing maritime nations.

The question remains. Which organization is best suited for the role?

A Role for the United Nations and IMO

Clearly the organization that assumes this responsibility must be international in stature and legitimacy, and appear impartial to all participants. An obvious choice for an organization to assume this leadership role would be the United Nations.

The UN has two specialized agencies which provide a standardization and regulatory framework to the international transportation sectors. The proposed governance for an international maritime security cooperation organization structure could resemble the framework of the International Civil Aviation Organization (ICAO) which it has similar transportation domain-specific responsibilities. Governance could be managed under a wider mandate of the International Maritime Organization (IMO) Maritime Safety and Security Directorate, specifically tailored to deal with the maritime challenges of today and tomorrow.

The ICAO and the IMO are both established under UN charter to provide services within their respective environments. The ICAO develops aviation security policies and measures at the international level. It manages the Aeronautical Message Handling System; defines an International Standard Atmosphere; manages identification codes for airlines, airfields, aircraft and call signs; and provides standards for machine readable passports. The IMO's main tasks are to develop and maintain a comprehensive regulatory framework for shipping. Its remit includes safety, environmental concerns, legal matters, technical cooperation, maritime security, and "promoting the efficiency of shipping"[13].

An international agency sponsored by the UN or as a subset of an existing UN agency is necessary to assure an international, impartial, non-military approach to global maritime security. Under UN guidance a greater willingness to cooperate among the participating nations would be more likely than if nation(s) or regional cooperative(s) assumed the lead unilaterally.

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[13]IMO Resolution A.1011 (26), adopted 26 Nov 2009, Strategic Plan for the Organization - Promoting the efficiency of shipping. "With the increase in regulatory measures for safety, security and environmental protection, there is a need to achieve an appropriate balance between the multiple objectives of the Organization – namely, safe, secure and efficient shipping on clean oceans – lest such measures unduly impact on the efficiency of shipping. The development and implementation of measures to promote the efficiency of shipping is essential in order for the shipping industry to continue to serve international maritime transportation and world trade."

Conclusion

Maritime nations share a common interest in keeping the seas open for commerce and secure as national frontiers. It is logical to assume nations are willing to develop partnerships to promote this common interest in regional or global maritime awareness as a means of enabling the free flow of commerce and strengthening national security.

Most nations realize that they must cooperate with partners in order to preserve these interests. The critical path in building this cooperation is the ability and willingness to share information with partners in a comprehensive manner. Often this is more a factor of overcoming cultural or institutional biases rather than developing new technological solutions or implementing new laws or policies. Once there is willingness and the ability to share maritime information, states will need to enact and comply with a set of mutually accepted standards for information reporting and operational protocols to facilitate the exchange of MSCA information.

These standards – or enablers – are the pillars of MSCA. They enhance the efforts of nations or consortiums responsible for upholding and enforcing maritime security principals by providing a governance framework for information sharing. These enabling pillars include legal and policy strategies, the standardization of data and information sharing practices, allocating resources to surveillance and technology, engaging commercial interests, and developing and maintaining long standing relationships with partners.

Because of the global reach of MSCA, it is necessary to codify these maritime security standards and align policies across a broader framework of like-minded states and compliant actors to support this federated effort. Given the global scope of this endeavour, it is appropriate that an international organization take the lead in providing unbiased support and governance to each of the MSCA enabling areas for the collective benefit of all maritime nations. The international maritime community must promote an international body, such as the UN/IMO, to provide the leadership and constructive diplomacy to establish an appropriately-regulated maritime environment that is strongly supported by a spirit of international maritime cooperation.

As an international governance body, the United Nations plays a key role in leading the effort for standardizing a global framework for maritime security cooperation through the establishment of an international governance organization. Under a wider mandate, the IMO could provide a comprehensive strategic framework for enhanced maritime security cooperation that will serve all nations in securing a peaceful and prosperous co-existence in the greater maritime commons.

Glossary of Terms and Acronyms

Term/Acronym	Meaning
AIS	Automatic Identification Systems
BLUEMASSMED	An EU project comprised of six Mediterranean nations
IAEA	International Atomic Energy Agency
ICAO	International Civil Aviation Organization
ICANN	Internet Corporation for Assigned Names and Numbers
IMF	International Monetary Fund
IMO	International Maritime Organization
ITU	International Telecommunication Union
LRIT	Long Range Identification and Tracking
MSCA	Maritime Security Cooperation and Awareness
MSA	Maritime Security Awareness
OPEC	Organization of Petroleum Exporting Countries
ROCRAM	Operative Network for Regional Co-operation among Maritime Authorities of the Americas
SAARPSCO	South Asia and Africa Regional Port Stability Cooperative
SUCBAS	Sea Surveillance Co-operation Baltic Sea
VOI	Vessels of Interest
VMS	Vessel Monitoring Systems
VTS	Vessel Traffic Management Services