

THE CONSTANTINE G. KARAMANLIS CHAIR
IN HELLENIC AND EUROPEAN STUDIES

The Maritime Dimension of European Security

Strategies, Initiatives, Synergies

Ioannis Parisis, PhD

**THE CONSTANTINE G. KARAMANLIS CHAIR
AT THE FLETCHER SCHOOL OF LAW AND DIPLOMACY**

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“How important is maritime security? Ask the Greeks! They faced odds of about three to one at the Battle of Artemisium, the sea side of the Battle of Thermopylae. They survived, due partly to good luck, and lived to fight another day at the Battle of Salamis, where they defeated the invading Persians for good. The Greek ability to secure their maritime domain may have saved western civilization as we know it today.”

U.S. Department of States, official website¹

¹ “Maritime Security, Sea Power and Trade”, *U.S. Department of States*, by Tom Kelly, Acting Assistant Secretary, Bureau of Political-Military Affairs, U.S. Naval War College, March 25, 2014.

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He is founder and president of the Academy for Strategic Analyses (ASA), based in Athens, Greece (www.acastran.org)

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Abstract

In the European Council summit of June 2014, the text of the European Maritime Security Strategy (EUMSS) was adopted. It covers both the internal and external aspects of the EU's maritime security, serving as comprehensive framework, which contributes to a stable and secure global maritime domain.

This paper explores the importance of the maritime security in general and especially for Europe and identifies current and predicted threats encountered in this field. Practically, it constitutes an analysis of the current general status of maritime security in the area around Europe and beyond it. It also analyzes the pursuit of the efforts and initiatives undertaken by the European Union, Third countries and international organizations, as well as the strategies launched in the domain of the maritime security.

Main focus is on the process to the newly adopted EUMSS and its objectives, as well as on the Action Plan for its implementation, adopted by the Council of the EU in December 2014. The role of the European Union's CSDP and NATO to ensure maritime security and the cooperation between the two organizations in maritime security issues are also examined. Furthermore, this work analyzes the necessities of the EU and its priorities in the maritime security domain, as well as the contribution of satellite systems in maritime surveillance.

Keywords: *Maritime security, maritime safety, Europe, Mediterranean, surveillance, cooperation, maritime strategy, navigation, maritime terrorism, immigration, anti-piracy, counter piracy, Gulf of Aden, Gulf of Guinea, maritime piracy, pirate attacks, Somalia, maritime surveillance, NATO, African Union, United Union, UNCLOS, FRONTEX, cyberspace, Copernicus.*

INTRODUCTION

The adoption of the European Maritime Security Strategy (EUMSS), a requirement set by the European Council of December 2013, was among the main issues encountered by the EU, during the Hellenic Presidency of the Union, in the first semester of 2014. After years of economic crisis, geopolitical attenuation and military restrictions, a maritime security strategy could give the European Union a new impetus in order to adapt to the evolving and changing global security environment.

The freedom of navigation of ships and with their freedom of access to all parts of the world, beyond its obvious military and political dimension, primarily serves the unhindered conduct of trade, a crucial parameter for the operation of the world economy and the global market, given that two-thirds of world trade is carried out by sea. Moreover, the geostrategic dimension of the freedom and security of the sea lines of communication should not be forget. Freedom of shipping on the one hand means the free development of economic activities; on the other hand, it also means economic and social prosperity for all mankind. The first concerns the business community while the second has to do with consumers.²

The *United Nations Convention on the Law of the Sea* (UNCLOS) is the international agreement that resulted from the third United Nations Conference on the Law of the Sea (UNCLOS III), which took place between 1973 and 1982. The UNCLOS was an attempt to facilitate international communication by sea without infringing the sovereign rights of coastal states. It takes account, among others, of some important factors: protection of human life at sea, shipping safety, maritime security, and protection of the marine environment.

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

² "The Passage of Ships through Straits", *Defence Analyses Institute*, Conference Proceedings, Athens, 23 October 1999.

consist the *maritime domain*³. Many of the current threats in the maritime domain – terrorism, proliferation of weapons of mass destruction, illegal trafficking in drugs, people and arms, piracy – are of a transnational or global nature, and therefore require a concerted approach.

The creation and maintenance of security at sea to facilitate prosperity by encouraging free and unrestricted access to the sea from illegal actions and its use by terrorists, pirates and other criminals⁴, is referred as *maritime security*. It involves many actors, such as governments, international organisations, law enforcement agencies, transport organisations, security companies, armed forces, energy infrastructures, maritime industry and space based surveillance systems.

Maritime security involves protection from direct threats to the territorial integrity of a State, such as an armed attack from a military vessel. Most definitions also usually include security from crimes at sea, such as piracy, armed robbery against ships, and terrorist acts. However, intentional and unlawful damage to the marine environment, including from illegal dumping and the discharge of pollutants from vessels, and depletion of natural resources, such as from *Illegal Unreported and Unregulated* (IUU) fishing, can also threaten the interests of States, particularly coastal States. Various approaches have been taken to maritime security, depending on the State's perspective of the interests that may be threatened, either directly or indirectly, by activities in the oceans and seas. The concept of "maritime security" focuses on enhancing sustainable socio-economic development, the condition that reflects the freedom of public and private entities to conduct legitimate activities such as the exercise of sovereign and jurisdictional rights, resource extraction, trade, transport and tourism, free of threats or losses from illegal acts or aggression.

Maritime safety is principally concerned with ensuring safety of life at sea, safety of navigation, and the protection and preservation of the marine environment. In this sense, it focuses on the safety of ships and their crews at sea and when entering ports. The shipping industry has a predominant role in that regard and many conditions must be fulfilled before a vessel can be considered safe for navigation: vessels must be safely constructed, regularly

³ U.S. NSPD-41 and HSPD-13, in "Combating Maritime Terrorism", *U.S. Coast Guard*, Strategic Plan, 2006.

⁴ Deborah Sanders, *Maritime security in the Black Sea: can regional solutions work?*, Routledge Taylor & Francis Group, 2009.

surveyed, appropriately equipped and adequately manned; crew must be well trained; cargo must be properly stowed; and an efficient communication system must be on board.⁵ The concept of “maritime safety” focuses on enhanced sustainable socio-economic development, the condition that reflects the ability of public and private entities to conduct legitimate activities such as territorial protection, resource extraction, trade, transport and tourism, free of threats or losses from accidents, negligence, natural and man-made disasters.

A **secure** maritime space is certainly a **safer** one, and a maritime regime that prioritizes safety is less vulnerable to criminal activity and other threats to security. Efforts to enhance either maritime security or safety thus have cascading effects on the conduct and regulation of other activities in the oceans. Those regimes also share the need for cooperative efforts at all levels to enhance their effectiveness and address new challenges.⁶

Maritime security operations (MSO) are defined as those measures performed by the appropriate civilian or military authorities and multinational agencies to counter the threat and mitigate the risks of illegal or threatening activities in the maritime domain, so that they may be acted upon in order to enforce law, protect citizens and safeguard national and international interests.⁷ MSO are the actions of modern naval forces to “combat sea-based terrorism and other illegal activities, such as hijacking, piracy, and slavery, also known as human trafficking.” Ships assigned to such operations may also assist seafaring vessels in distress. These activities are part of an overall category of activities which fall short of open warfare called military operations other than war (MOOTW). A primary component of MSO requires inspections and, at times, forced boarding of vessels at sea. These actions are called visit, board, search, and seizure (VBSS).

Illegal actions at sea have a history as long as ships have gone to sea, in particular piracy and armed robbery against ships. From the Caribbean, to the pirates of Barbary Coast in Africa. The protection of shipping from Barbary pirates in the late 18th and early 19th centuries, was of the first maritime

⁵ UN General Assembly (2008) “Report of the Secretary General, Oceans and the law of the Seas”, A/63/63, p.44.

⁶ UN General Assembly (2008) “Report of the Secretary General, Oceans and the law of the Seas”, A/63/63, p.15.

⁷ Developing a European Interagency Strategy for Maritime Security Operations a paper supported by the Chiefs of European Navies, May 2006.

security operations in the Mediterranean Sea. The two Barbary Wars were fought in 1801-05 and 1815 respectively, by the United States Navy against the “Barbary states” - the petty North African Ottoman provinces (Algiers, Morocco, Tripoli and Tunis). The reason was to ensure the maritime security, especially the secure sea lines for the merchant ships of the United States in the Mediterranean basin. The Americans who were commercially active in the Mediterranean, suffered numerous humiliations at the hands of the pirates, and were forced to pay substantial amounts of tribute to them.

Reference to *«the shores of Tripoli»* in the first stanza of the US Marine’s Hymn is a recognition of the role of the US Marines in a campaign against the Pasha of Tripoli (the capital of Libya today), during the First Barbary War⁸. In 1805, a mixed force of nine US marines under the command of a



lieutenant, a company of 40 Greeks, fully armed and led by two captains, and Arab, and Berber mercenaries marched across the desert from Egypt, and on 27 April assaulted and captured the Tripolitan city of Derna in the Mediterranean coast, supported by US naval gunfire. It was the first time the US flag had flown over a foreign battlefield. The purpose of this operation was to force the Pasha of Tripoli to release the captain and the 307 crew of the US frigate “Philadelphia” captured by Tripolitan gunboats, and for whom he was asking for \$200,000.⁹

⁸ See also the article “The Geopolitics of the Mediterranean” by Joseph S. Roucek, *American Journal of Economics and Sociology*, Vol. 13, No. 1, Oct., 1953, pp. 71-86)

⁹ A wide analysis at: “[The first US Marine’s operation in the Mediterranean - A Greek-assisted attack in the Battle of Derna](http://parisis.wordpress.com)”, by Dr. I. Parisi (<http://parisis.wordpress.com>)

The European Union and its partners are promoting maritime safety and security in a number of regions through several policy instruments, the development and financing of various programmes and initiatives. At the moment these activities are mostly focused on eradicating piracy thus contributing to enhanced maritime security.

The increased number of piracy attacks in hot spots around the world – but mostly in the Horn of Africa due to its specific “business model”, media attention, publicity and popularity – introduced and led to a boom in the provision of private security in the maritime domain. Ship owners began to engage the services of Private Maritime Security Companies (PMSCs) – as part of the shipping industry’s Best Management Practices for Protection Against Somalia Based Piracy (BMP) - due to the efficiency of the practice in practical terms: officially, no ship carrying armed guards has as yet been hijacked. In addition to the armed and unarmed security escorts for ships transiting high risk areas, PMSCs also provide services in security intelligence, risk assessment and consulting, crisis response and intervention.¹⁰

¹⁰ The global trend of the privatisation of maritime security in the contemporary globalised environment, is highlighted by Cpt I. Chapsos, Research Fellow in Maritime Security at the Centre for Peace and Reconciliation Studies at Coventry University, in: “The Privatisation of Maritime Security in Greece”, by Captain (ret.) Ioannis Chapsos, *Maritime Security Review – In Depth*, No.10 - 15 February 2013.

THE GLOBAL MARITIME SECURITY DOMAIN

Recognizing Needs, Assessing Necessities

Maritime security is an issue of fundamental importance for economic growth around the world, at local, regional and international level. The sea-based trading system, mainly developed by countries with sea borders, provides access to and distribution of energy resources, raw materials and all kinds of products worldwide. Today, almost 80% of goods are transported by ship internationally, as well as by the creation of supply chains, which ensure the safe flow of goods on international markets.

For the European Union and for the countries on its periphery maritime issues are extremely important. The European maritime interests are fundamentally linked to the well-being, prosperity and security of its citizens and communities. Some 90% of the EU's external trade and 40% of its internal trade is transported by sea. The EU is the third largest importer and the fifth global producer of fisheries and aquaculture.

More than 400 million passengers pass through EU ports every year, mainly in the Mediterranean region. Open and safe seas and oceans secure free trade, transport, tourism, ecological diversity and economic development. Failing to protect against a wide array of maritime threats and risks may result in the seas and oceans becoming arenas for international conflicts, terrorism or organized crime.¹¹

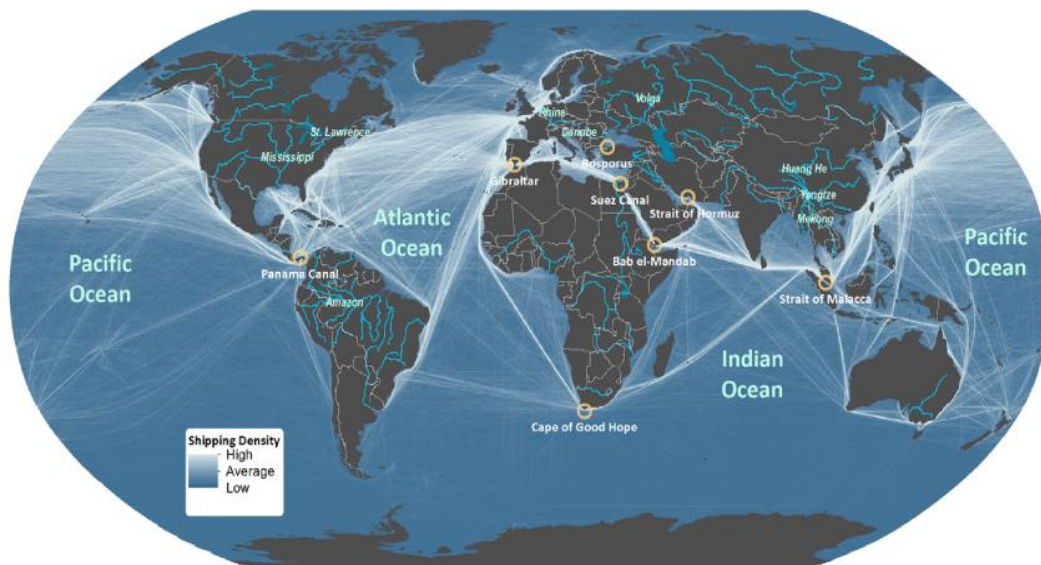
Europe is characterized by a unique maritime geography, having many peninsulas and islands surrounded by several seas. Of the 28 Member States of the European Union, 23 are coastal states and 26 are Flag States¹², while

¹¹ “*For an open and secure global maritime domain: elements for a European Union maritime security strategy*”, JOIN/2014/09 final.

¹² **Flag state** of a commercial vessel is the state under whose laws the vessel is registered or licensed. The flag state has the authority and responsibility to enforce regulations over vessels registered under its flag, including those relating to inspection, certification, and issuance of safety and pollution prevention documents. As a ship operates under the laws of its flag state, these laws are used if the ship is involved in an admiralty case. (Wikipedia)

more than 200 million European citizens live near coastlines, stretching from the North-East Atlantic and the Baltic to the Mediterranean and Black Sea. These European coastal states are responsible for the control of a coastline over 90,000 kilometres in length, border two oceans and four seas, in addition to overseas territories and national security installations throughout other oceans. They together have more than 1200 commercial ports; more than 8,100 flagged vessels (over 500 GT)¹³; 4300 registered maritime companies; there are 764 big ports and more than 3,800 port facilities. There are 80 Registered Security Operators appointed by the Member States.¹⁴

Moreover, three major European seaports (i.e. Rotterdam, Hamburg and Antwerp) accounted in 2010 for 8% of overall world traffic volume. Additionally, these seaports handled more than 50% of the entire European waterborne foreign container trade. The main European seaports carried in 2009



Global Maritime Shipping Density

(Source: Prof JP Rodrigue, Hofstra University, Hempstead, New York)

¹³ In the world ranking list of April 2014, 4,894 of them belong to the **Greek**-owned fleet with 291,735,318 deadweight tonnage (dwt) and 168,922,455 gross tonnage (gt). **Japan** ranked second with 8,357 ships, 242,640,509 dwt and 159,401,728 gt, while **China** ranked third with 6,427 ships, 190,601,765 dwt and 116,675,336 gt. The top five list was filled by **Germany** with 4,197 ships, 126,355,373 dwt and 95,052,148 gt, and **South Korea** with 2,651 ships, 83,534,652 dwt and 52,870,979 gt.

¹⁴ “Towards an EU integrated approach to global maritime security”, EEAS, Press Release, 140306/02, 6 March 2014.

17,2% of the international exports and 18% of the imports.¹⁵ The European economy is therefore critically dependent upon the maritime movement of cargo and passengers. The power of the European Union is strongly linked to the sea. This fact provoked multiple motivations for navigation in the oceans, commercial activities and technological innovations. Maritime security is therefore, one of the most important dimensions of the world and human security in general. It poses multidimensional impacts to global security, and in turn has important effects on key issues such as food, energy and economic security.

With a coastline of 70,000 kilometers, the EU has vital maritime interests: security of global maritime flows, safety of maritime transport, fish, energy resources etc. Protecting the world's maritime routes and lines of communication is an essential dimension of the EU's security. The development of an active approach to the varied challenges and threats to the maritime security (terrorism, transnational crime, piracy, environmental degradation, depletion of marine resources etc.) is required by the EU in its neighbourhood and other zones.

Compared with the air and land maritime domain has relatively few access barriers and provides an expansive pathway for a wide spectrum of threats. Maritime security is referred to the following **specific threats**:¹⁶

- Piracy and armed robbery against ships
- Terrorist acts involving shipping, offshore installations and other maritime interests
- Illicit trafficking in arms and weapons of mass destruction
- Illicit traffic in narcotic drugs and psychotropic substances
- Smuggling and trafficking of persons by sea
- Illegal, unreported and unregulated fishing
- Intentional and unlawful damage to the marine environment
- Cyber threats for shipping

¹⁵ Eurostat database: Trade in goods, by main world traders (tet00018), accessed on 02/08/2011, in "Analysis of cyber security aspects in the maritime sector", ENISA, November 2011.

¹⁶ UN General Assembly (2008) "Report of the Secretary General, Oceans and the law of the Seas", A/63/63, pg. 17-33.

Furthermore, maritime security includes various **areas of interest**, such as:¹⁷

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

Maritime piracy

The maritime piracy constitutes a major threat for regional stability. In the modern era, piracy and armed robbery at sea recurred off the west and east coasts of Africa, as well as Southeast Asia, gained media attention internationally, because of the human and economic damages. Piracy has re-emerged as a global security threat, most recently in the waters off the Horn of Africa, but also in West Africa, the waters off India, the South China Sea and the Caribbean. Pirates tend to operate in regions with large coastal areas, high levels of commercial activity, small national naval forces, and weak regional security co-operation mechanisms.

According to article 101 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) piracy is defined as:

“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:

(i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;

(ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State; 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

¹⁷ “Maritime Security – Perspectives for a Comprehensive Approach”, *Institut für Strategie- Politik- Sicherheits- und Wirtschaftsberatung (ISP SW)*, by Lutz Feldt, Dr. Peter Roell, Ralph D. Thiele, Berlin, April 2013.

aircraft; any act inciting or of intentionally facilitating an act described in sub-paragraph (a) or (b).”

An international body which deals with piracy is the *International Maritime Bureau (IMB)*, a specialized department of Commercial Crime Services (CCS), the anti-crime arm of the International Chamber of Commerce (ICC) based in London. In particular, IMB’s responsibilities lie in fighting crimes related to maritime trade and transportation, particularly piracy and commercial fraud, and in protecting the crews of ocean-going vessels. The bureau, endorsed by the UN’s International Maritime Organisation (IMO), was founded in 1981. IBM defines piracy as: “...*an act of boarding or attempting to board any ship with the apparent intent to commit theft or any other crime and with the apparent intent or capability to use force in furtherance of that act...*”

IBM has also “observer status” with Interpol and a MOU with the World Customs Organization (WCO) an independent intergovernmental body whose mission is to enhance the effectiveness and efficiency of Customs administrations. It created the *IMB Piracy Reporting Centre (PRC)* in 1992, based in Kuala Lumpur, Malaysia, which maintains a round-the-clock watch on the world’s shipping lanes, reporting pirate attacks to local law enforcement and issuing warnings about piracy hotspots to shipping. The IMB Piracy Reporting Centre is the world’s only independent office to receive reports of pirate attacks 24-hours-a-day from across the globe.

Furthermore, we observe the emergence of more challenges of the maritime security in the seas of Africa, but in the Mediterranean as well: illegal unreported and unregulated fishing, deposition of toxic waste and trafficking of humans, arms and drugs. On the other hand, the discovery and exploitation of hydrocarbons in maritime areas engendered new conditions for the protection of the EU’s vital interests.

Maritime terrorism

The maritime terrorism is another serious threat against security in the maritime domain. What we mean by the term “maritime terrorism”? In general terms, it means terrorism at the sea, or in other words, terrorist attacks directed against assets in the maritime domain. According to the Council for

Security Cooperation in the Asia Pacific (CSCAP) Working Group¹⁸, maritime terrorism refers to “...*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.*”

Maritime terrorism includes attacks or threat of attacks against vessels (warships, cruise liners, tankers and other carriers, tugboats and barges), harbour attacks, fixed land based targets near ports - oil refineries, oil storage depots, other port infrastructure, energy pipelines and undersea cables - and hijacking of commercial/passenger ships on high seas. This also includes putting obstructions such as sinking a large ship in choking points in critical sea lanes of communication to disrupt global trade and commerce.

Terrorists can develop effective attack capabilities relatively quickly using a variety of platforms, including¹⁹:

- explosives-laden suicide boats and light aircraft;
- merchant and cruise ships as kinetic weapons to ram another vessel, warship, port facility, or offshore platform;
- commercial vessels as launch platforms for missile attacks;
- underwater swimmers to infiltrate ports; and
- unmanned underwater explosive delivery vehicles.

Mines are also an effective weapon because they are low-cost, readily available, easily deployed, difficult to counter, and require minimal training. Terrorists can also take advantage of a vessel's legitimate cargo, such as chemicals, petroleum, or liquefied natural gas, as the explosive component of an attack. Vessels can be used to transport powerful conventional explosives or WMD for detonation in a port or alongside an offshore facility.

Trafficking by sea

a. *Illicit trafficking by sea of small arms and of biological, chemical or nuclear weapons* constitutes one of the major threats to maritime security. The Security Council has recognized that the dissemination of illicit small arms and light weapons has hampered the peaceful settlement of disputes,

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

¹⁹ The (U.S.) National Strategy for Maritime Security, September 2005, in “Combating Maritime Terrorism”, *U.S. Coast Guard*, Strategic Plan, 2006.

fuelled disputes into armed conflicts and contributed to the prolongation of armed conflicts.²⁰ The General Assembly has also recognized that the absence of common international standards on the import, export and transfer of conventional arms is a contributory factor to conflict, the displacement of people, crime and terrorism, thereby undermining peace, reconciliation, safety, security, stability and sustainable development²¹.

b. *Illicit traffic in narcotic drugs and psychotropic substances* by sea poses a serious threat to maritime security. It has been reported that approximately 70 per cent of the total quantity of drugs seized is confiscated either during or after transportation by sea.

c. *Smuggling and trafficking of persons* by sea refers to clandestine immigrants and victims of trafficking who enter countries every year without authorization, including smuggled migrants and victims of trafficking. Among the reasons for clandestine migration are escaping from conflict, human rights violations, economic deprivation, natural disasters and depletion of natural resources.

Fishing

Illegal, Unreported and Unregulated (IUU) fishing, because of the food insecurity, has been identified as one of the major threats to international peace and security²². In the context of the fishing sector, overexploitation of fishery resources remains a major challenge to achieving sustainable fisheries, and thus contributes to food insecurity around the world.

Marine environment

Intentional and unlawful damage to the marine environment can threaten maritime security in a variety of ways. The effects of such breaches can manifest in many forms, including as loss of marine habitats, loss of species and reduced fish catch, coral bleaching and decreased biodiversity, and can thus

²⁰ S/PRST/2005/7, Statement by the President of the Security Council, 17 February 2005

²¹ Resolution adopted by the General Assembly on 6 December 2006, 61/89: Towards an arms trade treaty: establishing common international standards for the import, export and transfer of conventional arms

²² See UN General Assembly, 2 December 2004, A/59/565, para. 52: “Current trends indicate persistent and possibly worsening food insecurity in many countries, especially in sub-Saharan Africa. Population growth in the developing world and increased per capita consumption in the industrialized world have led to greater demand for scarce resources. The loss of arable land, water scarcity, overfishing, deforestation and the alteration of ecosystems pose daunting challenges for sustainable development.”

directly impact the social and economic interests of coastal States. This can lead to direct conflict, or exacerbate other causes of conflict, such as poverty, migration, infectious diseases, poor governance and declining economic productivity.²³

Maritime Cyber Security

Cyber security emerges as the hidden threat to shipping. In the age of cyberspace it is expected to exist a cyber-security problem for the maritime domain. Apart from piracy and terrorism and other kinds of threats against navigation, there is a cyber-insecurity on the high seas and ports that threatens international shipping. This problem has been recognized by those responsible for maritime security and has been discussed at conferences and competent authorities.

The threat to global shipping in the future may be people accessing ship-board systems via computers, either on ships or thousands of miles away on land territories. It is recognized that since everyone handles computers, everyone could manage the cyber threats. It is obvious that cyberspace can be used by terrorists along with other terrorist actions at sea.

System components that are potential targets are multiple: the terminal operating system contains the location of containers and destination directions for unmanned vehicles. It has been deemed entirely feasible that pirates could hack a ship's system and redirect it. The location system of the vessels could be used to misdirect vessels with terrible consequences. Malfunctioning of the port community system could prevent clearance and disrupt logistic flows. Failing radar systems would prevent proper vessel traffic management. Failing communication networks could cause various types of accidents, and endanger emergency response. On board vessels there is a growing reliance on electronic systems. There is a longstanding fear that terrorists may hack into systems and cause, at best, chaos and, at worst, a real disaster.

In particular, critical infrastructures²⁴ such as ports, due to their interconnections and dependency on information and communications technology

²³ North Atlantic Treaty Organization, *The Environment and Security*, 2005, available from <http://www.nato.int>.

²⁴ Critical infrastructures include physical facilities, supply chains, intangible assets, communication networks etc. whose destruction or unavailability for an extended period would seriously impact the health, safety, security or economic wellbeing of that country, its citizens and expats, or could cause a large scale loss of life, major social disturbance or mass casualties. (*Port Technology International, Edition 61: February 2014*).

(ICT) systems and the internet, are increasingly vulnerable to cyber-attacks. In the European Union, sea ports play an important role facilitating the Union's external trade and internal market exchanges. Industries and services belonging to the maritime sector contribute between three and five percent of EU's GDP, and maritime regions produce more than 40 percent of this. They are key for the sustainable growth of transport in Europe.²⁵

ENISA, the *European Union Agency for Network and Information Security*, has published the first EU report ever on cyber security challenges in the maritime domain. It is an analysis which highlights essential key insights, as well as existing initiatives, as a baseline for cyber security. According to ENISA's report, cyber threats are a growing menace, spreading to all industry sectors that rely on ICT systems while it finds that maritime cyber security awareness is currently low, to non-existent. EU member states are thus highly recommended to undertake targeted maritime sector awareness raising campaigns and cyber security training of shipping companies, port authorities, national cyber security offices, etc.²⁶

As current maritime regulations and policies consider only physical aspects of security and safety, policy makers should add cyber security aspects to them. ENISA strongly recommends a holistic, risk-based approach; assessment of maritime-specific cyber risks, as well as identification of all critical assets within this sector. As maritime governance is fragmented between different levels (i.e. international, European, national), the IMO together with the EU Commission and the Member States should align international and EU policies in this sector.

One of the key issues in the cyber security field is the adoption of electronic charts. The *Safety of Life at Sea (SOLAS) Convention Chapter V Regulation 19.2* requires all ships engaged on international voyages to be fitted with an *Electronic Chart Display and Information System (ECDIS)* by 2018. However, if these systems are not installed properly – for instance, they are not isolated from the rest of the ship's IT systems by a firewall – they could

The U.S. Coast Guard defines maritime critical infrastructure as “*facilities, structures, systems, assets or services so vital to the port and its economy that their disruption, incapacity, or destruction would have a debilitating impact on defense, security, the environment, long-term economic prosperity, public health, or safety of the port.*” (“Combating Maritime Terrorism”, *U.S. Coast Guard, Strategic Plan*, 2006).

²⁵ “The implications and threats of cyber security for ports”, by Norbert Kouwenhoven, Martin Borrett, and Milind Wakankar, *Port Technology International, Edition 61: February 2014*.

²⁶ “Analysis of cyber security aspects in the maritime sector”, ENISA, November 2011

be subject to hacking, potentially diverting the ship off course.²⁷ The cyber threat for shipping is real and the results probably disastrous.

Energy security

Energy security is linked directly with maritime security. The means of transportation is a key element of energy infrastructure that needs protection. Attacks on energy vessels represent a significant percentage of overall maritime piracy attacks. Most pirate attacks – including those on energy vessels – are cases of simple robbery at sea, with pirates boarding and robbing the ship while in port, or from small speedboats while the vessel is underway. There is also a trend in hijacking and kidnapping for ransom.

While there has been little evidence until very recently that energy vessels are targeted per se for hijacking, there have been a few notable cases where tankers have been hijacked and the crews held for ransom. There have also been cases where the cargo was clearly the main objective of the piracy.²⁸

Terrorism is also of serious concern in energy security. Of course, pipelines may be the most popular terrorist target, but tankers transporting oil are also vulnerable. Oil transported by sea generally follows a fixed set of maritime routes where tankers encounter several geographic “chokepoints”, such as the Strait of Hormuz in Persian Gulf, the Bab-el-Mandab and the Strait of Malacca. In the Mediterranean region there are also important maritime chokepoints: the Suez Canal and the Bosphorus/Dardanelles Straits. The importance of these chokepoints are critical to the energy transportation because so much oil passes through them, and as they are narrow could be blocked or attacked by terrorists or pirates, or to be susceptible to shipping accidents.

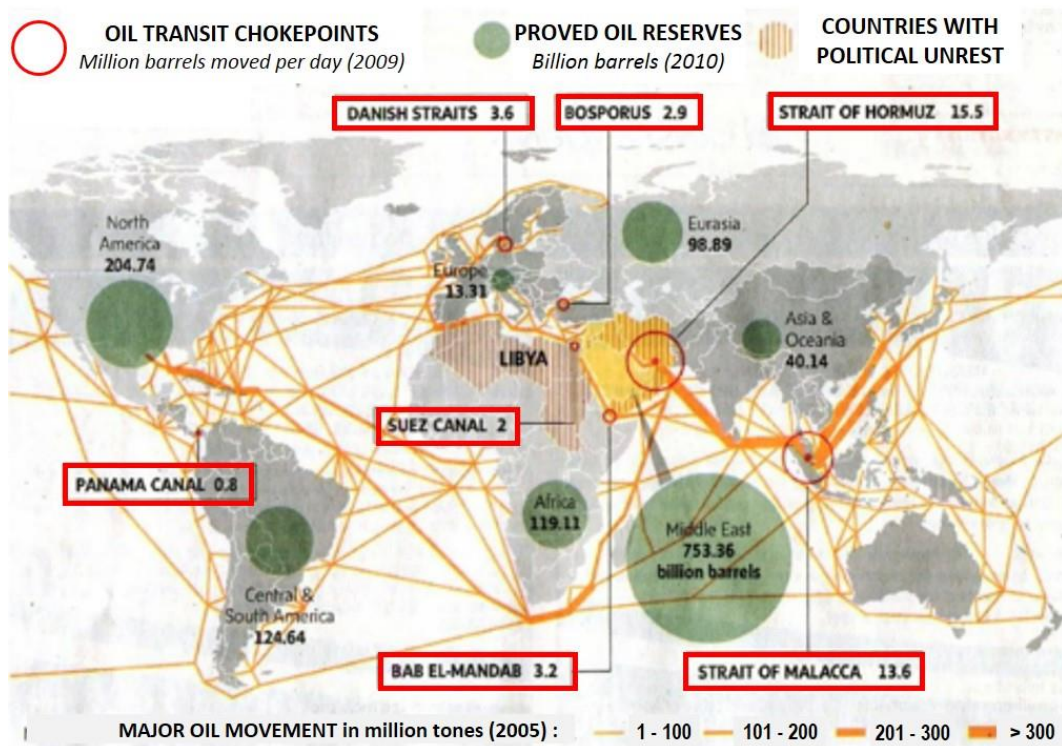
Offshore oil & gas installations may soon become the target-of-choice for international terrorism, irrespective of the political system and social-financial boundary conditions of the society under attack. In response to the threats posed by piracy and global terrorist groups, oil & gas companies take decisive action to ensure the safety and security of their vital offshore assets.

²⁷ Steven Jones, Maritime Director of Security Association for the Maritime Industry (SAMI), at the conference “Seaworthiness and cyber security – the hidden threat to shipping”.

²⁸ “Maritime Piracy: Implications for Maritime Energy Security”, Donna J. Nincic, *IAGS Journal of Energy Security*, 19 Feb 2009 (<http://ensec.org>).

A comprehensive security management system, incorporating the latest automation, surveillance and alarm technologies and integrating a common user interface for security and operating personnel, offers an effective solution for the growing security challenges in today's offshore operating environment.

OIL TRANSIT CHOKEPOINTS



Source: Reuters, US Energy Information Administration (EIA),
International Tanker Owners Pollution Federation

Chokepoints are a critical part of global energy security due to the high volume of oil traded through their narrow straits. In addition, chokepoints leave oil tankers vulnerable to theft from pirates, terrorist attacks, and political unrest in the form of wars or hostilities as well as shipping accidents that can lead to disastrous oil spills.²⁹

²⁹ "World Oil Transit Chokepoints", Energy Information Administration (EIA), 10/11/2014, Press release.

Maritime security is essential to maintaining the flow of revenues from oil and gas. In 2014, the EU imported 53% of the energy it consumes. Energy import dependency related to crude oil (almost 90%), to natural gas (66%), and to a lesser extent to solid fuels (42%) as well as nuclear fuel (40%).³⁰ Ensuring the vital lanes of communication contribute to enhancing the security of energy shipments. In addition, the global oil and gas sector is composed of multinational companies who engage in exploration, drilling and production and a diverse range of specialist operators who undertake functions such as drilling, capping, servicing, transporting, and provide heliports and pipelines. These global operations are subject to international law as well as the law of the country in whose waters the operations are taking place.

International Maritime Legislation and Regulations

The legal framework for maritime security is referred to the international law that evolves to support and promote the relevant activities.

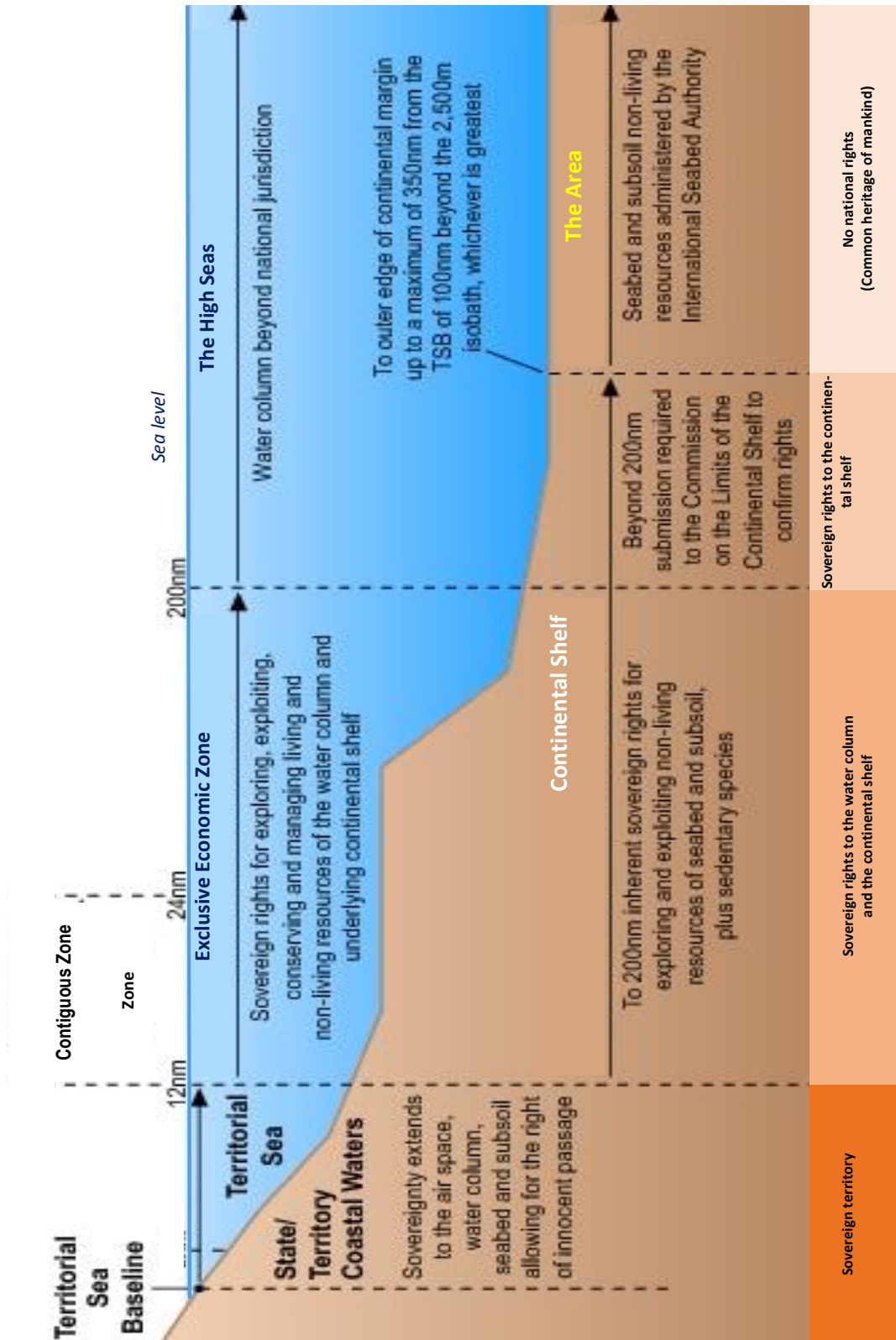
UNCLOS offshore zones

The United Nations Convention on the Law of the Sea (UNCLOS) is the international agreement that resulted from the third United Nations Conference on the Law of the Sea (UNCLOS III), which took place between 1973 and 1982. It defines the rights and responsibilities of states in their use of the world's oceans, and establishes a framework for the conduct of maritime commerce, the environment, and the management of marine natural resources.³¹

The Convention sets the geographical limits of maritime zones, and establishes rights and discretionary and non-discretionary responsibilities of coastal States.

³⁰ COM/2014/0330 final, *European Energy Security Strategy*, Brussels, 28/5/2014.

³¹ The UNCLOS has been not ratified by: Afghanistan, Bhutan, Burundi, Cambodia, Central African Republic, Colombia, El Salvador, Ethiopia, Iran, Democratic People's Republic of Korea, Libya, Liechtenstein, Niger, Rwanda, Swaziland, United Arab Emirates, and United States. It has also been not signed by: Andorra, Azerbaijan, Ecuador, Eritrea, Israel, Kazakhstan, Kyrgyzstan, Peru, San Marino, South Sudan, Syria, Tajikistan, Timor-Leste, Turkey, Turkmenistan, Uzbekistan, Venezuela.



Five offshore zones are defined by the UNCLOS and extend from a baseline, which is normally the low-water line along the coast of a country:

1) The *territorial sea* which extends up to 12 nautical miles from its baseline. Except for innocent passage and other rules of international law, a state has sovereignty over this area.

2) The *contiguous zone* which extends from 12 nautical miles from the outer edge of the territorial sea up to 24 nautical miles from the baseline. In the contiguous zone, a state may enforce customs, fiscal, immigration or sanitary laws and regulations.

3) The *Exclusive Economic Zone (EEZ)* which extends to a maximum of 200 nautical miles from the baseline, unless it is curtailed by a maritime boundary with another state. A coastal state has exclusive jurisdiction over all natural resources, living and non-living, within its EEZ, including fishing, mining and oil and gas exploration and exploitation.

4) The *continental shelf* which is a legal and a geographical phrase. In its legal use, as set out under UNCLOS, a coastal nation may claim rights over the OCS beyond its EEZ according to a complex formula set out in UNCLOS. The result is that if the continental shelf is continuous offshore, then the coastal state may lodge a claim, with the relevant commission under UNCLOS, over up to a maximum of 350 nautical miles from the baseline or 100 nautical miles from the 2,500 metre depth contour line. A coastal nation has control of all natural resources in the seabed or subsoil in its OCS (but not in the water column).

5) The *high seas* which includes those areas beyond the jurisdiction of any state, which usually means beyond the EEZ. On the high seas states have very limited powers except in relation to their own ships, aircraft or citizens.

The Straits Regime in International Navigation

The regime of passage through of straits used for international navigation, is defined in the Part III of the UNCLOS (articles 34-45). In this Part of the Convention there are settings applied to straits which are used for international navigation between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone.

In terms of geography there are some aspects of geopolitical and strategic importance, related to the interests of states, the coastal or not. Among them

we can refer to the interest in mobility that is the right to communicate through the straits for economic and defence purposes, and the availability of operating and training areas for naval and air forces. The first is shared by a significant number of states, including maritime states and those whose trade and communications pass through the relevant area. The second is likely to be of main concern to states in the immediate vicinity. A third strategic interest is that of a coastal state in protecting the security of its land territory, including its islands.

On the other side, there is the natural resources aspect of the breadth of the territorial sea which implicates the right to regulate the exploration and exploitation of fisheries and other living resources as well as hydrocarbons and other non-living resources. Under the regime of the continental shelf and the EEZ set forth in UNCLOS, these activities are subject to coastal state sovereign right to very substantial distances beyond the territorial sea.³²

Chokepoints are narrow straits or channels along widely used global sea routes, some so narrow that restrictions are placed on the size of the vessel that can navigate through them. The *Strait of Hormuz*, leading out of the Persian Gulf, and the *Strait of Malacca*, linking the Indian and Pacific Oceans, are two of the world's most strategic chokepoints. The rest of the main chokepoints in the world are the *Suez Canal* and the *Strait Bab-el-Mandab* connecting Europe and Asia, the *Bosporus and Dardanelles* connecting the Black Sea with the Mediterranean, the *Danish Straits*, and the *Panama Canal*. These seven straits serve as major trade routes for global oil transportation, and disruptions to shipments would affect oil prices and add thousands of miles of transit in an alternative direction, if even available.

Physical threats and limitations of chokepoints are referred to the ship size which can pass through, natural disasters as well as piracy and terrorist attacks. In some cases, like in the event of the Bosporus, heavy traffic creates problems for oil tankers. Commercial shipping has the right of free passage through the Turkish Straits in peacetime, although Turkey claims the right to impose regulations for safety and environmental purposes since she has raised concerns over the navigational safety and environmental threats to the Straits. While there are no current alternate routes for westward shipments from the Black and Caspian Sea region, there are several pipeline projects in various phases of development underway.

³² UNCLOS, articles 56, 57, 76, 77.

International Ship and Port Facility Security Code

After the terrorist attacks of 11 September 2001, the International Maritime Organization (IMO) agreed to develop the *International Ship and Port Facility Security Code (ISPS Code)*³³. The ISPS Code covers security measures for ships and port facilities and has been included as an amendment in the *Safety of Life at Sea Convention, 1974 (SOLAS Convention)*³⁴.

The objectives of the ISPS Code are to:

- establish an international framework for cooperation between contracting governments, government agencies, local administrations and the shipping and port industries to detect/assess security threats and take preventive measures against security incidents affecting ships or port facilities used in international trade;
- establish the respective roles and responsibilities of all the parties concerned, at the national and international level, for ensuring maritime security;
- ensure the early and efficient collation and exchange of security-related information;
- provide a methodology for security assessments so as to have in place plans and procedures to react to changing security levels; and
- ensure confidence that adequate and proportionate maritime security measures are in place.

The objectives are addressed in the security plans for each ship and port facility and appropriate security officers and personnel on each ship, in each port facility and in each shipping company implement the objectives. There is enough flexibility in the code to tailor the security measures to the specific risks faced by each ship or port facility. The code has two parts, a mandatory

³³ <http://www.imo.org/ourwork/security/instruments/pages/ispscode.aspx>

³⁴ <http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-%28SOLAS%29,-1974.aspx> SOLAS is one of the oldest maritime safety conventions, the first version having been adopted in 1914 following the sinking of the Titanic. Since then, there have been four more versions of the Convention. The present version was adopted in 1974 and entered into force in 1980, and has subsequently been amended many times to keep it up to date. The *SOLAS Consolidated Edition 2009* provides a consolidated text of the SOLAS Convention, its Protocols of 1978 and 1988 and all amendments in effect from 1 July 2009. It includes new regulations adopted since the 2004 edition was published, including regulation V/19-1 on long-range identification and tracking of ships; regulation II-1/3-8 on mooring and towing equipment; and regulation II-1/35-1 on bilge pumping arrangements.

part that covers the appointment of security officers for shipping companies, individual ships and port facilities, and a guidance and recommendations part that covers the preparation of security plans for ship and port facilities.

The ISPS Code contains three security levels:

- Security Level 1, **normal**: Ships and port facilities normally operate.
- Security Level 2, **heightened**: Applying when there is a heightened risk of a security incident.
- Security Level 3, **exceptional**: Applying for the period of time when there is a probable or imminent risk of a security incident.

Security Zones Provided around Offshore Oil & Gas Facilities

The legal status of offshore oil and gas installations is one of the more difficult areas in international law. The legal status may impact on the jurisdiction that states can exercise over offshore installations and it may affect the applicability of certain maritime law principles and rules to offshore installations.

According to IMO Resolution on “*Safety Zones & Safety of Navigation Around Offshore Installations & Structures*” all ships are required to “comply with generally accepted international standards regarding navigation in the vicinity of artificial islands installations, structures and safety zones.”³⁵

Originally, under Article 60.5 of UNCLOS in 1982 a 500 meters security exclusion zone was established.³⁶ The article stated that a state has the right to establish safety zones around offshore installations up to a maximum distance of 500m and in those safety zones take measures necessary for the protection of offshore installations. Within several countries environment, a similar 500-meter security zone have since been established. However, a 500m

³⁵ IMO Doc. A.671 (16), *Safety Zones & Safety of Navigation Around Offshore Installations & Structures*, Oct, 19, 1989, par.2

³⁶ Article 60. Artificial islands, installations and structures in the exclusive economic zone.

5. The breadth of the safety zones shall be determined by the coastal State, taking into account applicable international standards. Such zones shall be designed to ensure that they are reasonably related to the nature and function of the artificial islands, installations or structures, and shall not exceed a distance of 500 metres around them, measured from each point of their outer edge, except as authorized by generally accepted international standards or as recommended by the competent international organization. Due notice shall be given of the extent of safety zones.

safety zone is considered too narrow to protect offshore installations from deliberate attacks particularly from intentional ramming by a large ship.

It is obvious that the coastal state's authority to protect offshore installations in its EEZ and on its continental shelf is much more limited than in the territorial sea. The principal protection measure for offshore installations available to coastal states under the UNCLOS does not specify the nature or scope of the protection measures that a coastal state can take within safety zones around offshore installations in the EEZ, but it provides that such zones should be reasonably related to the nature and function of an offshore installation.³⁷

Thus, apart this security zone of 500 meters the aforementioned Resolution of IMO consider establishing further safety zones around offshore installations and structures. The inquiry recommends that immediate consideration is given to extending and hardening current security exclusion zone boundaries and arrangements to increase the safety and security of offshore facilities from unlawful or unauthorized intrusion and threat.

More specifically recommended to introduce a new three-tiered approach to security zoning for all offshore facilities, including:

- a. a **cautionary zone** associated with traffic separation schemes, traffic lanes and recommended routes of 15 nautical miles from any offshore facility that requires vessel operators to make and maintain communication with facilities within its radius;
- b. an **area to be avoided** of 5 nautical miles from any offshore facility that acts to prohibit entry into the zone by shipping unrelated to the offshore facilities; and
- c. an **exclusion zone**, within the area to be avoided, of between 1 and 2.5 nautical miles for all shipping that is not directly related with the facility operations and to which access by can only be gained through express approval to enter given by the operator.

Originally, the relevant proposal came in 2007 from Brazil which operates numerous Floating Production, Storage and Off-Loading (FPSO) Units in the South Atlantic and sought larger zones "in order to meet the need for

³⁷ "Protecting Offshore Oil and Gas Installations: Security Threats and Countervailing Measures", by Mikhail Kashubsky, *Journal for Energy Security*, 11 Dec 2013

safety around each peculiar structure.”³⁸ Although there was a general support for the Brazilian proposal in IMO, a number of delegations expressed concern that there were no established IMO procedures or guidelines in place to make determinations for approving safety zones in excess of 500 meters.³⁹

Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation

The Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) or **Sua Act** is a multilateral treaty by which states agree to prohibit and punish behaviour which may threaten the safety of maritime navigation.

The Convention criminalises the following behaviour:

- Seizing control of a ship by force or threat of force;
- Committing an act of violence against a person on ship if it is likely to endanger the safety of the ship;
- Destroying or damaging a ship or its cargo in such a way that endangers the safe navigation of the ship;
- Placing or causing to be placed on a ship a device or substance which is likely to destroy or cause damage to the ship or its cargo;
- Destroying or damaging a ship's navigation facilities or interfering with their operation if it is likely to endanger the safety of the ship;
- Communicating information which is known to be false, thereby endangering the safety of the navigation of a ship;

The Convention was adopted by the International Conference on the *Suppression of Unlawful Acts against the Safety of Maritime Navigation* at Rome on 10 March 1988. It came into force on 1 March 1992 after it had been ratified by 15 states. As of 2014, the Convention has 164 state parties, which includes 162 UN member states plus the Cook Islands and Niue. The 164 states represent 94.5% of the gross tonnage of the world's merchant fleet.

³⁸ IMO Doc. NAV 53/3, *Proposal for the establishment of an Area to be avoided and modifications to the breadth of the Safety Zones around Oil Ring located off the Brazilian Coast – Campos Basin Safety Zone*, Feb. 26, 2007.

³⁹ James Kraska, Raul Pedrozo, *International Maritime Security Law*, Martinus Nijhoff Publishers, Leiden-Boston, 2013

The Protocol for the *Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf* (SUA PROT) was concluded and came into force at the same time as SUA, and it is a supplementary convention to SUA.

A second supplementary Protocol to SUA - the Protocol of 2005 to the Convention for the *Suppression of Unlawful Acts against the Safety of Maritime Navigation* - was adopted in London, on 14 October 2005⁴⁰. The 2005 Protocol adds provisions which criminalises the use of ships to transfer or discharge biological, chemical, or nuclear weapons.⁴¹ It also prohibits ships from discharging oil, liquefied natural gas, radioactive materials, or other hazardous or noxious substances in quantities or concentrations that are likely to cause death or serious injury or damage. Finally, it prohibits the use of such weapons or substances against ships involved in maritime navigation. The 2005 Protocol, which is often abbreviated as “SUA 2005”, came into force on 28 July 2010 and as of December 2014 has been ratified by 32 states.

European Maritime Spatial Planning

In July 2014, the European Parliament and the Council adopted a [legislation to create a common framework for maritime spatial planning in Europe](#). The term of “*maritime spatial planning*” refers to a process by which the relevant EU Member State’s authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives (article 3). While each EU country will be free to plan its own maritime activities, local, regional and national planning in shared seas would be made more compatible through a set of minimum common requirements.

The benefits of the maritime spatial planning are:

- **Reduce conflicts** between sectors and create synergies between different activities.
- **Encourage investment** – by instilling predictability, transparency and clearer rules. This will help boost the development of renewable

⁴⁰ <http://www.state.gov/t/isn/trty/81727.htm>

⁴¹ However, the Protocol specifies that transporting nuclear materials is not an offence if it is transported to or from the territory or under the control of a state party to the [Treaty on the Non-Proliferation of Nuclear Weapons](#).

energy sources and grids, establish Marine Protected Areas, and facilitate investment in oil and gas.

- **Increase coordination** – between administrations in each country, through the use of a single instrument to balance the development of a range of maritime activities.
- **Increase cross-border cooperation** – between EU countries, on cables, pipelines, shipping lanes, wind installations, etc.
- **Protect the environment** – through early identification of impact and opportunities for multiple use of space.

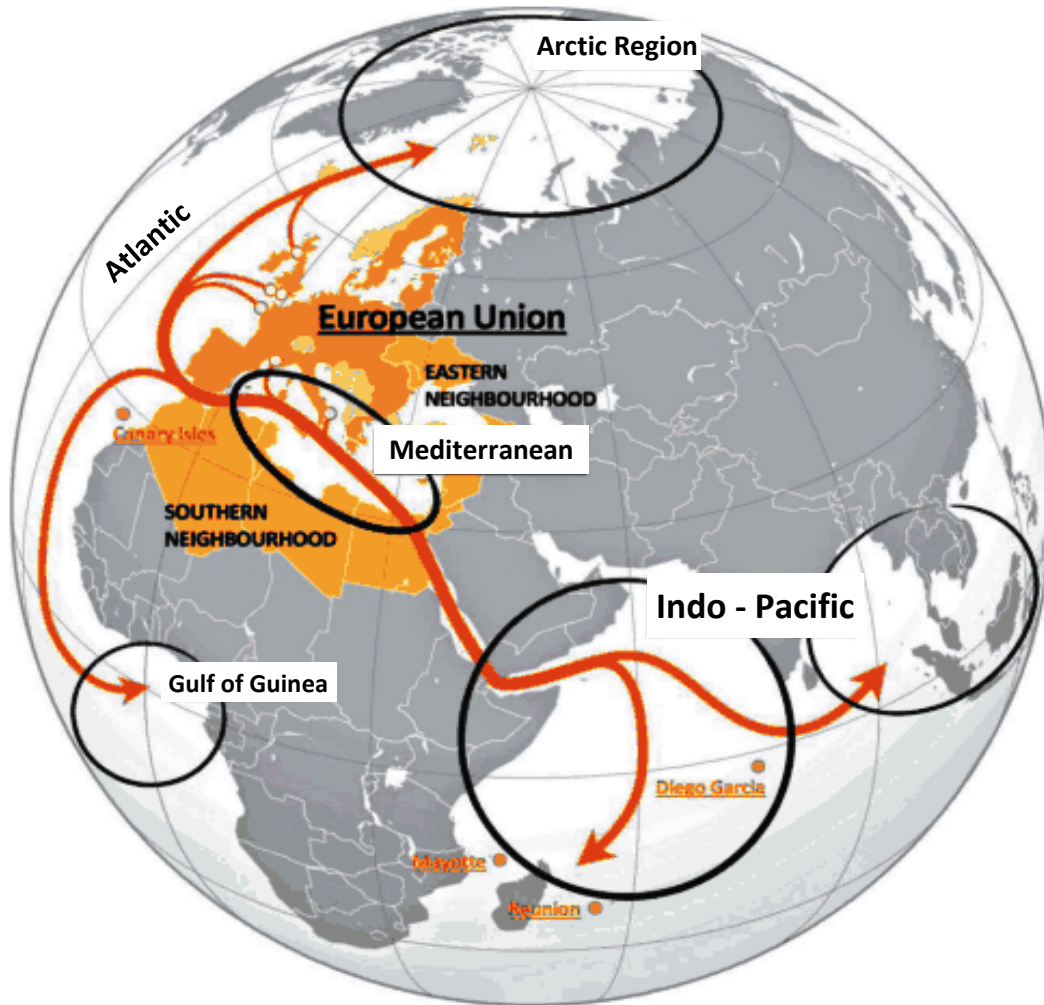
Main Priority Regions for the European Union

There is no doubt that the *Mediterranean Sea*, the *Black Sea* and the *Red Sea* with the *Gulf of Aden* constitute the main priority geographical areas for the European Union, in terms of maritime security. In principle, they constitute the areas through which Europe contact and communicate with the other two vicinity continents: Africa and Asia. Nor should we forget the fact that in these areas there are three of the seven world chokepoints: Bosphorus and the Dardanelles, the Suez Canal, and Bab-el-Mantab Strait. In these areas the Straits of Gibraltar and Hormuz could be added, as well.

Furthermore, the regions of the *Gulf of Guinea*, the *Horn of Africa* and the *Arctic* constitute areas of maritime security importance for the European Union, for the reasons that will be analysed below.

The Mediterranean

The region of the Mediterranean is characterized by numerous actual and potential flash points for conflicts and crises. In terms of security the importance of the Mediterranean is high since crises and instabilities surrounding it. Instability and insurgent network activity across Northern Africa in Algeria, Egypt, Libya, and Mali, Morocco and Tunisia - and the proliferation of that type of activity into and across Europe - has been increasingly worrying security officials in recent years.



Arab riots and the resulting instability situations, the conflicts in Syria and Libya, the increase of terrorism and illegal migration are creating tensions and exacerbate instability and increase dangers and challenges. Despite of the efforts done aiming to enhance the cooperation between the North and the South, the two shores of the Mediterranean have developed a certain antagonism and feeling of distrust toward each other.⁴²

⁴² Basil Germond and Eric Grove, *Maritime Security in the Mediterranean: European and Transatlantic Approaches*, German Marshall Fund of the United States, August 2010.

Most security problems in the Mediterranean basin although are intra-state, they have largely transnational implications, in the sense that they affect the security of many states and their resolution requires multinational cooperation. Furthermore, as the Mediterranean unites a large number of countries, through three strategically significant access points (Bosporus, Suez, Gibraltar), it provides to terrorists, human traffickers, drug and arms dealers, easy access to its long and hard to control coasts. It is also the region where the largest number of illegal immigrants passes, toward Europe.

Energy security is also a concern, as more than 65% of Europe's oil and natural gas imports passing through the Mediterranean. Besides the ships, five submarine pipelines connect the south and the north coasts of the Mediterranean basin delivering the Algerian and Libyan natural gas to Europe (Spain and Italy). A secure and stable environment in the region is important not only to the importing nations but also to the region's energy producers and to the countries through which oil and gas transit. The development of trade, energy pipelines, and human transportation should be carried out in a secure environment.



Five submarine pipelines connect the south and the north coasts of the Mediterranean basin delivering the Algerian and Libyan natural gas to Europe
(Created by the author)

Consequently, the European Union is compelled to promote first of all naval and air forces in the Mediterranean region, in order to secure maritime routes from the main asymmetric security threats: piracy, organized crime, terrorism and extremist action. During the previous years a maritime dimension has developed across several EU policy areas and through EU agencies, e.g. fisheries, marine pollution, maritime transport, maritime surveillance, and energy security, as well as maritime power projection through the *Common Security and Defense Policy* (CSDP). The strategic environment of the Mediterranean represents a significant sector of this policy. The Mediterranean dimension of the CSDP is considered on the one hand as a source of challenges and threats, but also, on the other, as a potential theatre of operations.

Europe's southern maritime border - the Mediterranean - remains one of the most important gateways for those attempting to cross into Europe. The European Union established in 2004 FRONTEX, as a body responsible for the coordination of operational cooperation at European external borders. FRONTEX does not possess aircraft, nor border guards, nor vessels to perform the actual border control at external borders. Its mandate is to support EU member states in protecting their external borders from illegal activities. This may include anything from illegal migration and human trafficking to smuggling of illegal drugs and much more.

The Black Sea

The Black Sea region is a distinct geographical area, rich in natural resources and strategically located at the junction of Europe, Central Asia and the Middle East. With a large population, the region faces a range of opportunities and challenges for its citizens. The region is an expanding market with great development potential and an important hub for energy and transport flows. It is, however, also a region with unresolved frozen conflicts, with many environmental problems and insufficient border controls thus encouraging illegal migration and organised crime.⁴³

In addition, as an energy production and transmission area, has strategic importance for EU energy supply security. It offers significant potential for energy supply diversification and it is therefore an important component of

⁴³ COM(2007) 160 final BLACK SEA SYNERGY - A NEW REGIONAL COOPERATION INITIATIVE, Brussels, 11.4.2007.

the EU's external energy strategy. Energy supply security diversification is in the interest of EU partners in the region, as well as the Union itself.

The Black Sea is bordered by six countries - the three NATO members Bulgaria, Romania and Turkey as well as Ukraine, Russia and Georgia. All these countries have already established Exclusive Economic Zones and currently prepare to develop a regional Strategy for Integrated Coastal Zones Management. It faces a number of maritime security threats that affect European security. The strategic environment of the Black Sea is characterized by major source of insecurity and instability for Europe.

On 20 January 2011, the European Parliament adopted a resolution on an *EU Strategy for the Black Sea*⁴⁴ in which it recalls that the Black Sea region is of geo-strategic importance for the energy security of the EU. The resolution focuses on security issues in this region and underlines the protracted conflicts, displaced populations, bilateral disputes, closed borders and strategic rivalries leading to militarisation and proliferation of arms, weak institutions and governance and the deterioration of democratic rule, cross-border crime and trafficking, etc.

The Black Sea is a new energy lifeline for Europe. Furthermore, this region has its significance in economic, transport and commercial terms, border security, customs and in coordinating multi-agency activities. In this region security should be based on the consent of the littorals, keeping lines of coordination and cooperation open with international security structures.

The Strait of Gibraltar

The ancient Steles (Pillars) of Hercules (or Fretum Herculeum) is also a maritime passage of significant importance for Europe's maritime security, since it controls the navigation from the Mediterranean to the Atlantic, and vice versa. Gibraltar is of considerable strategic importance and one of the only ways for seaborne trade from the Mediterranean coastal or landlocked countries to the UK and America.

The Strait is of great strategic and economic importance, thus it was used by many early Atlantic voyagers and has continued to be vital to southern Europe, northern Africa, and western Asia as a shipping route. Furthermore

⁴⁴ European Parliament resolution of 20 January 2011 on an EU Strategy for the Black Sea ([2010/2087\(INI\)](#))

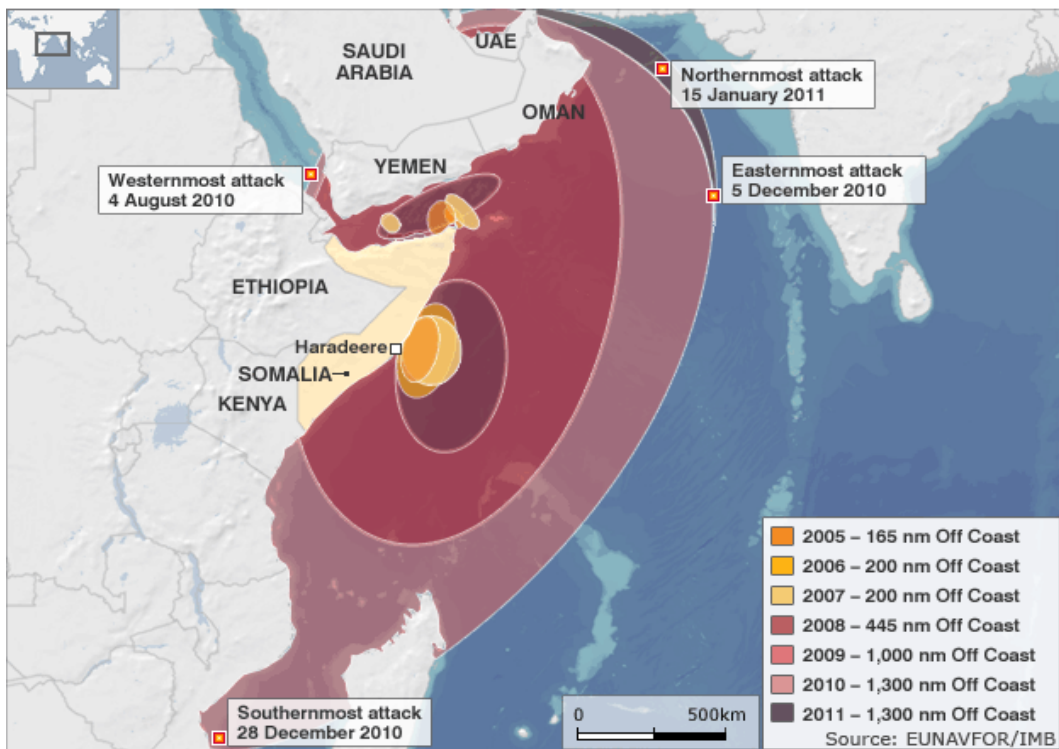
the Strait provides the entrance to the Mediterranean through which NATO vessels transit, as was witnessed during the crises and wars in the Middle East region.

In terms of numbers for transit of military-related vessels, Gibraltar is the second most important in the world strait after Lombok island, in Indonesia.

The Horn of Africa

Piracy off the coast of Somalia and the wider area of Western Indian Ocean negatively impacts on international maritime security and regional and international economic activities. It has been a growing threat to security, international shipping and development since the mid-2000s.

The Horn of Africa is one of the most complex and conflicted regions of the world. The countries of the Horn - Somalia, Ethiopia, Eritrea, Djibouti, Kenya, Sudan, South Sudan and Uganda - suffers from protracted political strife, arising from local and national grievance, identity politics and regional



Expansion of pirate attacks in the region of the Horn of Africa

inter-state rivalries. These countries belong to the *Inter-Governmental Authority for Development* (IGAD). Furthermore, particular attention must be given to Yemen, due to its proximity to the Horn.

The EU Council of Ministers adopted on 14 November 2011 a *Strategic Framework for the Horn of Africa*⁴⁵ to guide the EU's multi-sectoral engagement in the region. This document sets out the way in which the EU will pursue its strategic approach, working in partnership with the region itself, in particular the African Union, and key international partners. It defines five priorities for EU action: building robust and accountable political structures; contributing to conflict resolution and prevention; mitigating security threats emanating from the region; promoting economic growth, and supporting regional economic cooperation.

The EU is also active in international initiatives within the United Nations (UN) framework as set out by its Security Council Resolutions on piracy off Somalia. The *Contact Group on Piracy off the Coast of Somalia* (CGPCS) is an international cooperation mechanism created in 2009, pursuant to UN Security Council Resolution 1851⁴⁶, which authorized the use of force to counter piracy off Somalia's coast. CGPCS serves as a point of contact among affected and contributing states, international organisations, and industries concerned, on all relevant aspects of combating piracy.⁴⁷

The Gulf of Guinea

Maritime security is also an emerging issue in the Gulf of Guinea region, which is one of the biggest possible alternative energy suppliers for EU, as it is thought to have vast untapped reserves.⁴⁸ Energy security and trade depend to a large extent on sea-based transport, and the region is currently the source of around 5.4 million crude barrels of oil per day (bbl/d). Oil supply from the region in 2011 was equivalent to 40% of total EU27 and 29% of total US

⁴⁵ Council conclusions on the Horn of Africa, 3124th FOREIGN AFFAIRS Council meeting, Brussels, 14 November 2011.

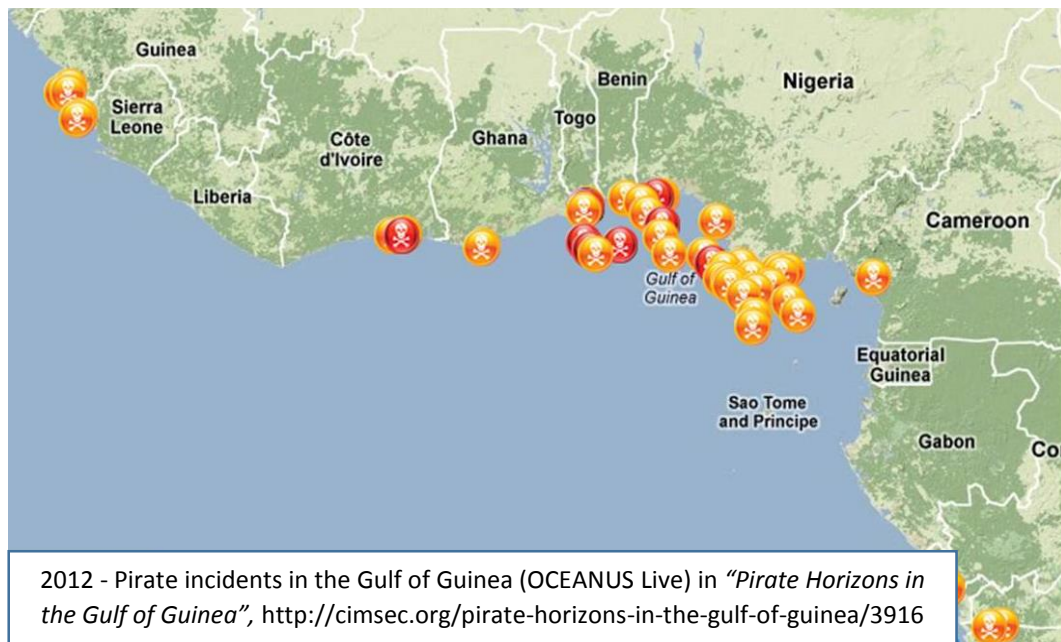
⁴⁶ Resolution 1851 (2008). Adopted by the Security Council at its 6046th meeting, on 16 December 2008.

⁴⁷ The EU fight against piracy in the Horn of Africa, FACTSHEET 131223/03, Brussels, 23 December 2013.

⁴⁸ The EU imports nearly 10% of its oil and 4% of its natural gas from the region, and the proximity of the Gulf definitely offers the potential for the EU to increase its hydrocarbon imports. See: "Stopping West African piracy is vital for Europe's energy security", by Ioannis Chapsos, Research Fellow in Maritime Security at Coventry University, 27 March 2014.

petroleum consumption in the same year. Angola and Nigeria account, respectively, for 34% and 47% of the region's total oil supply.

In terms of geography the Gulf of Guinea is an important maritime route for commercial shipping from Europe and America to West, Central and Southern Africa. Its proximity to Europe and North America for the transportation of the low-sulphur crude oil from the region further raises its importance in the global supply of energy.



However, the region is also a world epicentre of maritime crime. Piracy in the Gulf of Guinea accounted for nearly 30% of attacks (427 of 1,434) in African waters between 2003 and 2011, and that proportion is increasing. On 17 March 2014, the Foreign Affairs Council of the European Union officially adopted the *EU Strategy on the Gulf of Guinea*.⁴⁹ That document shows just how significant African maritime security is at the international level – not least how it connects foreign policy challenges across apparently disparate regions and issues.⁵⁰ The geographic scope of this EU Strategy covers the 6,000 km coastline from Senegal to Angola including the islands of Cape

⁴⁹ EU Strategy on the Gulf of Guinea, Foreign Affairs Council, 17 March 2014.

⁵⁰ "Stopping West African piracy is vital for Europe's energy security", by Ioannis Chapsos, Research Fellow in Maritime Security at Coventry University, 27 March 2014.

Verde and Sao Tome and Principe, covering two geographical, political and economic regions: the Economic Community of West African States (ECOWAS) and the Economic Community of Central African States (ECCAS), both of which are affiliated to the Gulf of Guinea Commission (GGC) and the African Union (AU).⁵¹

The European Union and the countries of the Gulf of Guinea region have major common economic, developmental, commercial and security interests. The region has a long coast line, and is rich in resources which are crucial both for local employment and consumption, and for trade with Europe. Maritime trade to and from the Gulf of Guinea is largely conducted by the EU. There is an average of 30 EU flagged or owned vessels at any one time in the Gulf of Guinea. The sustainability of all maritime resources, including fisheries, is a key concern for local communities as well as European customers. Secure global shipping lanes are necessary for commerce and trouble-free fishing.

The Arctic Region

The Arctic⁵² is a region with emerging maritime challenges. As it is warming faster than the rest of the globe, there will be more ice-free months per year and consequently greater activity in the region. Warming air and water temperatures are changing the geography. The "opening" of the Arctic due to melting ice will have significant strategic implications identified in two areas: a) Improving the affordability of energy and mineral resources, and b) Streamlining waterways.

The predicted rise in oil and gas development, fishing, tourism, and mineral mining could alter the region's strategic importance. In the coming decades, the Arctic Ocean will be increasingly accessible and more broadly used by Arctic and non-Arctic nations seeking the region's abundant resources and trade routes.

The impacts of the developments in Arctic in the coming decades will be enormous in the global economy and global security. European Union and NATO have direct interests in the region, both economically and strategically

⁵¹ EU Strategy on the Gulf of Guinea, Foreign Affairs Council, 17 March 2014.

⁵² The word "Arctic" is from the Greek *arktikos* ("near the bear"), and it refers to the constellation Ursa Major.

- while, except Russia, all countries surrounding the North Pole are members or partners of them.

Furthermore, important strategic and economic consequences during the next two decades there will be for international navigation. The Arctic region's potential economic and geostrategic importance has also begun to attract the attention of non-Arctic actors –as EU and China-, who are in the process of defining their interests and intentions. This situation creates security challenges, mainly in the domain of maritime security.



In May 2008, the five coastal states bordering the Arctic Ocean signed the *Ilulissat Declaration*, an agreement to abide by the customary law of the sea framework, even while United States has not yet ratified the broadly accepted United Nations Convention on Law of the Sea (UNCLOS).⁵³ While the *Ilulissat Declaration* establishes the body of law for managing the rights

⁵³ Arctic Ocean Conference, *The Ilulissat Declaration* (Ilulissat, Greenland, May 28, 2008), http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

and obligations of states specifically within the Arctic Ocean, UNCLOS provides the primary mechanism for peaceful resolution of disputes and recognizes underwater territorial boundaries on the extended continental shelf.

The International Maritime Organization's (IMO) Maritime Safety Committee (MSC) has approved in November 2014, the *Polar Code*⁵⁴ to prevent accidents, to provide uniform shipping industry standards and to promote the safety of mariners, passengers and cargo, in the Arctic and Antarctic.

Maritime Security in Africa Region

On the other side of the Mediterranean, the African Union (AU) formally adopted in 2012, the "*2050 Africa's Integrated Maritime (AIM) Strategy*", which is a long-term approach to the collective response of all marine crimes in the territorial waters of the Member States of the African Union and in international waters.⁵⁵

The whole of Africa is a region where challenges for operational requirements in the field of maritime security are growing more than in other parts of the global maritime domain. Several regions - *East Africa / Horn of Africa, and West Africa / Gulf of Guinea* - are obviously facing severe maritime security challenges combined with poor operational requirements and expertise.⁵⁶

The AIM strategy is a very encouraging move that shows the recognition of the importance of maritime insecurity in the long-term growth of the continent as well as the political will to support. This is a strategy, structured on the fundamental principles of the human security approach, which means that it is aimed at both *addressing the root causes of insecurity* and *improving the everyday life of the citizens* of the Member States of the African Union. Equally important is the special reference of the AIM to the importance of safe seas for landlocked countries, since dependence on neighboring coastal

⁵⁴ Shipping in polar waters - Development of an international code of safety for ships operating in polar waters (Polar Code), IMO.

⁵⁵ 2050 AFRICA'S INTEGRATED MARITIME STRATEGY (2050 AIM STRATEGY), AU, Version 1.0, 2012., www.au.int/maritime

⁵⁶ "Maritime Security – Perspectives for a Comprehensive Approach", *Institut für Strategie- Politik- Sicherheits- und Wirtschaftsberatung (ISPSW)*, by Lutz Feldt, Dr. Peter Roell, Ralph D. Thiele, Berlin, April 2013.

states for their overall development and economic development was generally ignored.

In the executive summary of the AIM document is stated that: “*In developing this 2050 Africa’s Integrated Maritime (AIM) Strategy, it is recognized that the Africa’s Maritime Domain (AMD)*⁵⁷ *has vast potential for wealth creation. So also is the realization that AU Member States have common maritime challenges and opportunities, and indeed, significant responsibilities for generating the desirable political will for implementing the strategy.*”

According to AIM Strategy, the threats and vulnerabilities in the Africa’s Maritime Domain include, among others:

- a. *Transnational Organized Crimes* in the maritime domain (money laundering, illegal arms and drug traffic, piracy and armed robbery at sea, illegal oil bunkering / crude oil theft along African coasts, maritime terrorism, human trafficking, human smuggling and asylum seekers travelling by sea);
- b. *Illegal, Unreported and Unregulated (IUU) Fishing and overfishing, and Environmental Crimes* (deliberate shipwrecking and oil spillage as well as dumping of toxic wastes);
- c. *Natural Disasters, Marine Environmental Degradation and climate change*;
- d. *Strategic Communications Systems*;
- e. *Vulnerable legal framework*;
- f. *Lack of and/or poorly maintained aids to navigation* and modern hydrographic surveys, up-to-date nautical charts and maritime safety information in a number of AU Member States.

In addition, a *Summit of Gulf of Guinea* Heads of State held in Yaoundé on 24-25 June 2013 has led to the adoption of a “*Code of Conduct Concerning the Prevention and Repression of Piracy, Armed Robbery against Ships, and Illegal Maritime Activities in West and Central Africa*” as well as the

⁵⁷ “*Africa’s Maritime Domain (AMD)*” refers to all areas and resources of, on, under, relating to, adjacent to, or bordering on an African sea, ocean, or African lakes, intra-coastal and inland navigable waterways, including all African maritime-related activities, infrastructure, cargo, vessels and other means of conveyance. It also includes the air above the African seas, oceans, lakes, intra-coastal and inland navigable waterways and to the oceans’ electromagnetic spectrum as well.

adoption of a Memorandum of Understanding (MoU) setting out the establishment of an experts group to prepare a follow-up action plan for implementation of the Code of Conduct.⁵⁸

Oil companies from the West and the East have made huge investments for both onshore and offshore drilling, and since the region has the fastest rate of discovery of new oil reserves in the world, it also attracts new investments for further exploration. Fishing trawlers come to the region from all over the world. Many are there illegally as a result of inadequate and inappropriate security checks. All these are exported through the Gulf of Guinea to markets in Europe and America.⁵⁹

Maritime issues in the Gulf of Guinea extended beyond piracy, which is centered on Nigeria. Much of the problem of oil theft may have root causes in Nigeria. The country has a population of around 150 million, and the average age is only 19. The Niger Delta is home to 30 million people, 30% of whom are unemployed. This does not just present an immediate domestic economic problem, but the toxic mix of organized crime, rising small-arms proliferation and insurgency, and high levels of youth unemployment has regional implications too. Increased violence in the Delta region would lead to increased numbers of refugees and internally displaced persons. If 10% of the Niger Delta population were displaced, then three million people would be dispersed around West Africa, dramatically escalating the problem.

Ensuring the security of the Gulf of Guinea is beyond the capacity of any existing regional body acting alone. A number of regional organizations share an interest in maritime security; these include the Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS), the Maritime Organization of West and Central Africa (MOWCA) and the Gulf of Guinea Commission (GGC). Geographical and mandate overlap argues for greater integration and coordination of maritime initiatives.

⁵⁸ See also: "Maritime Security in the Gulf of Guinea", March 2013, Report of the conference held at Chatham House, London, 6 December 2012.

⁵⁹ "Maritime Security in the Gulf of Guinea", March 2013, Report of the conference held at Chatham House, London, 6 December 2012.

EU - NATO Cooperation

While during the Cold War, NATO's contribution to maritime security was understood mainly in the context of collective defence, the changing security environment has led the Alliance to take on a broader array of tasks in the maritime domain, ranging from confidence-building and partnership to higher-end maritime interdiction, counterterrorism and counter-piracy operations. For this, NATO can rely on a number of existing assets and structures.

The *Alliance Maritime Strategy*, launched by NATO in 2011 (AMS 2011) sets out, in full consistency with the Strategic Concept of the Alliance, the ways that maritime power could help resolve critical challenges facing the Alliance now and in the future, and the roles - enduring and new - that NATO forces may have to carry out in the maritime environment in order to contribute to the Alliance's defence and security and to promote its values. The AMS 2011 identifies the four roles of NATO's maritime forces: deterrence and collective defence; crisis management; cooperative security – outreach through partnerships, dialogue and cooperation; and maritime security.⁶⁰

NATO's integrated military command structure indeed includes several maritime components. Collective defence, as embodied in Article 5 of the North Atlantic Treaty, remains of course NATO's primary goal, and the Alliance's naval assets are an essential part of the broader collective deterrence and defence architecture. Additionally, with the emergence of new asymmetric threats from non-state actors, collective defence has taken on a broader meaning. This has also resulted in new tasks for the Alliance in the maritime domain, as illustrated by Operation Active Endeavour (OAE). OAE is the Alliance's only Article 5 operation. It was launched following the 11 September 2001 terrorist attacks, as one of the eight collective defence measures decided by the Alliance in support of the United States. The Operation's main goal is to detect and deter terrorist threats through a NATO maritime presence in the Mediterranean.

In addition NATO maritime forces are engaged in countering the proliferation of WMD. More recently US and other member warships participate

⁶⁰ Alliance Maritime Strategy, http://www.nato.int/cps/en/natolive/official_texts_75615.htm last updated 17 June 2011.

in the ballistic missile defence (BMD) system. Thus, the nuclear and strategic deterrent posture of the Alliance will continue to include conventional and nuclear naval strike forces, amphibious and expeditionary capabilities to control the littoral space at sea and ashore, and classic maritime missions, such as the control and protection of sea lines communications. Moreover, the crisis management concept of the Alliance includes rapid deployment of combined, joint forces that can operate effectively in several type of environments.

The AMS 2011 anticipates that naval forces will be engaged in arms embargoes and maritime interception or interdiction operations, maritime precision strike operations, employment of expeditionary and amphibious forces and special operations forces in the littoral zone and the humanitarian assistance and disaster relief. Naval forces, in particular aircraft and submarines, are also appropriate means for conducting discreet surveillance and reconnaissance.

The Atlantic Alliance has a maritime capability that no other organisation can match. With its presence, NATO is contributing to enhancing the security of energy shipments and the security in general. NATO is currently conducting two distinct maritime operations – *Active Endeavour*, a counter-terrorist operation in the Mediterranean, and *Ocean Shield*, a counter-piracy operation off the Horn of Africa.⁶¹

The global security challenges in the maritime domain have led NATO to establish a *Maritime Interdiction Operations Training Center* (MIOTC) as part of the Alliance's transformational network (ACT), based in the island of Crete, Greece⁶². NMIOTC participates actively in the effort of allied and emerging partners into forces integration and improvement of interoperability, while forging at the same time a law enforcing culture, through proper legal training, on naval units and law enforcement agencies operating in the open seas under UN mandates and NATO operations.

⁶¹ Speech by NATO Secretary General Anders Fogh Rasmussen at the occasion of his visit to the Kingdom of Bahrain, Ritz Carlton Hotel, Manama, Bahrain, 07 Mar. 2010

⁶² NMIOTC, Course Catalogue. More at: http://www.nmiotc.gr/#home_en.htm

From its side the EU has, among others, multinational forces established by Mediterranean Member States with rapid reaction and intervention capabilities within the framework of crisis management operations. These forces are the following:

- *Eurofor* and *Euromarfor*, established in 1995 by France, Spain, Italy and Portugal;
- Three *national Battlegroups* established by France, Spain and Italy, and three *multinational Battlegroups*: SIAF BG, HELBROC BG and EUROFOR BG; and
- Several *Maritime Groups*, formed by European Member States.

The afore-mentioned forces should also include the two NATO forces – *STANAVFORMED* και *STANAVFORLAND* – which since 2001 have undertaken missions in the Mediterranean within the framework of counter-terrorism operation “Active Endeavour”.

The EU Mediterranean members with strong armed forces, strike capability, and which can make an essential contribution to the whole spectrum of security and defence requirements are the five oldest Mediterranean Member States of the Union: France, Italy, Greece, Portugal and Spain. It is worth mentioning that these States belong to those EU Member States which strongly support the development of the CSDP. None of these belongs to the so-called “neutral States” and none has ever expressed the wish to be exempted from matters of security and defence. On the contrary, they are playing a lead part in all relevant initiatives aiming at the development of the CSDP and the relevant security activities of the EU.

Maritime security addresses new threats to NATO maritime forces in ports, to international shipping and to energy security. At the NATO *Centre for Maritime Research and Experimentation* (CMRE)⁶³ the Maritime Security Programme encompasses two main project areas:

- a. ***Non-Lethal Response in Port Protection***, aiming to reduce the risk to military forces and assets by advancing concepts and technologies in non-lethal response to small boats or underwaters intruders in ports and harbors.

⁶³ See more about CMRE at <http://www.cmre.nato.int/about-cmre/history-and-vision>

b. ***Maritime Situational Awareness***, seeking to increase NATO's ability to detect threats at sea by extracting useful information from a variety of data sources with a focus on automation and reducing operator workload.

In addition, the programme includes two multinational research projects sponsored by the European Commission Framework Programme 7:

- ***NEREIDS*** (New Service Capabilities for Integrated and Advanced Maritime Surveillance).
- ***ICARUS*** (Integrated Components for Assisted Rescue and Unmanned Search).

Maritime security is not a new issue for NATO and the European Union. Both organisations have already developed a number of policies and tools to tackle maritime threats. However, they are currently reviewing their contributions and considering greater roles in the future. The 2010 report "*Maritime Security: NATO and EU roles and co-ordination*" proposes the examination of the processes and the issues raised for each organisation individually, as well as for relations between them and with other relevant actors. The report provides an overview of current maritime threats and the challenges they pose in terms of Euro-Atlantic and international security and examines how the two Organisations are addressing these threats and what future steps are envisaged. Finally, the report discusses issues of co-ordination and co-operation between NATO and EU.⁶⁴

NATO and EU are progressively moving closer in the type of tasks and activities they seek to undertake. With EU NAVFOR Somalia, the EU has demonstrated its ability to conduct a maritime operation far away from its borders. Meanwhile, NATO is considering a more active role in law enforcement-type maritime security operations, as well as in *Maritime Security Sector Reform* (MSSR) and capacity-building.⁶⁵ It is therefore urgent to look for possible synergies, and focus on the best possible use of member states' limited maritime assets in a context of renewed maritime challenges. Both NATO and the EU should be encouraged to enhance institutional co-operation further by using agreed modalities.

⁶⁴ 207 CDS 10 E BIS - MARITIME SECURITY: NATO AND EU ROLES AND CO-ORDINATION

⁶⁵ See also: <http://www.state.gov/documents/organization/154082.pdf>

Maritime surveillance, in particular, is one area where co-ordination is possible and desirable. It is striking for instance that EU and NATO both operate in the Mediterranean – with FRONTEX and Active Endeavour – yet, these efforts are barely coordinated. In its November 2009 conclusions on this issue, the Council of the EU emphasized “the need to take into account potential areas for co-operation as appropriate with third countries, as well as with relevant organisations” (such as the United Nations, the IMO, NATO and others). This should be one of the key guiding principles for the work currently completed by the European Commission and the EDA on maritime (space-based) surveillance.

THE EUROPEAN MARITIME SECURITY STRATEGY

The Current Situation - Activities in the Past

The Maritime Dimension of the CSDP

Despite some initiatives taken under the CSDP, there were still calls for a maritime dimension of this policy. In particular, the EU had to actively seek to safeguard key trade routes, such as “*Suez to Shanghai*”, the *Arctic*, etc. and prevent state or non-state actors from disrupting them.

The lead EU institution responsible for the security of the external borders of the Union is the FRONTEX, the European Agency for the management and operational cooperation of the external borders. In this context, a Blue Book was adopted October 2007, the *Integrated Maritime Policy for the EU*⁶⁶, as a maritime dimension of all relevant efforts, aimed at uniting the various approaches. This policy seeks to integrate the maritime affairs among national, regional and EU institutions to maintain surveillance and better manage maritime space.

In December 2008, the European Union launched the first ever joint naval operation, the **EUNAVFOR Somalia – “Operation Atalanta”**. Being the first naval operation implemented within the framework of the CSDP, EUNAVFOR has been installed as one component of a so-called “comprehensive approach”. It aims at strategically combining developmental, humanitarian, civilian, and military policies to deal with the Somali crisis in general and the threat of piracy in particular. As an anti-piracy operation off the coast of Somalia, it acts “... in response to increasing levels of piracy and armed robbery off the coast of the Horn of Africa in the Western Indian Ocean ...”, and in accordance with the relevant decision of the United Nations Security

⁶⁶ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - *An Integrated Maritime Policy for the European Union* (COM/2007/0575 final).

Council. Due to the successful counter-piracy actions off the coast of Somalia piracy east of Suez have been reduced.

In order to deal with the operation's requirements, a coordination staff (EU NAVCO) was installed in Brussels, while at the same time the European Operational Headquarters (OHQ) in Northwood, England was also activated⁶⁷. A *Maritime Security Centre – Horn of Africa* (MSCHOA) has been established in the OHQ in order to provide 24-hour manned monitoring of vessels transiting through the Gulf of Aden. In the same time the provision of an interactive website enables the Centre to communicate the latest anti-piracy guidance to industry, and for shipping companies and operators to register their vessels' movements through the region.⁶⁸



⁶⁷ Since 2005 the EU has configured five *Operational Headquarters (OHQs)*. They provide the EU with the premises and infrastructure to be able to conduct an operation at the strategic level in all fields of command and control with a multinational staff. These HQs are: the **French** in Mont Valérien (Paris), the **British** in Northwood, the **German** in Potsdam (Berlin), the **Italian** in Rome and the **Hellenic** in Larissa (central Greece).

⁶⁸ See more about the MSCHOA at <http://www.mschoa.org/on-shore/home>

The “Strategic Framework for the Horn of Africa”, adopted by the Council in November 2011 as well as the appointment of a Special Representative for the Horn of Africa is furthermore to interlink the engagement in Somalia with the EU’s policies in the Horn of Africa region. Despite all these efforts and despite close cooperation with many partners like the United Nations, the African Union and the United States, the Somali crisis is however not even close to being solved and Somali pirates continue to pose a risk to global maritime shipping.⁶⁹

Another operation - EUCAP Nestor with Headquarters in Djibouti - in the same wider area, launched by the European Union in July 2012. It is a civilian mission which assists host countries develop self-sustaining capacity for continued enhancement of maritime security, including counter-piracy and maritime governance. The Mission is mandated to work across the Horn of Africa (HoA) and Western Indian Ocean (WIO) regions, with around 80 international and 20 local staff members carrying out activities and training across the region with a particular focus on Somalia. In addition to Djibouti, the Mission has personnel strategically positioned in Nairobi, Mogadishu, Bosaso, Hargeisa, the Seychelles and Tanzania.⁷⁰

As part of its mandate, EUCAP Nestor promotes regional cooperation in maritime security and coordinates capacity building activities. A series of regional events have been organised, such as a regional conference on maritime security in 2013, as well as a series of regional workshops for prosecutors, judges and other legal practitioners on piracy and other maritime crime in Nairobi and Djibouti. In the fight against piracy, the Mission complements a number of other EU actions including the two CSDP missions in the region (Operation Atalanta and EUTM Somalia) as well as a number of EU programmes funded under the *Instrument for Stability*, the *Critical Maritime Routes Programme* (MARSIC) and the *European Development Fund* (Regional Maritime Security Programme – MASE).

⁶⁹ Hans-Georg Ehrhart / Kerstin Petretto, *The EU and Somalia: Counter-Piracy and the Question of a Comprehensive Approach*, Study for The Greens/European Free Alliance, Hamburg, February 2012

⁷⁰ “The EU fight against piracy in the Horn of Africa”, Factsheet, 131223/03, 23 December 2013

Critical Maritime Routes Programme (CMR)

The objectives of the Indicative Programme 2009-2011 for the Instrument for Stability⁷¹, led the European Union to set up the *Critical Maritime Routes* (CMR) programme in order to address the trans-regional problem of the security and safety of essential maritime routes. CMR programme aims at strengthening regional and national maritime security capabilities, and at enforcing the rules and provisions which guarantee the security of navigation and other activities at sea. It focus on coast guard, maritime law enforcement with a coast guard function and/or other maritime authorities of selected countries, notably where the threat has appeared more recently and the gap in capacity is high.⁷²

The activities in the framework of CMR programme include five projects, which contribute in creating trans-regional synergies and increasing maritime security and safety of critical maritime routes:

1) ***CMR Monitoring, Support and Evaluation Mechanism (CRIMSON)***: The overall objective is to strengthen the trans-regional coordination and complementarities among the various projects and increase the coherence with projects carried out or planned by EU member states bilaterally or by other international and regional stakeholders

2) ***CMR Indian Ocean (CRIMARIO)***: The CRIMARIO project aims at enhancing maritime domain awareness, through cooperation actions in the Indian Ocean and South Asian areas. The project primarily focuses on Tanzania, Yemen, Kenya, India, Singapore and South Africa.

3) ***CMR Gulf of Guinea (CRIMGO)***: The CRIMGO project aims at complementing and reinforcing regional or international initiatives against piracy and armed robbery at sea in the Gulf of Guinea. This project concerns Benin, Cameroon, Equatorial Guinea, Gabon, Nigeria, Sao Tome and Togo.

4) ***CMR Western Indian Ocean***: It includes two complementary projects dedicated to counter-piracy coexists in the Western Indian Ocean (WIO):

⁷¹ *The Instrument for Stability – Multi-annual Indicative Programme 2009-2011*, COMMISSION OF THE EUROPEAN COMMUNITIES, Brussels, 8/4/2009, C(2009)2641

⁷² See more at: EU CMR Information Portal <http://www.crimson.eu.com/>

a) ***Law enforcement capacity building in East Africa (CRIM-LEA)***: It aims at enabling the national law enforcement agencies to efficiently respond to maritime piracy at regional level, providing them with the necessary training and equipment to conduct these operations effectively and within a legal framework.

b) ***Enhancing maritime security and safety through information sharing and capacity building (MARSIC)***: It has focused since 2009 on the security and safety of essential maritime routes in areas affected by piracy to help to secure shipping and trading lines of communication. Its long term goal is to improve maritime governance.

MARSIC supports maritime security and safety in the Western Indian Ocean region by enhancing information sharing and training capacities. It contributes to the implementation of the regional ***Djibouti Code of Conduct (DCoC)***⁷³. The overall objective of MARSIC is to reinforce the capacity of regional coastal states' maritime administrations, law enforcement and coast guards to respond in particular to piracy and armed robbery against ships, as well as to other maritime security and safety threats.

The project focuses on capacity building and training of maritime administration staff, officials and coast guards from the region, i.a. Somalia, including Puntland and Somaliland. This includes assistance to setting up the [Djibouti Regional Training Centre](#) for maritime affairs. It also reinforces the capacity of states' coast guards and administrations, starting with Yemen and Djibouti, to ensure the surveillance and security of territorial waters by supporting the operations of the *Regional Maritime Information Sharing Centre (ReMISC)* in Sana'a (Yemen).

Another project is implemented by INTERPOL and supports national law enforcement capacities to combat maritime piracy by providing necessary training and equipment to perform effective and pro-active investigations including on piracy financiers and organisers.

⁷³ See more at: *Djibouti Code of Conduct – Project Implementation Unit*, IMO, Maritime Safety Division, Edition 1: June 2011-Jan 2012. Also at: <http://www.imo.org/OurWork/Security/PIU/Pages/DCoC.aspx>

Regional Maritime Security Programme (MASE)

The EU Programme to *Promote Regional Maritime Security in the Eastern and Southern Africa-Indian Ocean Region* (MASE) is a joint program between the European Union and the United Nations Office on Drugs and Crime, though funded by the EU.

MASE will support the implementation of the Eastern and Southern Africa - Indian Ocean Regional Strategy and Action Plan (ESA-IO) adopted by Mauritius in 2010 with the goal of fighting piracy and promoting maritime security through strengthening capacity throughout the region.

The program is designed to enhance maritime security in the ESA-IO region to aid in the creation of a favorable environment for the economic development of the region through five objectives:

- a. Implementation of the Somali Inland Action Plan,
- b. Development of national/regional legal, legislative and infrastructural capability for arrest, transfer, detention and prosecution within the region,
- c. Strengthening regional capacity to disrupt pirate financial networks and minimize the economic impact of piracy in the region,
- d. Enhancement of capacity for maritime tasks and support functions,
- e. Improvement of regional coordination and information exchange.

Furthermore, cooperation among member states is driven by new instruments, which include the *roadmap for planning a maritime area* (2008), the *Baltic Sea Strategy* (2009), the June 2011 *Strategy for the Atlantic Area*. However, the necessity for an EU strategy for maritime security was recognized long ago.

It is mentioned here the “**Declaration of Limassol**”, during the Cypriot Presidency of the European Union – 2nd semester of 2012 - (“*Declaration of the European Ministers responsible for the Integrated Maritime Policy and the European Commission, on a Marine and Maritime Agenda for growth and jobs the Nicosia Declaration*”).

Maritime Operational Concept (MOC)

In August 2010 the Chiefs of the European Navies (CHENS)⁷⁴, endorsed the European Navies Maritime Operational Concept (CHENS MOC). It provides the contextual basis for European Navies' military activity in the maritime environment. The purpose of this paper is to present a common Maritime Operational Concept as a professional opinion of the CHENS as a group of Commanders In Chief of independent European Navies.

According to CHENS MOC maritime safety and security has always been paramount for the global development and prosperity but today the key differences are that new and emerging challenges have to be met. These challenges include:

- The wide array of threats to the significant volume of sea travelled trade.
- The potential damages which can be done on a nations territory by a threat from the sea;
- The opportunities that can be found on exploiting ocean resources;
- The possibilities of developing new sea routes north of America and Asia.

Modern navies can ensure the States national security and sovereignty at sea, while protect the States interests and support their foreign policy. Concerning the threats and risks in the field of maritime security, European navies provide an increasingly essential contribution to national and transnational strategies. The role of the European navies is defined by their contribution to deterrence, security, safety and stability of the global maritime domain.

The CHENS's Maritime Operational Concept identifies four roles as the possible naval activities within the maritime security spectrum: (a) Maritime Defence, (b) Maritime Security Operations, (c) Crisis Response Operations, (d) Naval Diplomacy.

⁷⁴ Chiefs of European Navies, *MARITIME OPERATIONAL CONCEPT (CHENS MOC)*, endorsed in Copenhagen, 13 August 2010. The Chiefs of the European Navies (CHENS) is an informal and non-political forum. Their working group aims to promote understanding between navies of member countries.

The Way to a European Maritime Security Strategy

From its part the European Parliament has adopted several resolutions addressing maritime security. The latest report on the *Maritime dimension of the CSDP* (rapporteur Ana Gomes, S&D, Portugal) adopted by the European Parliament in 2013.⁷⁵ The report stated the importance of global maritime flows and **called for a European Maritime Security Strategy** combining approaches to maritime safety and maritime security, and considering the “nexus between human security, state governance and human development”. It also stresses the need for improved exchange of information and intelligence on maritime risks and threats between EU Member States, and proposes the creation of a EU coastguard. The report acknowledged the dangers that exist in the sea for the vital interests of the EU and the need to take the necessary measures to overcome them.

Specifically for the Mediterranean, Ana Gomes’ report noted that *it is home to a number of regional conflicts involving maritime border disputes and therefore urges the EU to commit itself to avoiding the further escalation, which will amplify existing threats*. It also refers to the dangers that can come from the discovery of hydrocarbons in the region of the Eastern Mediterranean: “...the recent discoveries of natural gas in the eastern Mediterranean have led Turkey, Russia and Israel to endeavor to increase their naval strength in the Mediterranean, causing direct concern for EU Members Greece and Cyprus; further notes the implications of the unresolved dispute with Turkey and the escalation of tension resulting from the intended exploitation of Cyprus offshore oil reserves; urges the EU, therefore, to act in asserting its position in order to avoid conflict over natural resources in the Mediterranean and consequential security threats for EU Member States in the area, which could ultimately affect the EU as a whole;”

Already on 26 April 2010 the Council invited the High Representative, together with the Commission and Member States “to undertake work with a view to preparing options for the possible elaboration of a Security Strategy for the global maritime domain”. In December 2013, the European Council called for “a European maritime Security Strategy until June 2014, on the basis of a Joint Communication prepared by the European Commission and

⁷⁵ Report on the maritime dimension of the Common Security and Defence Policy (2012/2318(INI))

the High Representative for Foreign Affairs & Security Policy taking into account the views of Member States". On 6 March 2014, the Commission and the High Representative issued a Joint Communication to the European Parliament and the Council, entitled "***For an open and secure global maritime domain: elements for a European Union maritime security strategy***".⁷⁶

This document presents a vision of the Union's maritime security interests and threats, and proposes the areas in which cooperation between various maritime players can be enhanced beyond what is already good practice today. It encompasses all maritime functions, from coastguards to navies, port authorities and customs duty officers and would affect the EU waters as well as each ship sailing under EU Member States' – flag and have a global reach.⁷⁷

Furthermore, the Joint Communication document laid down as an objective of the maritime security strategy, *the establishment of a common framework for the competent authorities at national and European level*, for the further development of these specific policies and the protection of the EU's strategic maritime interests, identifying options for their implementation. In particular, it put as main objectives, to identify and formulate the key EU strategic maritime interests, identify and formulate of maritime threats, challenges and risks of strategic maritime interests of the EU, and organize the response, i.e. the provision of common policy objectives, common principles and common areas of support as the backbone of the common strategic framework, in order to create consistency for the various maritime policies and strategies.

The Joint Communication, and the elements it proposed, served as a basis for further work on shaping the strategy, together with the Member States, in the EU Council under the leadership of the Hellenic Presidency. Thus, the [**European Union Maritime Security Strategy**](#) (EUMSS) was endorsed by

⁷⁶ JOIN/2014/09 final

⁷⁷ "Towards an EU integrated approach to global maritime security", EEAS, Press Release, 140306/02, 06 March 2014. Catherine Ashton, High Representative of the European Union for Foreign Affairs and Security Policy and Vice President of the Commission said: "*The security and well-being of Europeans greatly depend on open and safe seas. It is therefore necessary for the EU to deal with maritime threats and challenges. We need a joined-up approach, as demonstrated in the Horn of Africa where we have achieved significant results in fighting piracy. This Communication paves the way for a more systematic use of all the tools we have at our disposal and will allow us to speak with one voice to our international partners.*"

the European Council of 24 June 2014. It defines the strategic maritime security interests of the EU and its Member States, as well as identifies the risks and threats in the maritime security field. The EUMSS understand maritime security as a state of affairs of the global maritime domain, in which international and national law are enforced, freedom of navigation is guaranteed and citizens, infrastructure, transport, the environment and marine resources are protected.

The Strategy is based on four guiding principles:

- a. The ***cross-sectoral***⁷⁸ ***approach***, which means all partners from civilian and military authorities and actors need to cooperate better, respecting each other's internal organization.
- b. ***The functional integrity***, in the sense that it does not affect the respective competences of the Union and its Member States in the areas covered.
- c. ***The respect for rules and principles***, such as the international law, human rights and democracy.
- d. ***The maritime multilateralism***, in the sense of cooperation with all relevant international partners and organisations.

The main purpose of this strategy is to facilitate a cross-sectoral approach to maritime security, including actions and cooperation among different marine or maritime functions (e.g. maritime safety, marine environment protection, fisheries control, customs, border control, law enforcement and defense). This would be achieved by pursuing the following four main strategic objectives:

- a. ***Make best use of existing capabilities*** at national and European level
- b. ***Promote effective and credible partnerships*** in the global maritime domain
- c. ***Promote cost efficiency***
- d. ***Enhance solidarity*** among Member States

⁷⁸ The term "cross-sectoral" refers to actions or cooperation between different marine or maritime functions. They are still largely organised in isolation of each other and often along national lines. Modern maritime risks and threats are multifaceted and can have implications for all of these sectors involving different policies and instruments. The responses therefore should be adequately integrated and cross-sectoral in their nature. It means finding a common maritime security interest among different functions and aspects concerned. (See also: Q&A for a European Union Maritime Security Strategy).

More specifically, the strategic objectives of the EUMSS includes the protection of the marine tourism, the illegal oil bunkering/crude oil theft, the environmental crimes advance maritime safety of navigation, the protection and sustainable use of the marine environment, piracy and armed robbery at sea, maritime terrorism, human trafficking, human smuggling and asylum seekers travelling by sea.

Furthermore strategic objectives are focused on the prevention and defence against and response to cyber threat, the protection of the population, assets and critical infrastructure from maritime pollution and dumping of toxic and nuclear waste, ensuring security and safety of maritime transportation systems, minimizing environmental damage and expedite recovery from catastrophic events.

The lack of agreement on maritime zones, such as the delimitation of exclusive economic zones (EEZs), may constitute an additional threat to some sea areas, such as the Mediterranean Sea. Thus, the EU strategy should aim at strengthening mutual assistance among Member States in order to allow the drafting of common potential projects, risk management, conflict prevention and crisis management.

The EUMSS covers both the internal and external aspects of the Union's maritime security. It serves as comprehensive framework, contributing to a stable and secure global maritime domain, in accordance with the European Security Strategy (ESS), while ensuring coherence with EU policies, in particular the Integrated Maritime Policy (IMP), and the Internal Security Strategy (ISS)⁷⁹.

The *Integrated Maritime Policy* seeks to provide a more coherent approach to maritime issues, with increased coordination between different policy areas. It focuses on:

- a. Issues that do not fall under a single sector-based policy e.g. "blue growth" (economic growth based on different maritime sectors).
- b. Issues that require the coordination of different sectors and actors e.g. marine knowledge.

⁷⁹ ["The EU Internal Security Strategy in Action"](#) (2010)

The Action Plan for the Implementation of the EUMSS

In 18 December 2014, the Council adopted an *European Union Maritime Security Strategy (EUMSS) Action Plan* to implement this Strategy. EU ministers adopted a set of actions to make Europe's seas safer and to protect the EU's maritime security interests from the threats which it faces.

The Action Plan, part of the EUMSS adopted in June 2014, takes a cross-border and cross-sector approach to confronting the seaborne perils which the EU is confronted with. The plan is also central to the EU's commitment to boost the maritime economy since investments in the European maritime domain can only be prosperous if the seas are safe and secure.⁸⁰

The Action Plan, jointly implemented at European and national level, contains 130 actions organized in five key areas of work:

- a. ***Intensifying EU external action:*** A better use of the tools at the EU's disposal, including strengthened political dialogue and development aid.
- b. ***Shared maritime awareness and surveillance:*** Focus on developing a common information sharing environment.
- c. ***Capability development reinforced:*** For instance by promoting dual-use technologies.
- d. ***Working towards a common risk analysis:*** Risk management, protection of critical maritime infrastructure and crisis response will be bolstered
- e. ***Strengthening maritime security research and training***

The Action Plan covers both the internal and external aspects of the Union's maritime security. Its guiding principles are a cross-sectorial approach; rules-based governance of the global maritime domain; respect for existing instruments and competences, as well as maritime multilateralism.

The implementation of the 130 specific actions foreseen in the Action Plan will be carried out by EU institutions and Member States. From the external action perspective, this comprises measures such as engaging with third parties on maritime security matters, further promoting the existing in-

⁸⁰ See at: *A European action plan for safe and secure seas, Maritime Affairs, European Commission.*

ternational legal framework, particularly the UNCLOS, contributing to maritime capacity building in third countries, as the Critical Maritime Routes Programme (MARSIC) already does, to build on lessons learned as the Contact Group on Piracy off the Shore of Somalia, and to conduct operational activities including missions such as the counter-piracy Operation ATLANTA.

The Action Plan also identifies the relevant actors for each action (at EU and national level) and provides a timeline for the implementation.

In the framework of the European Union the responsibility for the maritime security affairs lies with the European Commission and the European External Action Service (EEAS). Furthermore they are working closely with the Member States in order to deliver a full-fledged strategy. Such a strategy cannot be developed without the involvement of Member States since many operational activities are carried out by national authorities.

The Necessity for a European Coast Guard

In 2009 the *European Coast Guard Functions Forum (ECGFF)* was founded. It is a non-binding voluntary, independent and non-political forum, between the coast guard organisations or different European member states. The main goal of this forum is to make coast guard related activities more coherent within the different member states, to stimulate mutual cooperation, to set up networks and to exchange information on best practices and experiences. Once a year there is a plenary meeting and the chairmanship rotates between the different countries. A possible project for the future could be the establishment of a network of coast guard training centres.⁸¹

With the general aim of improving the development of CGF's across borders and sectors, the Forum has the following objectives:⁸²

- To build and maintain a network of Heads of National authorities for Coast Guard Functions and designated Officers from EU Institutions, Agencies and Directorates with related competencies in CGFs;

⁸¹ See at: <http://gardecotiere.be/en/news/european-coast-guard-functions-forum>

⁸² See at: <http://webcache.googleusercontent.com/search?q=cache:Ce-kgFlxb-WoJ:www.ecgff.eu/component/phocadownload/category/23-publications%3Fdownload%3D78:non-paper+&cd=1&hl=el&ct=clnk&gl=gr>

- To agree Rules and Procedures for the Conference, Secretariat and any working groups including matters relating to funding;
- To assist in the development of common operational procedures and standards in line with prescribed international norms, reinforce synergies and improved operational preparedness, cooperation and response across borders and sectors;
- To consider the possibilities of promoting trust, burden sharing, asset sharing and enhanced regional cooperation;
- To establish a standing forum promoting the exchange of information, expertise, technical assistance, best practice, training, exercises and education;
- To provide relevant recommendations as appropriate;
- To act as a shared advice source on operational 'coast guarding' to others including the EU Institutions.

The launch of the ECGFF⁸³ was agreed during the first Conference for the Heads of the Coast Guards of the EU Member States and Schengen Associated Countries organised in Poland on April 2009, supported by FRONTEX. Representatives of the EU Member States and associated countries approved the development of inter-agency cooperation, coordination and multifunctional performance for the joint approach to the future challenges in the fields of border control, maritime safety and security, maritime customs activities, fisheries control and marine environment protection and general law enforcement.

In September 2013, Greece hosted the 5th Plenary Conference where the Heads of the ECGF agreed on a “Joint Declaration” which aims:

- a. at making the Forum a model of cooperation promoting the exchange of information, expertise, best practices, operations and training and develop a coordinated and collective response to emerging and existing risks in the EU maritime domain;
- b. at contributing as appropriate to the formulation and implementation of EU maritime policies and legislation

⁸³ Full title “*Forum of the Heads of the Coast Guards Functions of the European Union and Schengen associated countries*”.

Other Coast Guard fora's are getting together both EU Member States and third countries covering also the European basins such as the North-Atlantic Coast Guard Forum, Black Sea Coast Guard and Border Forum and the Mediterranean Coast Guard Functions Forum.

On the other hand, FRONTEX, as the EU institution responsible for supporting, coordinating and developing European borders management, seeks to facilitate interoperability and shared responses to irregular migratory phenomena like the massive migration across Mediterranean. It contacts joint operations covering air, land and sea borders and also manages immigrant return operations. FRONTEX has also dedicated action to countering organized criminal groups engaged in human trafficking etc. Many of these criminal groups also smuggle drugs, arms, and commodities like oil and cigarettes.

Moreover, the variety of increasing challenges and threats in all European regional sea basins make it imperative to set up a common European maritime security force to tackle them and effective control of the external maritime borders of the Union. Such a force could be a multinational **European Coast Guard** which could enhance the efficiency of:

- a. Maritime Search and Rescue (SAR), also in cooperation with coastal countries.
- b. Pollution prevention, control and sanctioning.
- c. Control of coasts and seas, including drug traffic, smuggling, illegal immigration.

MARITIME SURVEILLANCE AND AWARENESS

The aim of maritime surveillance is to understand, present wherever applicable and manage in a comprehensive way all the events and actions related to the maritime domain which could impact the areas of maritime safety and security, law enforcement, defence, border control, protection of the marine environment, fisheries control, trade and economic interests of the EU. Maritime surveillance is complex and multifaceted and numerous activities are ongoing or planned which often overlap and are of interest for the EU as a whole.⁸⁴



Source: CLS SERVICES - Satellite Automatic Identification System (AIS)

Space Based Maritime Surveillance

Satellite imagery is used to locate and track vessels, monitor beaches and ports, and detect unlicensed fishing, human trafficking, and illicit oil discharges. Since no single country can afford to set up a system for maritime

⁸⁴ Council of the European Union, *Maritime Surveillance – Overview of Ongoing Activities*, Brussels, 4 November 2008.

surveillance on a global scale, cooperation between states is necessary. The European Space Agency (ESA) is looking into how to better share satellite data for an improved maritime-surveillance system. One approach that could foster international collaboration is to combine satellite-based vessel detection information with identification information that all large vessels are required to transmit.

Maritime surveillance is one of the users of satellite systems at the disposal of the EU. In particular, the Copernicus – formerly known as GMES (Global Monitoring for Environment and Security) - the European program for Earth observation and monitoring, grows, among others, in the security sector, to provide support to the respective policies of the Union.

Most of the user's needs that have been assessed can be met by imagery. The services of the Copernicus can provide rapid information to detect events or activities outside of the area of Europe, which may have an impact on European and world security. This information will contribute to the improvement of the situation at the global level and respectively to the improvement of the European capabilities for crisis prevention, preparedness and response.

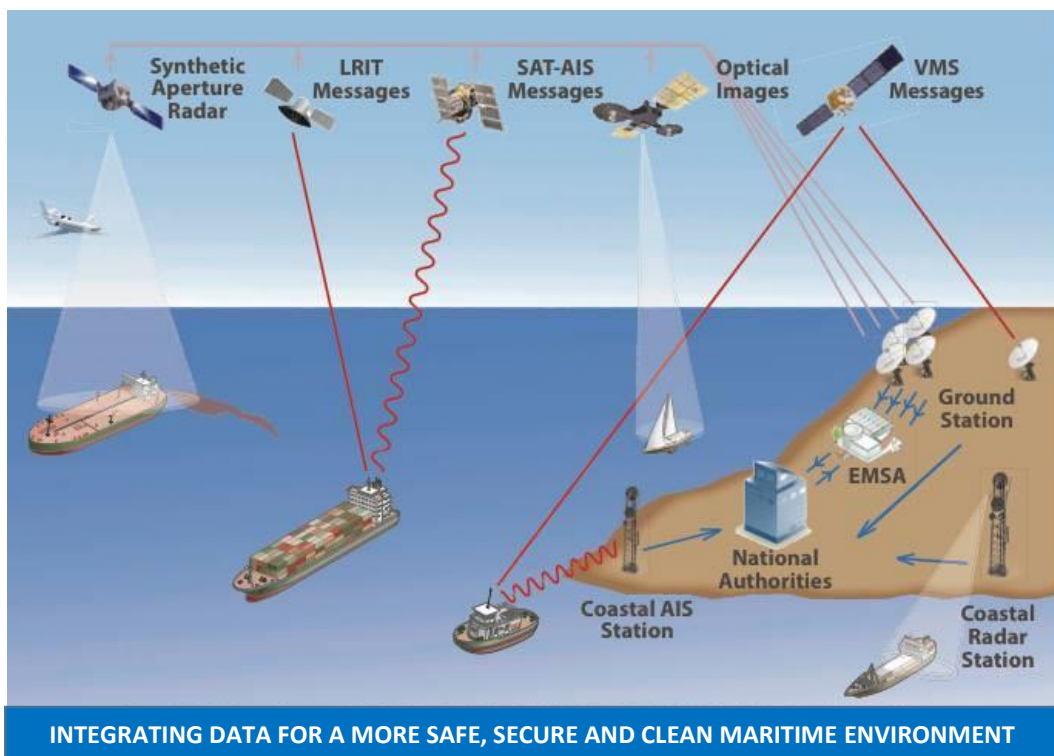
Maritime Surveillance services are designed to support efforts to tackle piracy, drug trafficking, illegal fishing activities, and illegal immigration across Europe's blue borders, illegal fishing or deposition of toxic waste. In addition, maritime surveillance can contribute to the safe maritime transport in remote areas. Copernicus' services for Maritime Surveillance have benefitted from the progress which has been made in the Border Surveillance domain, both on user's requirements and on governance aspects.

The improved maritime surveillance through the use of space and satellite applications can act as a disincentive for illegal actions and contribute to the reduction of the economic impact of illegal activities and human losses caused by maritime accidents and illegal immigration, while at the same time improves the planning of conventional patrol operations.

The Copernicus partnered with FRONTEX and other related services, such as the EMSA (European Maritime Safety Agency) for maritime surveillance, and the EU Satellite Centre (EUSC) for land borders surveillance. EMSA is a regulatory EU Agency, founded in 2002, as part of a substantial EU package of legislation relating to maritime safety in the wake of major shipping disasters in European waters. EMSA's principal tasks incorporate

providing member states with technical and scientific assistance to help them to apply Community legislation in the fields of maritime safety and the prevention of pollution by ships, to monitor the implementation of this legislation and to evaluate the effectiveness of the measures (preventive tasks). The Agency can also provide operational means to react to marine pollution (reactive tasks)⁸⁵.

One of the EMSA's main role is to facilitate technical cooperation between member states and the European Commission for EU vessel traffic monitoring, the long range identification and tracking (LRIT) of vessels, and



The Integrated Maritime Data Environment (**IMDatE**) is a technical framework that collects and combines data from EMSA's maritime applications and other external sources to provide more comprehensive and configurable services to users.

It also supports the relay of data between the maritime applications themselves, based on existing access rights. (*Image credit EMSA - Mar 2013*)

⁸⁵ "The EU's security and the sea: defining a maritime security strategy" by Basil Germond, Department of Politics, Philosophy and Religion, Lancaster University, LA1 4YL, UK.

the satellite monitoring of pollution and polluting vessels. Through these activities, EMSA provides a platform for integrated vessel monitoring services, tailored to user requirements.⁸⁶

According to the competent, the capabilities of Copernicus could provide operational maritime security services to EMSA, so as to be used as a natural extension of its current potential, by the year 2015. EMSA has been involved in Copernicus activities for a considerable period of time. The Agency has also cooperated closely with the ESA regarding the development of Earth Observation services for the maritime sector.

The principal maritime applications and services that are provided by EMSA to Member States' maritime safety and environmental administrations also provide added value to actors in other maritime sectors such as fisheries, customs, law enforcement, border control and defence. EMSA now supports a wide range of user communities by providing integrated services.

EMSA's near real-time satellite-based oil spill and vessel monitoring service, **CleanSeaNet**, has been reorganized by the European Commission as an associated Copernicus Service since 2008. The service provides aggregated products on possible oil spills, pollution alerts and related information to the operational maritime administrations within 30 min after satellite acquisition to allow an effective use of the data for follow up activities. The information is visualised by a specific web application supplemented by a day-to-day operational support by the Agency. With vessel traffic information being available in CleanSeaNet, the service is able to detect and identify vessels that are discharging

A dedicated integrated maritime data service, based upon the operational requirements of the EU Naval Forces (EU NAVFOR), has been running since 2011. The EMSA service assists EU NAVFOR in its counter-piracy mission, Operation ATALANTA, off the coast of Somalia. Various maritime information data streams (LRIT, satellite AIS and reporting data) are combined with other vessel-related and risk information provided by EU NAVFOR intelligence sources to produce an enhanced standard traffic image, enabling EU NAVFOR to monitor the area and to protect the vessels associated with the World Food Programme (WFP).⁸⁷

⁸⁶ "EMSA's role in Maritime Surveillance, by Leendert Bal,

⁸⁷ EMSA's official website.

The European Commission has launched from 2010 the **Integrated Maritime Surveillance** (IPS) a framework providing authorities interested or active in maritime surveillance with ways to exchange information and data. Sharing data will make surveillance cheaper and more effective. The objective of IPS is to allow for information exchange between public authorities responsible for maritime surveillance in fields such as environment, pollution prevention, fisheries, transport, customs, border control, law enforcement and defense according to respective access rights. Real time or on demand access to useful information from counterparts will save time and make maritime management more effective.

PERSEUS is an integrated EU maritime surveillance system which has been defined and planned to provide control and protection to the European seas and maritime borders with smart use of technologies. It is one of the most significant initiatives within the 7th Framework Programme of the European Commission. Its purpose is to build and demonstrate an EU maritime surveillance system integrating existing national and communitarian installations and enhancing them with innovative technologies. As a new maritime surveillance system is expected to increase the effectiveness of the current systems by creating a common maritime information sharing environment for the benefit of the network including National Coordination Centres, Frontex and the European Maritime Safety Agency (EMSA). The project also envisages collaboration with non-European countries and international agencies such as NATO or the International Maritime Organisation (IMO), among others.

PROMERC (Protection Measures for Merchant Ships) is an EU research project started on 1st May 2014 with a duration of 24 months. It aims to reduce the vulnerability of EU merchant fleets and maritime supply lines to criminal abduction and extortion and thereby reduce risk to mariners, shipping, and the environment, while also reducing costs and remaining cognisant of legal and social constraints. This will be delivered through the provision of the following tangible project results⁸⁸:

- Independent review and recommendations about non-lethal technologies for pirate avoidance and opposing the boarding of vessels by pirates.

⁸⁸ See more at the project's website: <http://www.promerc.eu/>

- A knowledge base and manual to aid in the selection and use of appropriate counter piracy measures in a layered holistic defence.
- An automated voyage planning support tool to aid shore based authorities, which will balance routing to mitigate risk against incurring additional fuel costs due to re-routing and increased speed.
- An automated decision support tool to provide seafarers with real time threat assessment, evaluation of possible courses of action and a recommended course of action and for use by shore based authorities as a training aid.

SafeSeaNet (SSN) is another initiative currently being implemented under the supervision of the EMSA. It consists in a centralised European platform for maritime data exchange, aimed at linking together maritime authorities across Europe. SSN is a specialized system established to facilitate the exchange of information in an electronic format between member states. In practice is a vessel traffic monitoring and information system, established in order to enhance maritime safety, port and maritime security, marine environment protection and efficiency of maritime traffic and maritime transport.⁸⁹

SafeSeaNet enables EU Member States, Norway and Iceland to provide and receive information on ships, ship movements, and hazardous freight. As such, it puts in practice the Directive 2010/65/EU of the European Parliament on Reporting Formalities, which states that the information on cargo and crew/passengers transmitted when ships arrive to European ports must be communicated using electronic forms (e-messages).⁹⁰

THETIS is the information system that supports the new Port State Control inspection regime (NIR). To facilitate planning of inspections, the new system is linked to the SafeSeaNet system which provides information on ships in, or expected at, all ports of the Member States. THETIS indicates which ships have priority for inspection and allows the results of inspections to be recorded. Via THETIS these reports are made available to all port State control authorities in the Community and the Paris MOU. THETIS also interfaces with a number of other maritime safety-related databases including those of the EU-recognised classification societies, Community and national

⁸⁹ EMSA's official website.

⁹⁰ "Analysis of cyber security aspects in the maritime sector", ENISA, November 2011

information systems and other port State control regimes so as to exchange data and provide a full picture for the inspector. Inspection results are also available through a public website.

European Border Surveillance System (EUROSUR)

The European Border Surveillance System (EUROSUR) is an information-exchange system designed to improve management of the EU external borders. It aims at:

- increasing coordination within and between EU member states to re-inforce border surveillance, prevent and tackle serious crime, such as drug trafficking and the trafficking of human beings.
- making a serious contribution to the protection and saving of lives of migrants trying to reach European shores by sea and thus will help to diminish the unacceptable death toll.⁹¹

EU border policy is increasingly geared towards the use of high technology for the purposes of surveillance, particularly through the EUROSUR project. Under the EUROSUR mechanism, member states' authorities responsible for border surveillance (border guards, coast guards, police, customs and navies) will be able to exchange operational information and cooperate with each other, with FRONTEX and with neighbouring countries to fight serious crime and to intervene to save lives at sea. FRONTEX, as the EU's borders agency has become a significant player in EU border control policy and operations and the development of the EU security apparatus (such as drones etc.) more generally.⁹²

The increased exchange of information and the use of modern surveillance technology introduced by EUROSUR can be vital for saving the lives of migrants attempting to reach the shores of EU member states in small and unseaworthy boats that are very difficult to track.

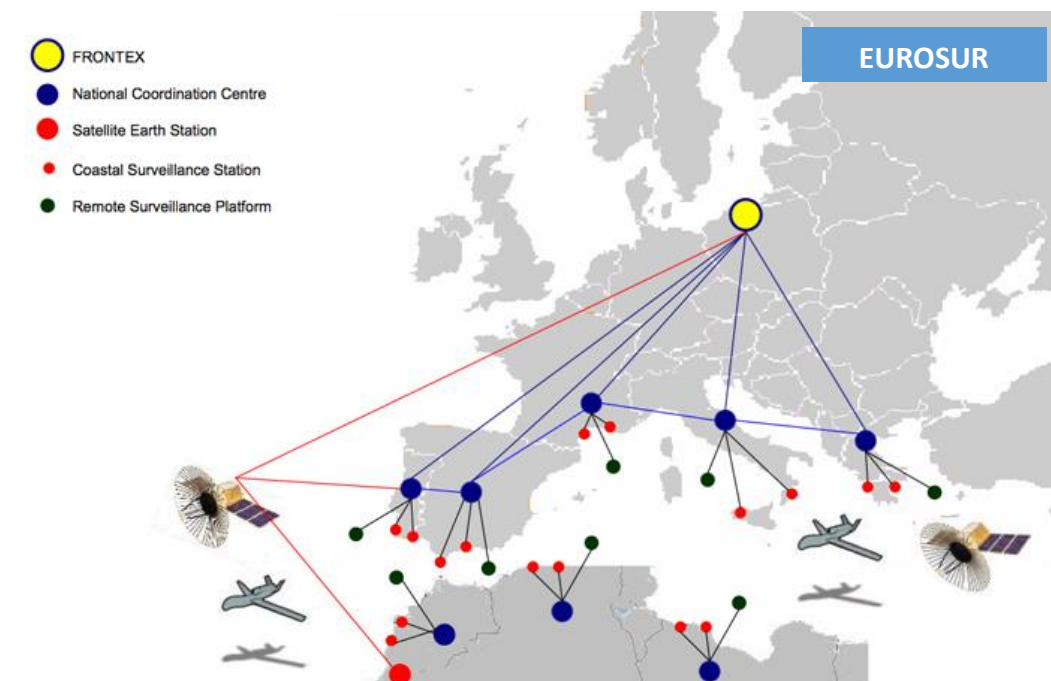
The exchange of information in the framework of EUROSUR will take the form of "situational pictures", which can be described as graphical interfaces presenting data, information and intelligence. These situational pictures

⁹¹ See also about EUROSUR at Frontex website: <http://frontex.europa.eu/intelligence/eurosur>

⁹² "EURODRONES Inc.", *A report by Ben Hayes, Chris Jones & Eric Töpfer, Amsterdam, February 2014.*

will be established at national and European level and will be structured in a similar way to facilitate the flow of information among them. This will increase the possibility of identifying and tracking down the routes used by criminal networks. The fact that traffickers are currently using small wooden and glass-fibre boats for smuggling both human beings and illicit drugs poses a major challenge to law enforcement authorities because it is extremely difficult to detect, identify and track such small boats on the high seas.

Once the “situational pictures” are made available to the relevant actors it is for EU member states to decide upon follow up measures, including interception of boats suspected to carry out criminal activities or rescue at sea in case of emergencies. When using EUROSUR all member states will be bound by clear rules that guarantee full respect of fundamental rights. This also applies in case of cooperation between EU member states and third countries in the framework of EUROSUR.⁹³



Source: 'GLOBE: Phase 1 of the Demonstration Project for the Integrated Border Management System', presentation by Víctor Luaces (Telvent) to European Commission workshop, available at: http://ec.europa.eu/enterprise/newsroom/cf/_getdocument.cfm?doc_id=5119

⁹³ More at: [http://europa.eu/rapid/press-release MEMO-13-578_en.htm](http://europa.eu/rapid/press-release_MEMO-13-578_en.htm)

Maritime Surveillance (MARSUR)

In September 2006, the Maritime Surveillance (MARSUR) project was launched by European Defence Agency (EDA) and it is one of its longest-running projects. The purpose was the creation of a network using existing naval and maritime information exchange systems. MARSUR is a technical solution that allows dialog between European maritime information systems.⁹⁴

The 15 initial participating Member States are: Belgium, Cyprus, Germany, Spain, Finland, Greece, France, Ireland, Italy, Lithuania, The Netherlands, Poland, Portugal, Sweden and UK. Bulgaria, Latvia and Norway joined this community in October 2012 by signing the Technical Arrangement “Live phase”.

The MARSUR network has been designed in collaboration with EU agencies such as: EUMS, DG MARE, FRONTEX, EUSC, DG ENTR, JRC, DG HOME, etc. Containing 17 Member States plus Norway, the project aims to improve the common “recognised maritime picture” by facilitating exchange of operational maritime information and services such as ship positions, tracks, identification data, chat or images.

The system was developed by the military community with the aim of improving decision making for and during CSDP military operations. However the approach used by the MARSUR network is not specific for the military context, allowing the network to be leveraged to other user communities. In the end of 2014 the system has reached an operational level of maturity and a demonstration conducted during the Euronaval defence exhibition taken place on 27-31 October 2014 in Le Bourget, north of Paris⁹⁵.

MARSUR connects Naval Headquarters and their national system via a unique designed interface “MEXS” (MARSUR Exchange System). These interfaces enable secured cooperation over the internet and ensure interoperability with minimum required changes to the individual national system.⁹⁶

⁹⁴ A detailed information about MARSUR in the EDA official website.

⁹⁵ Claude-France Arnould, chief executive, EDA, said: *“Marsur is a great example of efficient pooling and sharing of existing capabilities. The project has now reached the point where it is ready to be used by European navies.”*

⁹⁶ <https://beckh.wordpress.com/tag/marsur/>

The interface is installed in each participating Navy's operational headquarters. A key characteristic of the MARSUR network is that there is no central EU component that collects and distributes information. Each member state is responsible for correlating its own data with the data received from other countries and for boosting the services within the community.

According to EDA, MARSUR is designed to become the potential "military layer" of the wider Common Information Sharing Environment (CISE) project led by the European Commission. MARSUR could work in conjunction with other systems of systems to ensure efficient interaction with other European maritime security stakeholders and also in support of CSDP missions.

In the Action Plan for the Implementation of the EUMSS the further improvement of the MARSUR is proposed in support of CSDP and maritime security in general, inviting participating Member States to ensure that by 2016 all national military operational information centres share information via MARSUR in order to support CSDP operations and missions.

Sea Surveillance Co-operation Baltic Sea

SUCBAS is a successful initiative for sea surveillance information exchange and co-operation within the Baltic Sea area and its approaches. Eight EU countries cooperate in the framework of SUCBAS: Finland, Sweden, Denmark, Germany, Estonia, Latvia, Lithuania and Poland. SUCBAS initiative is led by the navies of the participating countries.

The aim of the co-operation is to enhance Maritime Situational Awareness benefiting maritime safety, security, environmental and law enforcement activities in the region by sharing relevant maritime data, information and knowledge between the participants. The main objectives of SUCBAS are focused to:

- form a baseline for exchange of maritime information, thus mutually enhancing maritime situational awareness.
- support and deepen the overall cooperation between countries involved.
- enhance maritime safety and security in the Baltic region.

- support national authorities with responsibilities regarding environmental hazards.
- support authorities conducting maritime law enforcement and border control.

In recognition of the fact that responsibility for of maritime surveillance, maritime safety, maritime security, the maritime environment and maritime law enforcement are implemented differently in each country, SUCBAS information can be shared among national governmental institutions with a maritime responsibility regardless if these are civil or military at the discretion.⁹⁷

Long-Range Identification and Tracking (LRIT)

LRIT is a maritime domain awareness (MDA) initiative to enhance maritime safety, security and protect the marine environment. It allows the participating states to receive position reports from vessels operating under their flag, vessels seeking entry to a port within their territory, or vessels operating in proximity to the State's coastline.

LRIT was established as an international system on 19 May 2006 by the International Maritime Organization (IMO) as resolution MSC.202(81). This resolution amended chapter V of the International Convention for the SOLAS, regulation 19-1 and binds all governments which have contracted to the IMO. The LRIT regulation will apply to the following ship types engaged on international voyages: all passenger ships including high-speed craft, cargo ships, including high-speed craft of 300 gross tonnage and above, and mobile offshore drilling units.⁹⁸

LRIT users include the following:

- **Flag States** may request information on the location of their vessels around the world

⁹⁷ See more at the SUCBAS website: <http://suchbas.org/> Also at: <https://beckh.wordpress.com/tag/marsur/>

⁹⁸ [Wikipedia](#). See also at IMO website: <http://www.imo.org/OurWork/Safety/Navigation/Pages/LRIT.aspx>

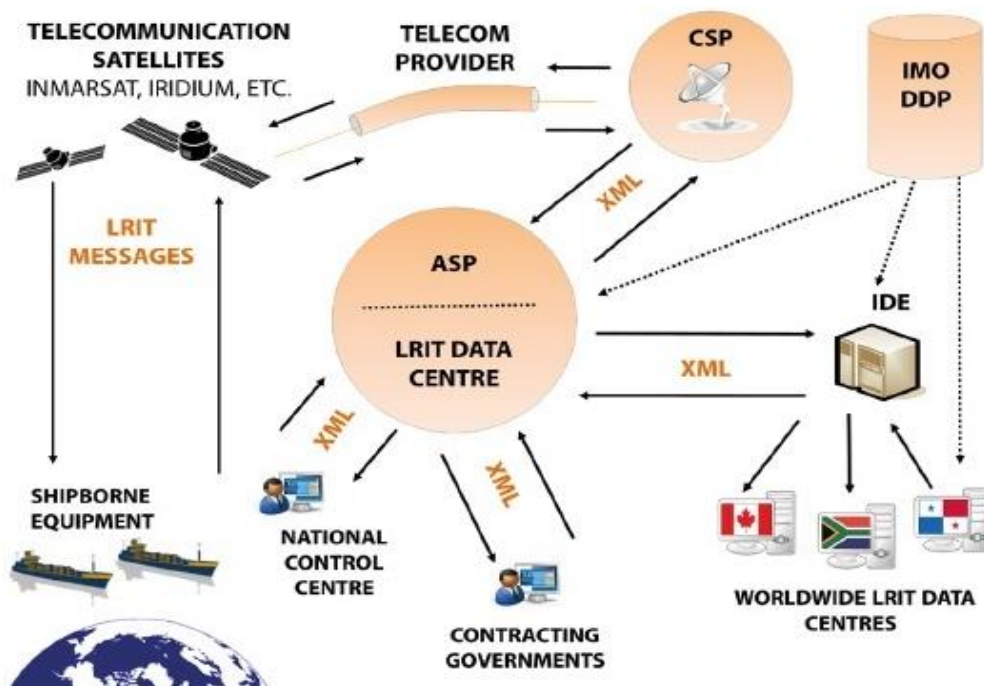
- **Coastal States** may request information on ships up to 1 000 nautical miles from their coasts irrespective of their flag
- **Port States** may request information on those ships that have declared one of their ports as destination, irrespective of their location or flag
- **Search and rescue authorities.**

There are two aspects to LRIT⁹⁹:

a. The “**reporting**” aspect where vessels to which LRIT applies report their identity and position, with a date/time stamp, every six hours (four times per day).

b. The “**receiving**” aspect where coastal States can purchase reports when vessels are within 1,000 nautical miles, or where port States can purchase reports when vessels seek entry to a port at a pre-determined distance or time from that port (up to 96 hours pre-entry).

The following figure explain how the LRIT work¹⁰⁰:



⁹⁹ The Australian CDC (Cooperative Data Centre), <http://www.auscddc.com>

¹⁰⁰ Inter maritime Certification Services (ICS Class), <http://icsclass.org/vessel-tracking-globally-with-lrit-how-it-works/how-lrit-works>

- LRIT shipborne equipment transmit position information to the Communication Service Provider(s) (CSP).
- CSP provides the communication infrastructure and services to ensure the end-to-end secure transfer of the LRIT message between the ship and the Application Service Provider(s) (ASP).
- ASP provides a communication protocol interface and add information to the LRIT Data Centre.
- The latter collects and provides LRIT information to its users according to the Data Distribution Plan (DDP) which defines rules and access rights.
- The DDP server is managed by IMO and is populated by SOLAS contracting governments, following IMO technical specifications.
- LRIT International Data Exchange (IDE) routes LRIT information between LRIT Data Centres according to the DDP.

The Role of Drones

Drones are typically aircraft, without a human pilot on board. They are also known as unmanned aerial vehicles (UAVs), remotely piloted vehicles (RPVs), or, in conjunction with their ground-based control stations, unmanned aerial systems (UAS) or remotely piloted aerial systems (RPAS). There are many kinds of drones, in all shapes and sizes, some little different to remote-controlled toy planes, others as futuristic as the spaceships imagined in years gone by.

There are many situations in which drones may indisputably serve the public interest in the security domain such as search-and-rescue, environmental monitoring, dealing with hazardous materials, surveillance, detection and identification, etc.¹⁰¹ It is obvious that drones can add another protective layer for shipping against maritime threats. At least 16 of the EU member states already own drones for military (combat and reconnaissance) or non-military (surveillance and detection) purposes.

¹⁰¹ A detailed analysis at: "EURODRONES Inc.", *A report by Ben Hayes, Chris Jones & Eric Töpfer, Amsterdam, February 2014.*

A range of unmanned systems including UAVs may be used to support the maritime tasks of the navies. Their tasks set out are anti-submarine warfare, mine countermeasures, anti-ship missile defence, counter-piracy operations and support to future submarine operations. Naval forces like EUNAVFOR use these vehicles in carrying out long-range surveillance and reconnaissance patrols. In the future the remote controlled aircraft will be used to monitor the seas off the coast of Somalia where pirates have been known to operate and give an early warning of a possible attack. In this case UAVs could be used to monitor the safety of World Food Programme vessels as they transit the Indian Ocean.

However, in addition to use by navies are already systems proposed for private maritime commercial vessels for reconnaissance, surveillance, identification and deterrence. Once a waterborne craft is identified on the vessel's radar, the UAV is deployed from the deck and provides aerial reconnaissance, surveillance, route clearance, mapping and hover-and-stare from an aerial vantage point granting the ability to improve the detection, recognition and identification if the approaching skiff is a credible pirate threat or just a friendly fishing boat. In addition, the UAV can act as a deterrent by initiating tactical maneuvers aiming at render the threat inoperable before using lethal self-defense methods thus providing uninterrupted safe passage for the vessel. Since counter piracy is justified, supporting team take the appropriate countermeasures with a designated marksmen and higher caliber anti-material weaponry rendering the pirate skiff inoperable prior to inappropriate dynamic engagements.

In September 2012 the European Commission adopted a working document entitled: ***“Towards a European strategy for the development of civil applications of Remotely Piloted Aircraft Systems (RPAS)”*** in which we can read that *“in the context of the Europe 2020 Strategy, (...) the emerging technology of Remotely Piloted Aircraft Systems (RPAS) applied to the development of civil aerial applications (commercial, corporate or governmental non-military) can contribute to these objectives.”*¹⁰²

¹⁰² Commission Staff Working Document *Towards a European strategy for the development of civil applications of Remotely Piloted Aircraft Systems (RPAS)*, Brussels, 4/9/2012, SWD(2012) 259 final. It is noted that *“This Staff Working Paper, in line with ICAO, adopted the term Remotely Piloted Aircraft System (RPAS) instead of Unmanned Aircraft System (UAS) previously used by the international community, to highlight the fact that the systems involved are not fully automatic but have always a Pilot in Command responsible for the flight.”*

CONCLUSIONS

Maritime security is important for exploiting maritime resources, securing livelihoods and development. It should, however, be framed within national and regional policy that goes beyond immediate needs and reactive engagement. Such an integrated strategy includes environmental protection, management of fish stocks, tourism and the transport needs of landlocked countries. Neglect could result in acute security challenges in the future.¹⁰³

Conflicts and instability in the sea or in areas of the world that affect the EU interest in open sea flows and of secure access, require deeper knowledge of the relationship among human security, governance and development, which is the core of the EU's strategy for the maritime security and the relevant action plan. This strategy includes the coordination of the various EU initiatives, organizations and the media, aiming at tackling the root causes of instability and assisting the resolution of conflicts, peacekeeping and aiding state-building, governance and development needs. Furthermore, it includes maritime security support, energy security, fisheries, shipping, trade and transport. In parallel, the EU is interested in a safe and open environment that will allow the free passage of trade and the peaceful, lawful and sustainable use of oceans' wealth.

The threats to the maritime domain will increase if governments have a lesser interest in addressing piracy and maritime terrorism in the region. The operational, legal, and policy implications of maritime terrorism and piracy are profound and greatly affect how these threats are addressed. Operationally, the international community must use the most effective and efficient tools to counteract these threats. This requires a pragmatic and sensible approach that takes both military and non-military options into account. It also requires a common understanding and a multinational effort to be taken against them. More importantly, eradicating terrorism and piracy at sea will

¹⁰³ "Maritime Security in the Gulf of Guinea", March 2013, Report of the conference held at Chatham House, London, 6 December 2012.

only be possible when the factors that give rise to them are properly addressed. This necessitates a long-term strategy aimed at ending corruption and strengthening the institutions of nations where terrorism and piracy flourish. It is a global endeavor that requires global cooperation and resolve.¹⁰⁴

The adoption of the EU Maritime Security Strategy ensure an integrated and comprehensive approach, with particular emphasis on threats, risks, challenges and opportunities that exist in the sea. The EUMSS not seek to create new structures, programmes or legislation, but strives to build upon and strengthen existing achievements and existing EU policies.¹⁰⁵

European Union developed synergies and common reactions in order to mobilize all relevant bodies and actors, both civil and military. The purpose of EUMSS is to identify all possible threats: conventional threats emanating from natural disasters and climate change, threats relating to the protection of vital marine resources for the safety of infrastructure and trade flows to the sea. In addition, this strategy aimed at identifying the specific resources and skills required to tackle all challenges, including intelligence, surveillance and patrols, and searching and rescuing maritime transport, European citizens evacuation and other crisis zones, the imposition of the embargo and providing aid to each mission and EU operation conducted within the framework of the CSDP.

It is important for the EU to strengthen the partnership and cooperation in the field of maritime security with other main international players, identifying areas of commonality and complementarity with them. In this context, initiatives could develop between the EU, UN and NATO in order to enhanced cooperative relations and coordination on relevant aspects of maritime security.

The increased need for European naval presence worldwide to protect sea lines of communication and vital trade flows have been recognized among the priority areas, by the EU officials and especially by European Defence Agency (EDA) in its capability development actions. This need also has been shown by the experiences of European maritime operations, in particular the anti-piracy operation off the coast of the Horn of Africa. Furthermore, the maritime operations conducted so far have underlined the need for interaction

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¹⁰⁵ JOIN/2014/09 final (“For an open and secure global maritime domain: elements for a European Union maritime security strategy”)

between military and civilian actors in order to explore the full potential of a comprehensive approach. This sets the requirements for exchange of information and related communication systems. *Interoperability* between navies and between military and civilian actors such as coast guards, police authorities, and other civilian authorities ashore, will be increasingly important. According to EDA, the role of navies in providing combat support to land forces will continue to be of great importance for the EU to conduct crisis management operations. Improved situational awareness, better communication, and remotely piloted devices will enhance efficiency of this combat support.¹⁰⁶

Space based surveillance systems are very important factor in supporting the maritime surveillance needs. EDA could work in cooperation with Commission and Members States in line with the EU Space Policy and the relative programmes. In addition they could work in developing cyber-crime prevention and cyber defence capabilities in order to secure the EU capacity building programmes in the field of maritime security, as well as to reinforce cyber incident response capabilities of CSDP structures, missions and operations, in line with the EU Cyber Defence Policy Framework.¹⁰⁷

The improvement of EU cooperation in matters of maritime security is a huge and crucial issue. Effective cooperation among all the actors involved in the maritime domain is crucial in order to tackle the maritime security threats. This includes many and varied partners at national, European and international level. It should be noted that the EU has accepted that there should be on the one hand, coordination and further synergies among Member States and on the other hand cooperation with its international partners, in accordance with the existing treaties and laws, as well as the 1982 United Nations' Convention on the Law of the Sea (UNCLOS) as the cornerstone of this approach.

¹⁰⁶ Future capabilities - Emerging trends and key priorities, European Defence Agency, October 2014.

¹⁰⁷ See more in Action Plan for the Implementation of the EUMSS.

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