



Maritime Security – Perspectives for a Comprehensive Approach

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Abstract

Challenges to “Maritime Security” have many faces – piracy and armed robbery, maritime terrorism, illicit trafficking by sea, i.e. narcotics trafficking, small arms and light weapons trafficking, human trafficking, global climate change, cargo theft etc. These challenges keep evolving and may be hybrid in nature: an interconnected and unpredictable mix of traditional and irregular warfare, terrorism, and/or organized crime.

In our study we focus on piracy, armed robbery and maritime terrorism. Starting with principle observations regarding Maritime Security and the threat situation, we have a look at operational requirements and maritime collaboration featuring Maritime Domain Awareness. Finally, we give recommendations for political, military and business decision makers.

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ANALYSIS

1. Maritime Security

To many observers “Maritime Security” appears to be a large and sometimes nebulous concept. In fact it has become a large task involving many entities from international, public and private sectors aiming at

- preserving the freedom of the seas,
- facilitating and defending commerce, and
- maintaining good governance at sea.

Transnational forces and irregular challenges continue to be the primary threat today and in the foreseeable future, especially in the maritime domain. “Maritime Security” has to be distinguished from “Maritime Safety”. “Maritime Security” is “the combination of preventive and responsive measures to protect the maritime domain against threats and intentional unlawful acts¹”. Key words are: preventive and responsive measures, aiming at both law enforcement as a civilian and military requirement and defense operations as a military, in this case naval requirement. “Maritime Safety” is “the combination of preventive and responsive measures intended to protect the maritime domain against, and limit the effect of, accidental or natural danger, harm, and damage to environment, risks or loss.”²

The crucial distinction is between man-made and unintentional risks and dangers. “Safety” refers to dangers for ships, its crew and passengers, cargo and navigation. It is referring to the protection of the maritime environment through regulations and techniques, whereas security is focused on operational requirements. Safety is a civilian responsibility. And its achievements are based on common efforts between governmental and non-governmental actors. The “International Maritime Organization”³, IMO, is the guardian of all regulations necessary to establish and keep appropriate standards. One example is the “Best Management Practice”⁴, BMP 4, published to advise all ship owners and masters to be able to protect themselves against piracy attacks and armed robbery.

“Maritime Security” is a responsibility, which has no clear definitions when it comes to Maritime Security Operations: it is a governmental responsibility, but the authority to act on behalf of a state is a sovereign decision with different options. This has a strong influence on Maritime Collaboration. It has no universal legal or agreed definition due to the fact that it is a broad topic, covering many policy sectors. Elements, which are part of maritime security, are:

- International and national peace and security
- Sovereignty, territorial integrity and political independence

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http://www.realinstitutoelcano.org/wps/wcm/connect/44d0718042982ce1bb66bb24ab1546e8/The_wise_pen_team_final_report_april_2010.pdf?MOD=AJPERES&CACHEID=44d0718042982ce1bb66bb24ab1546e8

2 http://www.realinstitutoelcano.org/wps/wcm/connect/44d0718042982ce1bb66bb24ab1546e8/The_wise_pen_team_final_report_april_2010.pdf?MOD=AJPERES&CACHEID=44d0718042982ce1bb66bb24ab1546e8

3 http://en.wikipedia.org/wiki/International_Maritime_Organization

4 <http://www.imo.org/mediacentre/hottopics/piracy/documents/1339.pdf>



- Security of Sea Lines of Communications
- Security protection from crimes at sea
- Resource security, access to resources at sea and to the seabed
- Environmental protection
- Security of all seafarers and fishermen.

Referring to the responsibility for maritime security, all nations have a responsibility by signing UNCLOS⁵ or by being compliant with this broad set of articles and regulations which are offering a foundation for “Good Governance at Sea”. All maritime regimes, be they based on UNCLOS or derive from this basic document, be they regional or local, must ensure or, in critical situations, enforce compliance with this globally accepted document.

Having described the term “Maritime Security” and concluded that there is no universal definition, it is of equal importance to think about the term “Comprehensive Approach”. The character of the seas has changed. From an open space where freedom was the rule, they have now turned into a shared, common domain, vast but fragile, needing world- wide management and protection.

Knowing that a sectoral approach has only limited success, the term “Comprehensive Approach” seems, at least, to mean that more than one authority is engaged to contribute to “Maritime Security”. Collaboration between different national and international authorities is of equal importance. Having decided, for the time being, to focus on operational requirements, ignoring technical ones, we concentrate on so-called “enablers”. These are maritime skills developed through a combination of long experience, common exercise, common operations and a common set of rules, which are provided by the military and civil community. “Rules of Engagement”⁶ are available for both: maritime security and defense.

2. Piracy and Armed Robbery

2.1 Definitions

In article 101 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) “Piracy” is defined as follows:

- any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
 - on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
 - against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;

⁵ http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁶ <http://www.usnwc.edu/getattachment/7b0d0f70-bb07-48f2-af0a-7474e92d0bb0/San-Remo-ROE-Handbook>



- any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
- any act of inciting or of intentionally facilitating an act described before.⁷

The International Maritime Organization (IMO) in its 26th Assembly session defines Armed Robbery in Resolution A.1025 “Code of Practice for the Investigation of Crimes of Piracy and Armed Robbery against Ships” as follows:

“Armed robbery against ships,” means any of the following acts:

- any illegal act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, committed for private ends and directed against a ship or against a person or property on board such a ship, within a State’s internal waters, archipelagic waters and territorial sea;
- any act of inciting or of intentionally facilitating an act described above.⁸

2.2 Threat Situation

Looking at the threat situation generated by piracy off the coast of Somalia and in the Indian Ocean, we can observe two different developments. In the last couple of years the good cooperation between Singapore, Malaysia and Indonesia has successfully combated piracy in this region. Piracy, once rampant, has been largely exterminated because the littoral states in the region have stepped up their anti-piracy efforts. These efforts include the operation “Eye in the Sky” and Malacca Strait Patrols, involving coordinated and sometimes joint Indonesian, Malaysian, Singaporean as well as Thai air and sea surveillance operations, including a considerable information exchange. They have also invited cooperation from outside powers such as India, the United States and Japan.⁹

The situation off the coast of Somalia is just opposite to that. Although the International Chamber of Commerce (ICC) and the International Maritime Bureau (IMB) reported on October 22, 2012 that, despite the fact that the number of ships signaling attacks by Somali pirates has fallen this year to its lowest level since 2009, the greatest threat for international shipping still comes from activities by Somali pirates.¹⁰

Updated on December 3, 2012 the IMB reported for Somalia the following figures:

- Total incidents: 71
- Total hijackings: 13
- Total hostages: 212

⁷ United Nations Convention on the Law of the Sea, 10 December 1982, 60-1.

http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm.

⁸ International Maritime Organization (IMO), Assembly 26th session, Resolution A.1025, 18 January 2010, 4.

⁹ Mark J. Valencia and Nazery Khalid, “The Somalia Multilateral Anti-Piracy Approach: Caveats on Vigilantism”, The Asia-Pacific Journal: Japan Focus, http://www.japanfocus.org/-Mark_J_Valencia/3052# (accessed 9 September 2012).

¹⁰ ICC International Chamber of Commerce, „IMB reports drop in Somali piracy, but warns against complacency“, <http://www.icc-ccs.org/news/811-imb-reports-drop-in-somali-piracy-but-warns-against-complacency> (accessed 8 December 2012).



Current vessels held by Somali pirates:

- Vessels: 9
- Hostages: 147¹¹

However, not a single case has been reported yet where a ship carrying armed contractors was hijacked. This, combined with the naval activities of the multinational task force, has made life very difficult for the Somali pirates. Also, pirate activities decreased considerably along the Indian coast because last year, the Indian navy increased their patrols, enhanced surveillance and joined NATO forces in joint patrols. However, analysts also believe that the increased use of private security guards on ships, international naval patrols, bad weather and growing efforts by local authorities in the Puntland region of Northern Somalia to arrest pirates have helped to disrupt piracy, but have pushed criminals onshore.¹²

The number of worldwide incidents in 2012 is remarkable:

- Total attacks worldwide: 278
- Total hijackings worldwide: 27¹³

Although acts of piracy in the waters around the Horn of Africa have fallen sharply in 2012, the threat caused by Somali piracy off the coast of Somalia and in the Indian Ocean is and will remain of significance for international shipping in the foreseeable future, and will continue to cause high economic costs. The U.S. think tank “Oceans beyond Piracy” has published in February 2012 the report “The Economic Cost of Somali Piracy 2011”¹⁴, where it comes to the following conclusions:

- The economic costs of Somali piracy have resulted in costs of between 6.6 and 6.9 billion U.S. dollars. Expenditures are distributed as follows:
 - 2.7 billion dollars for higher oil consumption due to speed increases in high-risk areas
 - 1.3 billion dollars for military operations
 - 1.1 billion dollars for security equipment and armed security guards
 - 635 million dollars for insurance policies
 - 486 to 680 million dollars for course changes along the West coast of India
 - 195 million dollars for higher salaries and risk supplements.

¹¹ ICC International Chamber of Commerce, „Piracy & Armed Robbery News & Figures“, <http://www.icc-ccs.org/piracy-reporting-centre/piracynewsfigures> (accessed 8 December 2012).

¹² Emily Alpert, “Pirate attacks down off Somalia, reducing worldwide numbers”, Los Angeles Times, World Now, 16 July 2012, http://latimesblogs.latimes.com/world_now/2012/07/pirate-attacks-down-off-somalia-driving-down-worldwide-numbers.html.

¹³ ICC International Chamber of Commerce, „Piracy & Armed Robbery News & Figures“, <http://www.icc-ccs.org/piracy-reporting-centre/piracynewsfigures> (accessed 8 December 2012).

¹⁴ <http://www.oceansbeyondpiracy.org>.



- The average ransom increased from four million U.S. dollars in 2010 to five million dollars in 2011. Although the total ransom paid in 2011 amounted to 160 million dollars, it only represents two percent of the total economic costs caused by Somali piracy.¹⁵
- Organizations donated around 20 million U.S. dollars in order to improve the situation in Somalia and other regions affected by piracy. This sum represents a fraction of the funds spent on fighting piracy at sea.

Looking at piracy in the Gulf of Guinea, the threat situation is becoming increasingly dangerous – 34 incidents from January to September 2012, up from 30 during last year – and has shifted westward from Benin to neighboring Togo. The attacks are often violent, planned and aimed at stealing refined oil products that can be easily sold on the open market. Togo reported more attacks this year than in the previous five years combined, with three vessels hijacked, two boarded and six reporting attempted attacks. Off Benin, one ship was hijacked and one boarded. Nigeria accounted for 21 attacks with nine vessels boarded, four hijacked, seven fired upon and one attempted attack. Not all navies in the Gulf of Guinea have the resources to fight piracy far out at sea, so criminal gangs shift to these areas. The Nigerian navy however reacted to a number of incidents, where their presence was instrumental in rescuing vessels.¹⁶

Causes for concern are the recorded 51 incidents in Indonesia in the first nine months of 2012, up from an annual 2011 total of 46. Thefts, mainly carried out onboard vessels at anchor, were the main objectives of the attackers. Some ships have also been hijacked this year in the Malacca Straits, South China Sea and around Malaysia. The IMB warned that these waters are still not entirely free of piracy and armed robbery and vessels should remain vigilant and alert.¹⁷

3 Maritime Terrorism

3.1 Definition

There is no universally accepted definition of maritime terrorism but the Council for Security Cooperation in the Asia Pacific (CSCAP) Working Group has offered an extensive definition for maritime terrorism: "...the undertaking of terrorist acts and activities within the maritime environment, using or against vessels or fixed platforms at sea or in port, or against any one of their passengers or personnel, against coastal facilities or settlements, including tourist resorts, port areas and port towns or cities."¹⁸

¹⁵ Out of sight, Somali piracy fight gets rougher, Reuters, London, 21 February 2012, <http://www.reuters.com/article/2012/02/21/us-somalia-pirates-idUSTRE81K0XT20120221> (accessed on 1 March 2012).

¹⁶ ICC International Chamber of Commerce, „IMB reports drop in Somali piracy, but warns against complacency“, <http://www.icc-ccs.org/news/811-imb-reports-drop-in-somali-piracy-but-warns-against-complacency> (accessed 8 December 2012).

¹⁷ Ibid.

¹⁸ <http://www.maritimeterrorism.com/definitions/>.



3.2 Threat Situation

Maritime terrorism, like all forms of terrorism, has mostly a political, ideological or religious background. Terrorists will therefore ask themselves where they can hit the infrastructure of the industrialized world most effectively. They may focus their attention on so called choke points and mega-harbors, with 75 percent of all international sea transport activities carried out by around 50,000 ships using 2,800 ports. The strategically important Strait of Malacca is one of the critical choke points. It connects the Indian Ocean with the South China Sea and the Pacific. It is the most significant trade route between the Far East, the Gulf States and Europe. 90,000 ships use the Strait every year and one third of the world trade, 80 percent of oil exports to East Asia and two thirds of LNG exports pass through the Strait of Malacca.

Should a super tanker be sunk in the Strait of Malacca it would block all traffic, and ships would have to use the Indonesian Sunda and Flores passage. This would result in a detour of at least 1,000 km and two extra days at sea. The resulting costs would increase to approximately 8 billion U.S. dollars per year.¹⁹ As the largest ports of the world are in South and East Asia, terrorists will focus their planning on ports such as Kobe, Tokyo, Yokohama, Pusan, Shanghai, Kaohsiung, Hong Kong and Singapore. But also mega ports in the U.S.A. and Europe, such as Los Angeles and Rotterdam, could be in the focus of terrorists.²⁰

A number of successful maritime attacks demonstrate the intentions of terrorists:

- October 2000: A successful attack was carried out against the U.S. destroyer USS Cole in Yemen. 17 U.S. Sailors were killed, 39 wounded.²¹
- October 2002: The French oil tanker Limburg was attacked off Ash Shahir by a terrorist group with connections to Al Qaida. One member of the crew was killed and 90,000 tons of oil spilled into the Gulf of Aden. The monthly container traffic in Yemen shrank from 43,000 to 3,000. The economy of the country declined by one per cent of its GDP and 3,000 dockworkers lost their job.²²
- February 2004: The Abu Sayyaf Group attacked a ferry in the Philippines, 116 people lost their lives.²³
- November 2008: Mumbai attacks. Terrorists travelled by sea from Karachi, Pakistan, across the Arabian Sea, hijacked the Indian fishing trawler “Kuber”, killed the crew of four, and then forced the captain to sail to Mumbai. After murdering the captain the attackers entered Mumbai on a rubber dinghy. 164 people were killed and at least 308 wounded.²⁴

¹⁹ Dr. Peter Roell, “Maritime Terrorism – A Threat to World Trade?“, in: International Relations and Security Network (ISN), Center for Security Studies (CSS)

7 December 2009, ETH Zurich, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?id=110282>

²⁰ Dr. Peter Roell, “Seepiraterie in Südostasien“, Federal College for Security Studies, Berlin, May 2004, 27-44.

²¹ Attack on the USS Cole, <http://www.al-bab.com> (accessed 8 December 2012).

²² Yemen says tanker blast was terrorism, BBC News World Edition, 16 October 2002, http://news.bbc.co.uk/2/hi/middle_east/2334865.stm (accessed 8 December 2012).

²³ Wikipedia, the free encyclopedia: 2004 SuperFerry 14 bombing, http://en.wikipedia.org/wiki/2004_SuperFerry_14_bombing (accessed 8 December 2012).

²⁴ Wikipedia, http://en.wikipedia.org/wiki/2008_Mumbai_attacks (accessed 8 December 2012)



- July 2010: A suicide attack was carried out by the Abdullah Azzam Brigade against the Japanese oil tanker M. Star in the Strait of Hormuz, a militant group with connections to Al Qaeda. One member of the crew was injured and the hull severely damaged.²⁵

Blown-up container ships could block harbors for weeks – quite apart from an attack in one of the mega harbors with a so-called dirty bomb. A closure of the Singapore harbor for example would cost more than 200 billion U.S. dollars per year. Also, a terrorist attack of a fully loaded gas tanker in one of the mega harbors would have a devastating effect on world trade and provide terrorists with an event comparable to 9/11 – one of their stated goals.²⁶

Addressing the threat of maritime terrorism, excellent intelligence is a necessity. The groups of greatest concern in the Gulf of Aden, the Red Sea, off the coast of Somalia are Al-Qaeda in the Arabian Peninsula (AQ-AP), the Abdullah Azzam Brigades and to a reduced extent Al-Shabaab.²⁷ To combat maritime terrorism the Container Security Initiative (CSI), initiated by the United States in 2002, is very helpful. The aim of this program is to identify – out of the 230 million containers transported by sea every year – those containers with weapons of mass destruction or dangerous nuclear substances, which could be used by terrorists for their attacks.²⁸

Also, in cooperation with state organizations and industry, technical means are used for the protection against potential terror attacks. Scanning systems for large-size containers, the use of Long-Range Acoustic Devices (LRAD), special anti-boarding systems, such as 9,000-Volt-protective-fences for merchant ships making the boarding for pirates or terrorists more difficult, are just a few examples. Unmanned ‘inventus systems’ with their cameras are capable of searching large ocean areas and transmit data to a ship or a ground station.²⁹

In conclusion, we can say that world trade is potentially threatened by maritime terrorism and piracy. This includes Asia and Europe. Any kind of cooperation in this field would be well founded and could be the basis for anti-terrorism measures, but also for joint anti-piracy missions. There are many reasons to believe that also in the future we will have to expect maritime attacks of the kind, not limited to special regions, but on a world-wide scale. There is no reliable information, however, that Islamist terror groups, structured and institutionalized, cooperate with pirates in Somalia, although occasionally a few indications for such cooperation seem to pop up.

²⁵ UAE confirms oil tanker attack, Al Jazeera, <http://www.aljazeera.com/news/middleeast/2010/09/20108683953783853.html> (accessed 8 December 2012).

²⁶ Dr. Peter Roell, “Maritime Security: New Challenges for Asia and Europe”, Institute for Strategic, Political, Security and Economic Consultancy (ISPSW) Berlin, ISPSW Strategic Series, Issue No. 167, November 2011, 7, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?id=134578>.

²⁷ Rupert Herbert-Burns, “Countering Piracy, Trafficking, and Terrorism: Ensuring Maritime Security in the Indian Ocean”, in *Indian Ocean Rising: Maritime Security and Policy Challenges*, ed. David Michel and Russell Sticklor (Washington: STIMSON, July 2012), 23-39.

²⁸ http://en.wikipedia.org/wiki/Container_Security_Initiative.

²⁹ Dr. Peter Roell, “Maritime Security: New Challenges for Asia and Europe”, Institute for Strategic, Political, Security and Economic Consultancy (ISPSW) Berlin, ISPSW Strategic Series, Issue No. 167, November 2011, 7, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?id=134578>.



What are the challenges for decision makers in fighting both maritime terrorism and piracy? Decision makers need to understand that fighting piracy and maritime terrorism at sea will not remove the threat. Suitable measures need to be taken onshore in order to achieve success.³⁰

4. Operational Requirements and Maritime Collaboration

4.1 Who are the Global and Regional Stakeholders of "Maritime Security"?

In the previous chapters threats to Maritime Security have been described and evaluated. In this part, the intention is to inform about operational requirements and successful maritime collaboration.

A brief look at the global maritime community shows stakeholders of different influence and power to enforce compliance in the maritime domain. Consensus has been achieved between all stakeholders about the national territorial waters: 12 nautical miles (nm) from the shore towards the sea, some nations are claiming up to 24 nm. UNCLOS offers this as a "contiguous zone"³¹ with limited rights and responsibilities in comparison with the TTW.

More important today is the Exclusive Economic Zone, EEZ, up to 200 nm, but also with the possibility to extend this zone for economic interests in relation to the continental shelf up to 350 nm³². Here some of the elements of maritime security are touched, and the existing and expected disputes about claims are risks and dangers to global maritime security.

International bodies have attempted to minimize, stop, or otherwise control threats to security in the maritime domain. This includes actions from international organizations such as the International Maritime Organization (IMO), public agencies/organizations such as law enforcement, and naval forces, private industry such as shipping companies, ports, privately contracted armed security personnel and entities from all nations to achieve maritime security. This also includes safety regulations such as the International Ship and Port Facility Security Code (ISPS Code), shipping protection practices, and naval patrols. Who are the actors on this scene to develop the existing maritime regime in the future, able and willing to implement it by all means, including the use of maritime and naval forces?

4.1.1 United Nations (UN)

First we have the United Nations with its "International Maritime Organization" (IMO).³³ The IMO has a long experience in negotiating local, regional and global agreements and treaties and has adopted a number of resolutions and conventions to this end. For example, Resolution A.545--Measures To Prevent Acts Of Piracy And Armed Robbery Against Ships was signed in 1983. In 1985 came IMO Resolution A.584--Measures To

³⁰ Regarding the engagement of the European Union to combat piracy and indirectly maritime terrorism see also Lutz Feldt, "Operation Atalanta – Europe's Contribution", Institute for Strategic, Political, Security and Economic Consultancy (ISPSW) Berlin, ISPSW Strategic Series, Issue No. 185, April 2012, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?id=140842>.

³¹ [http://www.eoearth.org/article/Exclusive_economic_zone_\(EEZ\)](http://www.eoearth.org/article/Exclusive_economic_zone_(EEZ))

³² http://en.wikipedia.org/wiki/Exclusive_economic_zonehttp://en.wikipedia.org/wiki/International_Seabed_Authority

³³ <http://www.imo.org/Pages/home.aspx>



Prevent Unlawful Acts Which Threaten Safety Of Ships And Security Of Passengers (this was later reviewed in November 2001 with IMO Resolution A.924). In 1986 the IMO approved MSC/Circ.443--Measures To Prevent Unlawful Acts Against Passengers And Crew On Board Ships. In 1988, the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) treaties aiming at ensuring that appropriate judicial action is taken against persons committing unlawful acts against ships. Unlawful acts would include the seizure of vessels by force, acts of violence against persons on board vessels, and placing devices on board a vessel which are likely to destroy or damage it. The convention obliges contracting governments either to extradite or prosecute alleged offenders. The SUA came into effect on March 1, 1992. Following the tragic events of September 11, 2001, the twenty-second session of the IMO, in November 2001, unanimously agreed to incorporate security regulations and approved the development of new measures relating to the security of vessels and of port facilities for adoption by a Conference of Contracting Governments to the International Convention for the Safety of Life at Sea in December of 2002 (the Diplomatic Conference).

This administrative capacity is of great importance and the IMO will remain the “Guardian of Good Governance at Sea”. On the other hand, the UN and IMO have only very little operational and tactical experience when it comes to the implementation and enforcement of the law of the sea. The Operation “UNIFIL” in the Mediterranean Sea is a successful but rare exception and no further maritime operation has been lead by the UN so far.³⁴

4.1.2 USA

The United States of America has published a “National Maritime Security Strategy”³⁵ a common effort by the Navy, the Coast Guard and the Marine Corps, a document which is ambitious as a national document, but with a strong outlook for international cooperation as well. The US Government has not signed UNCLOS yet, but is a long and strong supporter of IMO and is acting in compliance with UNCLOS and the documents, which followed UNCLOS. Here the strategic perspective is combined with operational and tactical capabilities, which are vital for the enforcement of almost all elements of maritime security. Navy, Coast Guard and Marine Corps are providing all necessary capabilities, which are needed to project power: Intention and will, the appropriate level of ambition, a Strategy, doctrines and naval capabilities. Therefore, the US is projecting power by military forces, ensures maritime security through the Coast Guard, and assumes its function as Law enforcement agency together with the Navy and the Marine Corps whenever the situation calls for it.

4.1.3 NATO

The third stakeholder is NATO³⁶. NATO has a “Maritime Strategy”³⁷ and is acting in several Maritime Security Operations with great endurance and success due to its long- standing experience on the operational and the

³⁴ <http://reliefweb.int/report/lebanon/lebanon-unifil-maritime-task-force-transfer-authority-1>

³⁵ <http://www.navy.mil/maritime/Maritimestrategy.pdf>

³⁶ <http://www.nato-pa.int/Default.asp?SHORTCUT=2087>

³⁷ http://www.nato.int/cps/en/natolive/official_texts_75615.htm



tactical level. The member states of the Alliance own all naval and maritime operational capabilities, which are needed to achieve and endure maritime security³⁸. The roles are providing a spectrum of strategic options:

- Deterrence and collective defense
- Crisis management
- Cooperative security: outreach through partnership, dialogue and cooperation and
- Maritime Security.

The operational requirements are optimized for serving the whole spectrum of tasks: ranging from humanitarian assistance to training and to capabilities to fight wars at sea. All these capabilities are operational and inherent in naval vessels from Frigate size on and above. There is something that we can call “Operational Art”, which is the mixture of experience, intellect, judgment, creativity, intuition and education. To find the right balance, time and patience is needed.

NATO’s experience consists of its expertise gained from the build-up of its “Standing Naval Forces”³⁹ and its corresponding technical and procedural standards, which are implemented with a common understanding. Command and Control, placing great emphasis on Communication and Intelligence, Surveillance and Reconnaissance are a common achievement, which in US, NATO and EU maritime operations like anti-piracy operations serve as the tool for coordination and cooperation. The most important operational requirements for international collaboration are communications and information and knowledge sharing, which are needed for ensuring an effective execution of operations. NATO, through its “Partnership for Peace” program⁴⁰, has “exported” these basic requirements, since the end of the Cold War, to non-NATO navies, which are partners in, and contributors to, international naval and maritime exercises. Restricting operational requirements either to military-technical or to naval aspects only would be ignoring the actual situation at sea. This is the reason why NATO has expanded its roles and tasks into the area of maritime security,⁴¹ focusing in particular on “conducting surveillance and sharing information”⁴² In conclusion: NATO has all necessary operational assets and the appropriate training and education to fulfill all maritime task requirements, together with other governmental and non-governmental organizations.

4.1.4 European Union

The fourth stakeholder in the maritime domain is the European Union (EU). It is a Union of states with a political mandate, with its own maritime interests. The member states are responsible for being much larger than their combined landmass and its economic interests are global: trade and resources are the key words in this context. The “Highways of the Sea” and the newly explored seabed resources are of vital interest for the European Union and its member states.

³⁸ http://www.nato.int/docu/review/2010/maritime_security/end_of_naval_era/en/index.htm

³⁹ <http://www.manp.nato.int/NAVSOUTH/STANAVFORMED.htm>

⁴⁰ http://www.nato.int/cps/en/natolive/topics_50349.htm

⁴¹ http://www.nato.int/cps/en/natolive/official_texts_75615.htm

⁴² http://www.nato.int/cps/en/natolive/official_texts_75615.htm, para 15



With the “European Security Strategy”⁴³ the EU has declared the framework and its ambition to take its responsibility in Europe and beyond. But this strategy is lacking security aspects, especially maritime security aspects. The Military Staff of the EU and the European Defense Agency are taking care of security and defense issues. Up to now, almost all maritime initiatives of the EU are dealing with a broad spectrum of the maritime domain, however they are not including security and defense into their very well developed policies, like the “Integrated Maritime Policy”.⁴⁴ The program of work includes, for example: maritime transport without borders, national integrated maritime policies, a strategy for maritime research, a maritime surveillance network, a network of maritime clusters and a strategy to mitigate the effects of climate change. The EU is a strong contributor to all maritime aspects in the EU’s maritime domain and beyond, but its operational capabilities are limited.

The European Naval Operation “ATALANTA”⁴⁵ is an important step forward. The positive experience with all aspects of the operation, including the fast process of implementing this first European Naval operation, should encourage the European Parliament, the Council, the Commission and the Military Staff to take more responsibility at sea in order to achieve “Good Governance at Sea” through maritime security.

To sum up: the EU has great maritime interests, in Europe and beyond, the IMP and its subsequent documents are examples of an excellent contribution to maritime affairs, but they are still limited in scope and lacking comprehensiveness. Member states have recognized this and have, through multilateral agreements, tried to compensate the situation. “EuroMarFor”⁴⁶ is one example for this approach.

As an interim conclusion, it seems appropriate to focus on maritime surveillance. Maritime surveillance is an important topic in the NATO Maritime Strategy and the EU Integrated Maritime Policy. The EU Commission has developed a process to achieve a “Common Information Sharing Environment”⁴⁷ CISE, in the European maritime domain and beyond. This is a great success, and it should be used as a blueprint for other maritime domains as well. There are other initiatives, which are focused at a specific purpose, but are urgently depending on a common picture of the maritime domain and on information sharing based on the principle: need to share and responsibility to share information. One example is EUROSUR⁴⁸, a maritime surveillance system owned by Frontex⁴⁹, the European Agency for Management of Operational Cooperation at the External Borders of the Member States of the European Union. In this context, the second example is “MARSUR”⁵⁰, a Maritime Surveillance Network developed by the European Defence Agency and focused on the defense community, but with the idea to be integrated into the CISE process.

4.1.5 African Union (AU)

In some regions, challenges for operational requirements in the field of maritime security are growing more than in other parts of the global maritime domain: the whole of Africa is such a region. Several regions: East

⁴³ <http://www.consilium.europa.eu/eeas/security-defence/european-security-strategy?lang=de>

⁴⁴ http://ec.europa.eu/maritimeaffairs/policy/index_en.htm

⁴⁵ <http://www.consilium.europa.eu/eeas/security-defence/eu-operations/eunavfor-somalia?lang=en>

⁴⁶ <http://www.euromarfor.org/>

⁴⁷ http://ec.europa.eu/maritimeaffairs/maritimeday/2012/20120521_15_programme_en.pdf

⁴⁸ <http://www.frontex.europa.eu/eurosur>

⁴⁹ <http://www.frontex.europa.eu/about/origin>

⁵⁰ http://www.eda.europa.eu/docs/eda-factsheets/marsur-factsheet-v2_09102012_cs5_bleu



Africa, Horn of Africa, and West Africa - Gulf of Guinea, are obviously facing severe maritime security challenges combined with poor operational requirements and expertise. The African Union's initiative to draft its own "African Maritime Security Strategy"⁵¹ is of importance and should be supported by all means. Assuming responsibility and asking for assistance in that process is an encouraging approach. Coast Guard functions are required and should be provided by own national assets, be they Navy or Coast Guard. Maritime collaboration between West African maritime services is a challenge and needs more national and international support. Small and middle-sized Offshore Patrol Vessels (OPV) should be the answer to the regional operational challenges.

4.1.6 Non-Aligned Nations

Last but not least, it seems of great importance to draw the attention to some non-aligned nations and their growing maritime ambitions: Brazil has taken the leadership of the United Nations' first maritime security operation, UNIFIL⁵², in the Mediterranean Sea. This is a contribution to international responsibility at sea. Russia has been involved in different kinds of maritime security operations in the Baltic, in the Mediterranean Sea, in the Norwegian Sea and in the Indian Ocean, as an independent contributor in the fight against piracy.⁵³ India has an ambitious naval and maritime program, with the aim to remain and become a regional maritime power. And India will have its own voice in maritime security issues in the international arena. China's naval and maritime ambitions are visible since several years and its operational capabilities are already of a high professional standard. By being an independent participant in the maritime security operations in the Gulf of Aden and Indian Ocean, China⁵⁴, for the first time since centuries, is engaged in an international effort to achieve maritime security: even though this does not mean collaboration yet, it is certainly a form of coordinating operational capabilities in a very pragmatic way.

4.2 Examples for successful collaboration

The agreement between India, Japan and China aiming at coordinating maritime security efforts in the Gulf of Aden in order to avoid duplications of effort and to act more professionally is one side of the coin, the encouraging one. It is the result of the SHADE process, a successful series of meetings in Bahrain to achieve "Shared Awareness and Deconfliction".⁵⁵ The SHADE process is an example of building mutual trust and confidence and one way to achieve a real deconfliction. It allows for more opportunities in other maritime regions as well. What has been achieved by Indonesia, Malaysia, Singapore and Thailand is of different, higher quality. Under

⁵¹ <http://www.au.int/pages/maritime/news/1st-conference-african-ministers-responsible-maritime-related-affairs-back-back-4th-af>

⁵² <http://www.dailystar.com.lb/News/Local-News/Feb/17/Brazil-marks-landmark-participation-in-UNIFIL.ashx#axzz2EfiE9J4L>

⁵³ http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=28536:russian-navy-anti-piracy-flotilla-on-the-way-to-africa&catid=51:Sea&Itemid=106

⁵⁴ <http://thediplomat.com/2012/03/06/india-china-and-the-pirates/>

⁵⁵ <http://combinedmaritimeforces.com/2011/09/27/cmf-hosts-21st-shade-meeting/http://oceansbeyondpiracy.org/matrix/activity/shared-awareness-and-deconfliction-shade>



the sponsorship of the IMO, it took the littoral states some courage, patience and time to carry out three joint operations to safeguard the international shipping in the Strait of Malacca and Singapore.⁵⁶

“MALSINDO”, an agreement concluded in 2004, deals with permanent sea surveillance and advanced information sharing and is the air equivalent to the “Eyes in the Sky” program with the same task and agreed “Terms of Reference” and “Standing Operational Procedures”. It was extended by an Intelligence Exchange Group and, since 2008, together with Thailand, is an open arrangement for other partners and can be used as a blueprint for other regions. Another example of further collaboration is the “Djibouti Code of Conduct”⁵⁷. This agreement concerning the repression of piracy and armed robbery against ships lays the ground for cooperation in line with international law. Regarding its ambition and development under the umbrella of the IMO, it is similar to the agreements between the Asian nations, but, until today, it has not reached the same pragmatic degree of implementation. The implementation is supported by a resolution offering technical cooperation and general assistance. A training center in Djibouti, an information-sharing center in Sanaa, Yemen, a regional Maritime Rescue Coordination Centre in Mombasa, Kenya and a Sub Centre in Dar es Salaam, Tanzania, are already functioning.

Some of these initiatives by the IMO, supported by other UN organizations like UNDP and UNODC, together with the EU and the maritime industry, are very encouraging. The basic idea follows the good experience made in Asia. There the “ReCAAP–ISC”⁵⁸ is setting a high standard and ReCAAP, the Regional Cooperation Agreement on Combating Piracy and Armed Robbery in Asia, and the Information Sharing Centre are another proof of a successful maritime collaboration in order to improve maritime security through a comprehensive approach.

The conclusion of this chapter: it is obvious that the global maritime domain offers inside looks with very different aspects. On one hand it is still an open space where freedom is the rule with limited maritime regimes in force; on the other hand, there are increasing examples of collaboration and regional maritime security initiatives and pragmatic processes. The first steps for comprehensive approaches are encouraging.

5. Comprehensiveness – Principal and Technical Aspects

Operations within the context of Maritime Security are those measures, which are performed by the appropriate civilian or military authorities and agencies in order to counter the threat and mitigate the risks of illegal or threatening activities in the maritime domain. They are aiming at enforcing the Law, protecting citizens and safeguarding national and international interests. A center of gravity analysis shows that critical vulnerabilities, requirements and capabilities need to be addressed in cooperation with national/multinational partners, agencies and organizations to co-operate effectively to deter, protect against and counter hostile and illegal threats to safety and security in the maritime domain.

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<http://www.navy.mil.my/wpns2012/images/stories/dokumen/WPNS%202012%20PRESENTATION%20FOLDER/PRESENTATION%20BY%20COUNTRIES/1628%20MALAYSIA/ENHANCING%20INTEROPERABILITY%20COOPERATION.pdf>

⁵⁷ <http://www.imo.org/ourwork/security/piu/pages/dcoc.aspx>

⁵⁸ <http://www.recaap.org/AboutReCAAPISC.aspx>



Naval services – civilian as military services – need to provide maritime security by focusing on managing maritime security threats directly or indirectly. They do this by providing security patrols, intercepting suspect vessels, and providing data for Maritime Domain Awareness, and building partner capacity. Fine law enforcement skills, such as minimal use of force in order to reduce disruption to society, knowing how to conduct effective and legal searches, the knowledge to piece together case packages, and knowing the difference between evidence and intelligence, have become incredibly important in maritime interception operations.

5.1 Operational Experiences

Military, first responder, and law enforcement personnel need to cooperate with a comprehensive understanding of enhancements to security in the maritime arena and the unique circumstances and operational conditions that prevail therein in order to better perform their duties and responsibilities in the port, maritime, and intermodal context, which may include

- inspecting vessels, terminals, and other facilities;
- responding to crises involving threats of terrorism or actual attacks;
- monitoring and controlling access to facilities and vessels;
- interviewing, examining, and credentialing transportation workers and facility personnel;
- conducting surveillance operations and participating in undercover assignments;
- tracking and interdicting suspicious cargo, persons, vessels, or vehicles;
- recognizing and detecting the presence of bombs, explosives, and Weapons of Mass Destruction;
- interacting on security matters with Vessel Security Officers, Company Security Officers, Facility Security Officers, and relevant federal, state, and local agencies; and
- performing threat, risk, and vulnerability assessments; security planning; and contingency planning.

Unfortunately, up to now there is a lack of overarching frameworks to bring nations' civilian and military elements together in order to address threats to Maritime Security efficiently, coherently and collectively. National actors are conducting Maritime Security as part of routine, peacetime duties in response to the threats mentioned above. These operations are generally either conducted independently by the armed forces and/or civilian agencies in order to enforce legal powers and safeguard sovereignty or as part of multi-national military operations, which aim to safeguard common defense and security interests. Yet, there are a number of promising developments that highlight the benefits of providing multinational, multiagency capacities and capabilities among those nations that participate in NATO's "Operation OCEAN SHIELD" and The European Union's "Operation ATALANTA".



5.1.1 Operation OCEAN SHIELD

In late 2008, when growing piracy in the Gulf of Aden and off the Horn of Africa started undermining international humanitarian efforts in Africa and the safety of one of the busiest and most important maritime routes in the world – the gateway in and out of the Suez Canal – NATO started to provide escorts to UN World Food Program (WFP) vessels transiting through these dangerous waters under Operation Allied Provider. This decision was taken on the request of UN Secretary-General Ban Ki-moon, in full complementarity with the relevant UN Security Council Resolutions and with actions against piracy initiated by other actors, such as the European Union.

In addition, NATO conducted deterrence patrols and prevented, for instance, vessels from being hijacked and their crews being taken hostage during pirate attacks. This initial operation was succeeded in early 2009 by Operation Allied Protector, which continued to contribute to the safety of commercial maritime routes and international navigation. It also conducted surveillance and fulfilled the tasks previously undertaken by Operation Allied Provider. This operation evolved in August 2009 into Operation OCEAN SHIELD⁵⁹, an operation approved by the North Atlantic Council on 17 August 2009 and recently extended until the end of 2014.

Principally, operation OCEAN SHIELD has been focusing on at-sea counter-piracy operations. NATO's role has been to provide naval escorts and deterrence, while increasing cooperation with other counter-piracy operations in the area in order to optimize efforts and tackle the evolving pirate trends and tactics. NATO vessels conduct, for instance, helicopter surveillance missions to trace and identify ships in the area. They help to prevent and disrupt hijackings and to suppress armed robbery. NATO has agreed, at the request of the UN, to escort the UNSOA - United Nations Support Office for AMISOM - supply vessels to the harbor entrance of Mogadishu.

In order to respond to new piracy tactics, NATO has created greater synergies with other initiatives, recognized the continued need for regional capacity-building, within its means and capabilities, and focused on areas where it provides added value. It has broadened, within its means and capabilities, its approach to combating piracy by offering to those regional states requesting it assistance in developing their own capacity to combat piracy activities. More recently, NATO has also taken on measures aimed at eroding the pirates' logistics and support base by, among other things, disabling pirate vessels or skiffs, attaching tracking beacons to mother ships and allowing the use of force to disable or destroy suspected pirate or armed robber vessels.⁶⁰

To this point, Operation OCEAN SHIELD has contributed to providing maritime security in the region and is helping to reduce the overall pirate attack success rate which has been reduced from 44 percent in 2004 to 16 percent in 2011.

5.1.2 Operation ATALANTA

Operation ATALANTA is part of the European Union Comprehensive Approach in the Horn of Africa. The political objectives of the EU are to prevent and deter pirates from interrupting global maritime trade, but also to

⁵⁹ NATO, Operation Ocean Shield Current News. http://www.manw.nato.int/page_operation_ocean_shield.aspx. (Accessed 2 January 2013).

⁶⁰ NATO, counter-piracy operations. http://www.nato.int/cps/en/natolive/topics_48815.htm. (Accessed 2 January 2013).



contribute to a sustainable and long-term solution to piracy through building-up the capacity of the states in the region, including Somalia, to take ownership of the fight against piracy. The EU being concerned with the continuing impact of piracy and armed robbery at sea off the coast of Somalia on international maritime security and on the economic activities and security of countries in the region has launched in December 2008 European Naval Force Somalia – Operation ATALANTA (EU NAVFOR – ATALANTA) within the framework of the European Common Security and Defense Policy in accordance with relevant UN Security Council Resolutions (UNSCR) and International Law.⁶¹

The UNSC mandate has been providing for

- protection of vessels of the World Food Programme (WFP) delivering food aid to displaced persons in Somalia; the protection of African Union Mission in Somalia (AMISOM) shipping;
- deterrence, prevention and repression of acts of piracy and armed robbery off the Somali coast;
- protection of vulnerable shipping off the Somali coast on a case by case basis;

In addition, Operation ATALANTA has been contributing to the monitoring of fishing activities off the coast of Somalia.

To this end, EU NAVFOR ATALANTA has been operating in a mission area covering an area from the southern Red Sea, the Gulf of Aden and the Western part of the Indian Ocean including the Seychelles. The area of operation includes Somali coastal territory as well as its territorial and internal waters. Since its launch Operation ATALANTA

- has had a 100 percent success rate providing escorts to WFP vessels delivering humanitarian aid to Somali people.
- has provided protection to AMISOM shipments, which are critical to the success of the AU operation in Somalia.
- has ensured the protection of other vulnerable shipping within the Internationally Recommended Transit Corridor (IRTC) and other assistance.

In order to address the root causes of piracy, the European Union has also been contributing to the social and economic development of Somalia, concentrating on three sectors of cooperation: governance, education, and the productive sectors, particularly rural development. The EU actively works towards improving security on the ground in Somalia through the empowerment of Somali capacities, with the EU Training Mission training Somali soldiers in Uganda to contribute to strengthening the Transitional Federal Government and the institutions of Somalia. In addition, the EU offers substantial financial and technical support to the African Union's military mission to Somalia (AMISOM). The EU has been funding e.g. mission allowances, medical care, accommodation, fuel, communication equipment etc. in order to support dialogue and reconciliation and provide protection to key infrastructures, e.g. government buildings and the Mogadishu International Airport.

⁶¹ The Council of the European Union. Council Decision 2010/7766/CFSP of 7 December 2010 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:327:0049:0050:EN:PDF>. (Accessed 2 January 2013).



5.2 Focus Area: Situational Awareness

With regard to national/multinational cooperation in such complex operations with many different actors involved, maritime domain awareness is needed in order to create a comprehensive picture of maritime activity based on accessible information – situational awareness covering the deployment of layered maritime security from the high seas to territorial waters, including littoral areas and port facilities. Already in the previous chapters the importance to promote national inter-ministry, inter-governmental and multinational cooperation for Maritime Security along with other actors involved has been highlighted, taking full advantage of existing frameworks in order to

- create the appropriate environment to promote the civilian-military aspects of cooperation, information sharing and maritime surveillance
- coordinate the participation and actions of all organizations and partners. This includes collaboration suites and integration of existing communication networks to an unified, interoperable network
- enable Maritime Security within commercial practices; providing for a better situational awareness and understanding of how the commercial shipping sector might contribute to and benefit from Maritime Security, most notably in the energy sector

The availability and management of information, data and spatial planning is vital to understanding the Maritime environment, the compilation of a threat analysis and the implementation of a comprehensive approach to Maritime Security. There are many sources of information, from open source ‘white shipping’ such as AIS, commercially available databases such as Lloyds, to comprehensive ‘fused’ intelligence pictures, representing national, EU, NATO and coalition interests only.

The latter also applies to dealing successfully with maritime cyber risks, as global information exchanges for maritime cyber security-related incidents are badly needed. Like many other critical infrastructures, maritime transport depends on information and communicational technology (ICT). Without ICT, harbors, automatic identification systems, navigation, logistics systems, and vessels do not operate. With the exception of dedicated naval communication systems,⁶² maritime cyber infrastructures have so far not been at the center of cyber villains. This could rapidly change. Coordinated cyber attacks against infrastructure operators such as PSA International, Hutchinson Port Holding, and Cosco, three of the world’s biggest container port operators in the Asia-Pacific, would have rippling effects far beyond the region. The main challenge for maritime cyber risks stems from the fact that the International Shipping and Port Security Code (ISPS Code) is focusing on physical, rather than digital security risks. By taking up this concern, nations and regions could help advance global security for critical maritime infrastructures.

Numerous governmental, military and business organizations already possess valuable inputs. However, no one source captures all of the maritime information needed or currently available. The information exchange between government agencies and private industry, in particular, sharing common databases, is the real power

⁶² “China hackers enter Navy computers, plant bug to extract sensitive data”. The Indian Express. 1 July 2012.
<<http://www.indianexpress.com/news/china-hackers-enter-navy-computers-plant-bug-to-extract-sensitive-data/968897/0>>
(Accessed 18 October 2012).



behind Maritime Domain Awareness. The challenge is to effectively integrate and fuse the various inputs to achieve the synergies offered by a comprehensive situational awareness picture, while being responsive to the information needs of participating agencies. This also includes ports, as these are particularly exposed to security, terrorism, emergency and operational events, which are related to national governments' supply chain. Government agencies, port authorities and associated organizations must identify, collaborate, prioritize and respond to these events across organizational boundaries and disparate business processes.

Related capabilities will be enhanced by the use of Operational Force Multipliers such as

- platforms, sensors, links, data and sensor fusion, change detection, decision support tools,
- open sources intelligence capabilities,
- knowledge development and
- C4ISTAR⁶³ facilities in order to deliver an optimized operational contribution to Maritime Security

Of course, security aspects need to be embedded into commercial practices. With most of world trade conducted by sea, the maritime environment delivers many goods and services that are essential for society's needs. As the need for hydrocarbon-based energy grows, the need to safeguard maritime-related traffic is becoming more acute. Cooperation and partnership with commercial shipping agencies are vital in order to achieve a holistic approach to Maritime Security, which meets mutually agreed objectives of all parties involved.

5.3 European Blueprint?

The European approach to situational awareness may serve as reference how to approach the complex issue. The EU maritime domain faces different and mounting threats and challenges in all regional sea basins such as human or drug trafficking, marine pollution, depletion of fish stocks and piracy. The integration of maritime surveillance as one of the important strands of the Integrated Maritime Policy will provide for combating threats, detecting vulnerabilities and illegal activities and increasing knowledge. It will ensure safer, more secure and cleaner seas and boost sustainable economic growth through efficiency gains.

In its Maritime Policy the European Union aims at approaching all aspects of the oceans and seas in a holistic and dynamic manner. The vision is to infuse cohesion and commonality into offshore functions and provide interoperability in the surveillance systems. It aims to safeguard Europeans' lives and interests by enhancing Maritime Security through the integration of activities and systems associated with it. As regards offshore activities, there is much room for the rationalization of the cross-border and cross-sector functions which the Member States deploy on coastal waters.

CISE⁶⁴ has been mentioned before. In October 2009, the European Commission set guiding principles on how to achieve integration of maritime surveillance – a '*Common Information Sharing Environment for the surveillance*

⁶³ C4ISTAR is the British acronym used to represent the group of the [military](#) functions designated by C⁴ (command, control, communications, computers), I ([military intelligence](#)), and STAR (surveillance, target acquisition, and reconnaissance) in order to enable the coordination of operations.

⁶⁴ Commission of the European Communities: '*Towards the integration of maritime surveillance*', COM(2009) 538 final, Brussels 2009



of the European Union domain' ('CISE')⁶⁵. It aims at creating a political, cultural, legal and technical environment to enable sharing of existing and future surveillance systems and networks. Such interoperability will be established in a decentralized way, using modern technologies. It will provide all concerned authorities with access to the information they need for their missions at sea, based on the 'need-to-know' and 'responsibility-to-share' principle.

Within this context the objective of integrated maritime surveillance is to share information across borders and sectors routinely and systematically throughout the EU. It is supposed to provide public authorities, which are interested or active in maritime surveillance at European Union (EU), regional and national level, with means to exchange information and data across borders and across sectors to understand effectively activities and events at sea.

Currently, EU and national public authorities responsible for different aspects of maritime surveillance – e.g. border control, traffic safety and security, fisheries control, customs, environment, general law enforcement or defense – collect information and data mostly separately and do not share them systematically. Cross-border sharing of data within a sector has been advancing in the past years, often with the help of European Agencies, but sharing information across sectors is still in its infancy. Sharing relevant cross-sectoral and cross-border information and data would enhance the sectoral maritime situational awareness of the public authorities and facilitate sound decision-making. Therefore, it would increase the effectiveness and the cost-efficiency of maritime surveillance activities.

A roadmap with a step-by-step approach has been adopted in October 2010⁶⁶. Since then, through the close cooperation between the Commission, the Member States expert sub-group on integrated maritime surveillance and the 'CISE' Technical Advisory Group that includes the representatives of all user communities and European Agencies, substantial progress has been made. Seven user communities including border control, maritime safety and security, fisheries control, customs, marine environment, general law enforcement and defense have been identified involving roughly 400 national public authorities. More than 500 existing maritime-related surveillance data sets have been mapped. 'Gap' analysis for the data exchanges has shown that 40 percent to 90 percent have not made been systematically available up to now.

The 'CISE' Technical Advisory Group is currently investigating the relevance of structuring data elements into 'purpose oriented information service packages' including corresponding pre-defined 'access rights' based on predefined maritime missions of the seven user communities. A technical supporting framework is under development, using common interoperability language permitting secure and seamless data exchanges in a decentralized and flexible manner. A preliminary study is in progress, essentially with a view to mapping the various information technologies tools used by the existing and forthcoming sectoral and regional systems. Requirements for necessary legal provisions have been mapped to allow lawful data exchanges with regard to

⁶⁵ European Defence Agency, European Environment Agency, European Fisheries Control Agency, European Maritime Safety Agency, European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union and European Law Enforcement Agency

⁶⁶ Commission of the European Communities: COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on a Draft Roadmap towards establishing the Common Information Sharing Environment for the surveillance of the EU maritime domain COM/2010/0584 final. Brussels. (Accessed 2 January 2013).



personal data protection as well as data confidentiality and ownership in accordance with international, European or national regulations.

The next steps for 'CISE' include further studies to feed into assessing the impact and the added-value of 'CISE', an Impact Assessment to include the results from 2 recent pilot projects to be finalized in the course of 2013, and a 'White Paper' on maritime data sharing is scheduled to be issued by the end of 2013 as a forerunner to a potential framework legislation establishing 'CISE'.

6. Recommendations

A comprehensive approach to Maritime Domain Security is indispensable to safeguarding common prosperity and security interests as it effectively protects and supports legitimate activities, while countering the threat of current and emerging terrorist, hostile, illegal or dangerous acts within the maritime domain. By ensuring freedom of navigation and commerce, it also has the capacity to promote regional, and contribute to global, economic stability and protect maritime trade as the heart of regional and global economies.

Ensuring Maritime Security requires strong and enduring partnerships between civilian and military authorities. This partnership can build on separate initiatives already in place and the respective strengths of relevant actors in the domain of Maritime Security. Enhanced cooperation concerning the Maritime Domain is in the immediate interest of any actor involved in maritime trade and security. Capabilities are either already existent or can be built up in an international co-operative manner. Criminal activities and terrorism could be deterred significantly by concerted action that improves the presence of maritime security forces, enables the boarding of suspicious vessels according to internationally agreed legal rules and provides Maritime Security by Maritime Domain Awareness and integrated civil-military capacities.

Particularly, the timely fusing of maritime information is an initial priority. Incremental improvements in information sharing could allow operational cooperation to develop, as mutual confidence grows correspondingly. For an inter-agency approach to work, the strengths of the relevant organizations involved in addressing Maritime Security must be combined. A better use of the limited resources to address the omnipresent, multi-national threat in the maritime domain would produce a most valuable result for governments, international organizations and the commercial sector as well.

Situational Awareness systems have the capability of integrating a wide range of emerging disruptive technologies that include: low cost sensors, IT architecture, video, robotic vision, gaming, 3D/geospatial modeling, physical and virtual augmentation, autonomous systems, simulation software, location-based service, social web life streams, and expert software learning systems. Of course, Situational Awareness platforms will require significant integration to make it useful for users in a networked world. But eventually, it will cultivate our capacity for increased awareness, mindfulness, and focus. It will force learners to expand their collection of inputs, selectively identify their filters used in synthesizing and sense-making, and help to mainstream systems-thinking and underline the imperative of understanding structure, relationships and feedback loops in a globally interdependent world.

The principles of situational awareness based on perception, comprehensiveness *and* projection might soon support a wide range of applications that reach far beyond military operations and crisis response. It is a user



and outcomes-centric systems approach that could integrate anticipated advances in mobility, 'smart' infrastructure, learning systems, policy-making and business intelligence.

Maritime trade is key to prosperity not only of the Asia-Pacific region, but of the European Union as well. Risks posed by pirates and robberies have already prompted several countries to join forces and pool resources to address the respective consequences. Pooling and sharing between public and private stakeholders could also help address two issues of growing concern. With regard to combating piracy and armed robbery we propose the following:

- A first step should be a new look at the Maritime Laws governing the use of force on the high seas and within the territorial coastal areas. These laws need to be taken into the 21st century and adopted to the threats of today.
- The Rules of Engagement of naval units tasked with protecting the trade routes need to be coordinated and agreed on. Furthermore, a close look needs to be taken at the kind of naval vessels, which might be required to combat piracy more cost effectively.
- The use of Private Security Companies (PSCs) should be regulated and agreed.
- Shipping companies need to conform to the basic security requirements when operating in danger areas and should at all times comply with due care for their crew and cargo. They will need to invest in superior passive defense measures and adopt active measures, if required.
- Police and security services should actively combat those international crime groups involved in piracy at the earliest possible point in time in order to reduce the attractiveness of piracy. They should also prevent piracy from being used by terrorist organizations to advance their aims.
- The banking community should take a much closer look at money laundering and report all suspicious transactions to the authorities.
- Long term plans to bring the beginning of stability to Somalia, and the establishment of an effective Coast Guard needs to be drawn up and funding made available. This could be a public-private partnership involving suitably qualified private security companies.

Regarding maritime terrorism, we provide the following recommendations

- Although we could observe in the last 15 years only a few maritime terrorist attacks, the potential threat should not be underestimated.
- In spite of recent successes and a decline in successful terrorist attacks by Islamist groups the security services need to continue to keep up the pressure and further improve international cooperation to counter this global threat.
- The security and intelligence services need to concentrate both on infiltrating the non-Islamist terrorist groups in their relevant countries (HUMINT) and also step-up Open Source Information (OSINT) Research, requiring relevant linguistic and intercultural skills.

- Governments should consider establishing a National Security Council in their countries, if they have not yet done so, in order to further improve inter-ministerial cooperation and provide a comprehensive security approach.
- Governments should also consider the harmonized use of Armed Forces within the European Union in the event of major terrorist attacks.
- Governments should carefully consider their communications policy with the public. Frequent warnings of impending terrorist attacks, which eventually do not materialize, are not helpful in sensitizing the public.
- Academia can contribute significantly to the activities of the security and intelligence services by helping to analyze the motivation behind fringe terrorist groups and separatist organizations. Such information would be helpful in building up profiles and identifying potential targets of such groups.
- Businesses should realize that certain terrorist groups present a threat to their business continuity. They should also realize that it is impossible for the state to provide adequate levels of security at all times. Reliable private security organizations are in a position to provide businesses with risk assessment and business continuity plans as well as armed and unarmed close protection.

With regard to operational requirements and maritime collaboration, from a European perspective, three recommendations come to mind:

- A “Common Information Sharing Environment” offers national and international collaboration challenges and opportunities and facilitates Maritime Domain/Situational Awareness.
- Civilian-Military cooperation should be enforced following the regional and step-by-step approach, using ongoing and future maritime operations like UNIFIL and anti-piracy operations and their components of Maritime Capacity Building ashore and at sea as another challenge and opportunity.
- Changing the mentality of information sharing from “Need to know” to “Need to Share” and finally “Responsibility to Share”.
 - We know what we know: we have to disseminate what we know to all stakeholders. (PUSH.)
 - We know what we do not know: we have to ask for information and we can do this. (PULL)
 - We do not know what we do not know: it is vital to be part of comprehensive information – sharing network. (PULL and PUSH.)

The mentality shift required clearly constitutes an enormous challenge and can only be achieved by small steps and through an enduring process of building trust and confidence. The purpose of all is Maritime Security.

Remarks:

Opinions expressed in this contribution are those of the authors.

A shorter version of this analysis has been published by the Singapore office of the Konrad Adenauer Foundation. See: <http://www.eu-asia.eu/publications/maritime-piracy-and-security/>

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Since retirement, Admiral Feldt has occupied several posts of honor. He was president of the German Maritime Institute until June 2012 and is now a member of its board. From 2008 until 2009, he was working for the European Commission (from 2008 till 2009) as advisor for the “Instrument for Stability”. From July 2009 to December 2010, he served the European Defence Agency as member of the Wise Pen Team, working on topics of maritime surveillance and maritime security. Since August 2011, Admiral (rtd.) Feldt, in his function as the Director of the Wise Pens International, and his team are working on a study dealing with future maritime capabilities of the European navies.



Since January 2006 Dr. Peter Roell is President of the Institute for Strategic, Political, Security and Economic Consultancy (ISPSW) in Berlin.

Before, he served as senior advisor for foreign and security policy at the Permanent Representation of the Federal Republic of Germany to the EU in Brussels. In Germany, Dr. Roell also served as director of the Asia-Pacific, Latin America and Africa (Sub-Sahara) branch and at German embassies in the Near and Middle East and in Asia.

Dr. Roell is an ancien of the NATO Defence College in Rome and the Federal College for Security Policy Studies (BAKS) in Berlin.



Ralph D. Thiele is Chairman of the Political-Military Society in Berlin.

In 40 years of politico-military service, Colonel Thiele has gained broad political, technological, academic and military expertise. He has been directly involved in numerous national and NATO strategic issues while serving as executive officer to the Bundeswehr Vice Chief of Defence Staff, Military Assistant to the Supreme Allied Commander Europe, in the Planning and Policy Staff of the German Ministry of Defence, as Chief of Staff of the NATO Defence College, as Commander of the Bundeswehr Transformation Centre and as Director of Faculty at the German General Staff and Command College in Hamburg.

He is a member of the German Atlantic Association and member of the Defence Science Board of the Austrian Ministry of Defence.