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The Positive Implications for the Application of the International Ship & Port Facility Security and its Reflects on Saudi's Ports

A. Elentably[1]*
1. Faculty of Maritime Studies, King Abdul-Aziz University, Saudi Arabia.

ABSTRACT

The research paper summed up on the requirements of the application code security and safety of ships and ports (ISPS) and the technical aspects necessary for the application by the Saudi marine Ports. The requirements of the international code of safety and security of ships and ports such as: Additional tasks to be undertaken by port management. Activities and tasks that will port authorities. The impact of the elements of the maritime transport. Application and amendments to the deck. Government requirements. Special requirements for the management of ships. Application optimized for the requirements of the code ,Also interested in the research paper the mechanism of how to put these requirements into effect and the positive impact associated with the application. And also the requirements of the bridge on the ship ,beside clarification of the interconnections between the parties to the transfer process, such as administration of the commercial maritime fleet operations, control to the owners and how the administrative process for the crew to apply the appropriate code on the deck of ships and mutual relations with the insurance and chartering operations as well as the role of the port facility, to arrived How can the ports of Saudi Arabia to benefit from the positive application of code requirements and to enable these requirements with the parties to the process of maritime transport.

Keywords: ISPS-Port-Security-Safety-Shipping-seafarers

*Corresponding Author Email: akramelentably@hotmail.com
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INTRODUCTION

Maritime Security In Saudi's Ports

The Scopes which Saudi's efforts should be coverage. Important Tasks for Maritime Administration. Ideal Means of Stable Marine Transport in future. On the Assurance of Stable International Marine Transport. Efforts to assure the global competitiveness of Saudi's ocean-going shipping service operators and a planned increase of Saudi's -flag ships and Saudi's seafarers [study of tonnage-geared standard tax system and so forth],Consultation in search for the "Ideal Means of Stable Marine Transport in future" was Conducted by the Minister of Land, Infrastructure and Transport to the Council of Transport Policy on February 8, in order to ask the Council to discuss the means of assuring stable marine transport indispensable for Japan to accomplish continued sustainable growth as a maritime and trading nation in a global international economic community. Following the consultation, an "International Marine Transport Task Force" was established, composed of members with wide knowledge, representing various circles, such as individuals of experience and academic standing in the areas of trade of resources and energy, finance, traffic economy and so forth. The policy aims were drastically condensed into "Assurance of the global competitiveness of Saudi's ocean-going shipping service operators" and "Securing Saudi's -flag ships and Japanese seafarers", while as for measures to achieve the policy aims concerned, the introduction of the laws for, among others, the introduction of a tonnage-geared standard tax system, securing of Saudi's -flag ships and Saudi's seafarers and so forth were enumerated. Hereafter, the decision was taken to work on constructing an institutional framework to target stable international maritime transport based.

Efforts to Secure and Nurture Human Resources for the Sound Development of the Maritime Industry.

Efforts to gather, nurture seafarers and target their career development to support them in transforming themselves into land-based ocean engineers Marine transport, which is indispensable for the society and economy of Japan as a maritime state, is supported by seafarers engaged in ship navigation and ocean engineers who manage and support it on land. In securing the safety and stability of marine transport, the role played by seafarers (ocean engineers) as the human infrastructure is considerable. Since the valuation related to the navigational safety of Saudi's -flag ships and ships served by Saudi's seafarers on board is extremely high in these days, the government should positively promote. Efforts to secure and nurture excellent Japanese seafarers (ocean engineers). With this in mind. The Human Infrastructure Task Force was

established within the Maritime Affairs Subcommittee of the Traffic Policy, which investigated and discussed an ideal maritime policy to secure and nurture human resources in the field of maritime affairs, focusing on securing and nurturing excellent Saudi's seafarers (ocean engineers).Subsequently, an interim to the effect that efforts were required mainly for four measures, namely nurturing seafarers, gathering them, targeting their career development and supporting their transformation into ocean engineers on land, with the necessary institutional revision and so forth scheduled to be carried out in future. Moreover, with a view to nurturing young seafarers, who will play a key role in the Saudi's marine transport of the next generation. Support program to develop next-generation human resources in the shipbuilding industry. Since nearly half the skilled technical experts for shipbuilding in the Saudis shipping industry are over 30 years old, an unprecedented rapid and large-scale alternation of generation will take place in the coming decade. If effective countermeasures are not taken under such circumstances, the level of technique at manufacturing sites, which has underpinned the international competitiveness of the Japanese shipbuilding industry to date, will be abruptly degraded, which might lead to the loss of such competitiveness. With such conditions in mind, an intensive training project commenced from fiscal 2004 to ensure "expert workman techniques related to shipbuilding, could be smoothly passed on to the younger generation. Beside that there are a huge governmental toward marine educational such as establish separate faculty specialized in ports and maritime transport, navigation, surveying and marine engineering

Assurance of Safe, Secure and Environmentally-Friendly Marine Transport

Reinforcement of Safety Assurance Measures

Reinforcement of the audit of safety management and seafarer's labor / guidance system In recent years, there have been intense efforts to ensure navigational safety in the form of the appropriate navigational control of ships and improved working environment of seafarers, Since accidents involving ships, including coastal freighters or ultrahigh-speed vessels, have been Occurring. The safety assurance of vessel navigation is the responsibility of the Inspector for Safety Management and Seafarers Labor, who is appointed in each regional transport bureau and so forth, after the unification of the Inspector of Navigation in charge of inspection on safety Management of passenger boats as well as the freighters and the Inspector of Seafarer's Labor in charge of the working conditions of seafarers. Therefore, an efficient and agile audit can be performed by the executive officer, who has a wide supervisory authority related to the business laws (Maritime Transportation Law, Coastal Shipping Business Law) and seafarers-related laws (Seafarers Law, Seafarers Employment Security Law, Law for Ships' Officers and boats

'operators). Moreover, the training system has been reinforced, and a new audit system has been Constructed, capable of checking the past audit status, record of contraventions and so forth any time on the spot during the audit, in order to enhance accuracy when the Inspector for Safety Management and Seafarers Labor is executing duties over a wide area, in order to conduct unified planning / gestation and guidance for the services to be provided by the Inspector for Safety Management and Seafarer's Labor. Measures to prevent recurrence when a serious accident occurs When a serious ship accident occurs, measures are taken, with the cooperation of the Saudi's Coast Guard and so forth, such as prompt inspection, an examination to find out the cause, reprimand or guidance of the party concerned, in accordance with the laws for reconstructing the safety management system, and the implementation of thorough safety management in order to prevent the recurrence of similar accidents on a nationwide basis and so forth oceangoing vessel grounding accident in the offing of the Kashima port and so forth. Measures to ensure the safety of ultrahigh-speed vessels In recent years, accidents caused by the collision of hydrofoil type ultrahigh-speed vessels, navigating at a high velocity of about 40 knots, and whales and the like have occurred one after the other in the seas around Japan. In consideration of such circumstances, the Ministry of Land, Infrastructure and Transport established the "Safety Measures Advisory Committee for Ultrahigh-Speed Vessels" in April, 2006 to study how to ensure the safety of hydrofoil type ultrahigh-speed vessels and finalized an interim summary report in August the same year. Moreover, it was decided that unified guidelines for the content of training and the training period for the navigation personnel of hydrofoil type ultrahigh-speed ships should be provided, and it has also been decided that the "Guidelines for the Training of Navigation Personnel of Hydrofoil Type Ultrahigh-Speed Vessels" are to be formulated to improve the training level by the end of fiscal 2007. Introduction of transport safety management system "Law Revising a Part of the Railway Business Law etc. for the Improvement of the Safety of Transportation" (Law No. 19 of 2006) was approved in the Diet and put into effect in October, 2006, to deal with circumstances whereby the trust in the safety of public transportation facilities for the nation was seriously eroded and seek to enhance the safety management system. Thereby, the transport safety management system was applied to the marine transportation field in addition to traffic fields, such as rail and air transport. Implementation of The Voluntary IMO Member State Audit Scheme In the wake of large-scale accidents involving oil spillages from tankers, there has been an increasingly urgent need to eliminate substandard vessels. The background involves the present situation having been illustrated, in which the government of the flag state has failed to

satisfactorily meet obligations to supervise and oversee ships of its own flag, to ensure they observe the international standard. which audit scheme by International Maritime Organization (IMO) on the enforcement of the conventions by the flag states, and after considerations under IMO to seek a means to have the government of the flag state meet its obligations under the conventions and subsequently to introduce the audit scheme, the implementation of the audit scheme was adopted at the 24th Session of the IMO Assembly in December, 2005, and has started since September, 2006.in recognition of the fact that the operation is conducted comprehensively and efficiently to meet obligations under the international conventions, from all the viewpoints of flag, port and coastal state, including the construction of the "Maritime Affairs Quality Management System", the nurturing of inspectors, and the establishment of the system of Port State Control (PSC) implementation and so forth. Drastic reform of the pilotage system As Saudis' seafarers have become increasingly scarce in recent years, a shortage of pilots with sea captain experience is anticipated in the near future, raising apprehension of a potential inability to maintain smooth shipping traffic operations. Furthermore, in view of the increasing demand for improved operational efficiency / accuracy of the piloting service forming part of the port service, and based on the perspective of strengthening the international competitiveness of Saudi's ports, the Pilotage Service System" was established, within which discussions concerning the desirable nature of the pilotage system took place, and a bill partially amending the Marine Pilot Law ("Bill for the Partial Amendment of the Port Law and Others for Strengthening the Basis of Maritime Distribution"). Reinforcement of safety and security measures in the Straits of Malacca and Singapore In order to promote the measures against piracy and armed robbery against ships, the guideline was compiled in March 2006. Based on this guideline, Ministry of Land, Infrastructure and Transport has decided to promote various measures even more strongly in order to reduce the number of the incidents by pirates and armed robbers, through efforts for cooperation with related agencies and shipping industries, and through enhancement of maritime security in international society. As part of efforts for international cooperation in the Straits of Malacca and Singapore, survey of traffic volume was conducted to gage how many ships were actually navigating in the Straits. The results of a survey made clear that beside Saudi, many other countries were the beneficiaries in various ways from the passage through the Straits. for enhancing safety of navigation and environmental protection were proposed by the littoral states, and the "Kuala Lumpur Statement" was adopted, outlining cooperation and so forth, toward establishing mechanism to provide funding for the projects such as replacement and maintenance of Aids to Navigation. In order to establish a new

framework for international cooperation including foundation of Aids to Navigation Fund, Japan, as one of the major user states of the Straits, contribute proactively to the future progress of discussions at international conferences and so forth.

Tackling Environmental Problems

Countermeasures against global warming In order to attain the targets for reduction accordance. Protocol through the promotion of a modal shift from transportation by truck to coastal shipping and so forth, the targeted goal in the maritime transportation-related sector is a reduction of around 1.4 million tons in the CO2 emission volume by fiscal 2010, and the Maritime Bureau is implementing "Comprehensive Measures for the Greening of Maritime Transportation" in order to attain the said reduction target. In addition, in order to prevent any increase in the CO2 emission volume from the transportation sector, such as from automobiles and ships, using petroleum and similar fuels, the Energy Saving Law was revised in fiscal 2005 (put in force on April 1, 2006), which obliges shipping service operators with a transport capacity exceeding a certain scale (holding ships with gross tonnage of 20,000 tons or more) in the maritime transportation-related sector. Tackling ship recycling system at an international level, Since the poor conditions of the related labor environment, sea pollution originating from recycling yards and so forth are viewed as problems related to ship recycling (the dismantlement of ships) conducted in developing countries, in recent years, a study is underway in international organizations, such as the United Nations Environmental Programme (UNEP),International Maritime Organization (IMO), International Labour Organization (ILO) and so forth to try and solve such problems. In particular, the IMO has decided to formulate a new convention concerning ship recycling in 2008-2009, and discussion of the convention draft is progressing. Efforts to ratify the ILO Maritime Labour Convention. At the 94th(Maritime) Session of the International Labour Organization (ILO) Conference held in February, 2006, the Maritime Labour Convention 2006 was adopted, which consolidates all the 60 or so conventions and similar bodies that have been adopted to date since the 1919 establishment of ILO, to ensure they reflect the present era, and simultaneously improve their effectiveness. It has been decided that future efforts for the preparation and study required to ratify this convention, such as the arrangement of domestic laws, an enforcement system and so forth for governing inspections of flags state or PSC, etc. will be advanced, and, at the same time, coordination and cooperation with the countries in the Asia region will also be promoted in order to expedite ratification by the same.

Tackling Maritime Policy and Regional Revitalization and so Forth in the Area of Maritime Affairs

Dealing with Basic Act on Ocean Policy Basic Act on Ocean Policy, which contains the basic concepts of ocean policy, government responsibility, local public bodies and so forth, as well as basic measures etc., (put in force on July 20, 2007). While the Maritime Bureau has been promoting such various measures to date, including improvement in the environment of international competitiveness, assurance of stable transportation, promotion of the marine business and support for various kinds of research and development as well as nurturing and securing human resources, it has been recognized, in view of the enforcement of the "Marine Basic Law", that various measures toward the realization of a sea-oriented state shall be promoted concentrically and comprehensively in future, as in the past and the decision has also been taken to diligently strive for the further development of the marine industry as a whole and reinforcement of its international competitiveness. Efforts for regional revitalization In view of the severely worsening circumstances surrounding public transport in local areas, the "Act for Revitalizing and Reviving Local Public Transport" was enacted in May, 2007 for the purpose of implementing measures for the smooth introduction of a new form of passenger transport service suited to local needs, as well as comprehensive government support for the joint efforts of related local parties led by the municipality, so that they may create attractive regions through the revitalization and revival of local public transport.

Efforts Exploiting the Advantage of Marine Transport

Enhancing the appeal of voyages by sea and the promotion of coastal passenger ships, including encouragement of sightseeing tours to and from remote islands In view of the interim proposal compiled at the "Roundtable Conference for Reviving the Attractiveness of Voyage by Sea" in June, 2006, the topics of "Enhancing the appeal of Voyages by Sea" and "Promotion of Sightseeing Tours to Remote Islands" have been positioned as the most important measures of fiscal 2006. With a view to enhancing the appeal of "Voyages by Sea in Casual Wear". Promotion of a future business model for coastal shipping the coastal shipping industry has faced various problems, such as securing seafarers, building ships for replacement and safety assurance. However, under present circumstances, it is difficult for coastal shipping operators, who are mostly medium, small and micro enterprises, to work on these problems individually. Under such circumstances, a movement for the loose grouping of coastal shipping operators, utilizing ship administration companies, is attracting attention. It is important to promote these grouping movements as a new business model of coastal shipping for the future, in order to

ensure stable marine transport and revitalize coastal shipping. For this purpose, the national government has positively started striving for its propagation and promotion.

Efforts to Promote the Construction of New Coastal Vessels to Replace Old Ones

Coastal shipping is one of the trunk distribution industries in Japan which supports its economy and national life, accounting for about 40% of domestic distribution, and in particular, about 80% of transport of fundamental goods for industry (steel, petroleum, cement and so forth).In recent years, the tendency toward an "aging population combined with diminishing birthrate" has advanced rapidly in the coastal shipping sector, which supports the above-mentioned activities. Given the importance of revitalizing coastal shipping in order to realize the construction of new coastal vessels replacing old ones on a stable and adequate scale, an "Action Plan for Promoting the Construction of New Coastal Vessels to Substitute Old Ones" was formulated in March, 2006 to solve those problems.

Maritime Security in Ports

Examples of maritime terrorist

There are some examples of maritime terrorist attacks that we all remember such as e.g.:

The USS Cole bombing was a suicide attack against the US Navy guided missile destroyer USS Cole (DDG 67) on October 12, 2000 while it was harboured in the Yemeni port of Aden. A small craft approached the port side of the destroyer and an explosion occurred, putting a 35-by-36-foot gash in the ship's port side. The blast hit the ship's galley, where crews were lining up for lunch. Seventeen sailors were killed and 39 others were injured in the blast.

Figure 1. USS COLE

Figure 2. USS COLE - impact of small suicide launch

On October 6, 2002, the m/t Limburg was carrying 397,000 barrels of crude oil from Iran to Malaysia, and was in the Gulf of Aden off Yemen to pick up another load of oil. It was registered under a French-flag and had been chartered by the Malaysian petrol firm On October 6, 2002, the Limburg was carrying 397,000 barrels of crude oil from Iran to Malaysia and was in the Gulf of Aden off Yemen to pick up another load of oil. It was registered under a French flag and had been chartered by the Malaysian petrol firm Petronas. While it was some miles offshore, an explosives-laden dinghy rammed the starboard side of the tanker and detonated. The vessel caught fire and approximately 90,000 barrels of oil leaked into the Gulf of Aden .A 38 year-old Bulgarian crew members was killed and 12 other crew members were injured.

Figure 3. Offshore location of m/t Limburg attack

Figure 4. Impact of dinghy on m/t Limburg

By far the most lethal maritime terrorist incident this millennium was the attack on the m/v Super ferry 14 in Manila by the Abu Sayyaf Group on 27 February 2004. Just after midnight local time, a bomb exploded on board the passenger ferry, which had left Manila Bay two hours earlier. The resulting fire caused the ship to capsize and more than 116 people were killed in the attack. On that day, the 10,192 ton ferry was sailing out of Manila with about 900 passengers and crew. A television set filled with 8 lb (4 kg) of TNT had been placed on board. 90 minutes out of port, the bomb exploded. 63 people were killed immediately and 53 were missing and presumed dead.

Figure 5. m/v Superferry 14 after bombing

Figure 6. m/v Super ferry after capsizing

The November 5, 2005, pirate attack on the Seaborne Spirit cruise ship 100 miles off the Somali coast was the 25th such incident in the last six months. Six vessels are currently being held by pirates, one of them captured at a distance of 120 miles from the coast. The Seaborne Spirit managed to evade being boarded by two boatloads of pirates on inflatable speedboats armed with grenade launchers and machine guns. The ship, with more than 300 people on board, was on its way to the Kenyan port of Mombasa where it was due to pick up more passengers, including Australians. The ship came under attack at 5.30 a.m. as the pirates approached in at least two speedboats shooting at the ship with grenade launchers and machine guns. They were repelled by

the ship's crew who set off electronic countermeasures, described as "a loud bang" by one of the passengers. One crew member was slightly injured in the early-morning incident. There was at least one RPG that hit the ship, one in a stateroom. There were calls for a naval task force to try to stop attacks in Somali waters - among the most dangerous in the world.

Figure 6. Workers are seen painting the flank of the US-owned Seaborne Spirit ship docked in Port Victoria in the Seychelles archipelago on November 7, 2005 after experts removed an unexploded grenade embedded in a passengers cabin. (AFP photo)

In Southeast Asia in particular, since the September 11 attacks a number of worst case scenarios have been postulated by the media and academics alike. The formation of a terrorism-piracy nexus was, and still is, seen as a potential alarming development. It was believed that given the high rates of piracy seen in the region's waterways, coupled with the valuable knowledge and skills of the pirates, it was only a matter of time before terrorists teamed up with pirates. The possibility of terrorists blocking strategic waterways like the Malacca and Singapore Straits was also seen as a real threat. Predictions were made that militants could sink a large vessel at a narrow chokepoint in one of the region's waterways, block the passage of shipping and cause widespread economic chaos. Despite these isolated incidents of maritime terrorism and the predictions of worst case scenarios, maritime terrorist attacks are, and have remained, quite rare. They constitute only two percent of all international terrorist incidents over the last three decades. While there is no doubt that a number of terrorist organizations have the desire or motivation to carry out attacks of this kind, in general there is still currently a lack of capability in this area of operation and it is likely to remain the case in the immediate future. Attacks against maritime targets require specialized equipment and skills; they also might require some knowledge of local shipping patterns, boat operation and maintenance, and boarding techniques. Even the attack involving the USS Cole, conceivably one of the simplest methods of attacking a

maritime target, failed in its first attempt. The original intended mark was in fact the USS The Sullivan. However, in their first try at launching the suicide boat, the al-Qaeda operatives underestimated the weight of the explosives they were carrying on board and the boat sank as it entered the water. Although, at present, the probability of a large-scale maritime attack is low, the threat of maritime terrorism must not be ignored altogether. There is evidence that preliminary steps have been made by the al-Qaeda network in particular to develop some competency in this area. Recently, a basic diving manual was recovered in Kandahar in Afghanistan and it is believed that this is evidence of a larger plan to set up and run a diving school. J.I. (Jemaah Islamiyah's) has also been conducting training in the southern Philippines in order to develop underwater destruction capability. In addition, J.I. and a number of other jihadist groups based in Indonesia already fully exploit the maritime domain for the purposes of transporting people and arms to and from the Philippines. The threat of terrorist acts against the shipping and port industry is real and not imaginary. It is for these reasons the Assembly of IMO, in November 2001, decided that the organization should review measures and procedures to prevent acts of terrorism that threaten the security of passengers and crew and the safety of ships. It is also obvious that the Contracting Governments to the 1974 SOLAS Convention, when they adopted the special measures to enhance maritime security in December 2002, were well aware of potential threats.

Maritime Transportation Security Act Of 2002 (Mtsa)

After the terrorist attack of 9/11 in 2001 on the WTC twin towers the fear of imports of mass destruction weapons or terrorists transported by ships in containers was imminent and the US took measures by installing the Maritime Transportation Security Act of 2002 (MTSA) in January 2002. The goal of MTSA is to prevent a Maritime Transportation Security Incident (MTSI) with:

loss of life

environmental damage

transportation system disruption

Economic disruption to a particular area.

MTSA calls for a series of plans on the national, port and individual vessel/facility level - this “family of plans” concept worked well for oil spill response and was used to increase MTSA awareness throughout the maritime community to coordinate information and to deal with potential threats. Vessels and facilities that load/carry certain dangerous cargoes (flammable, potentially explosive, caustic or environmentally hazardous) must have individual security plans

that address fundamental security measures such as access controls, communications, restricted areas, cargo handling and monitoring, training and incident reporting. The "port plan" called the Area Maritime Security Plan covers facilities and waterway venues such as parks or public piers that are not required to have individual security plans. The AMS plan is developed and implemented by an Area Maritime Security Committee with representatives from federal, state, and local governments as well as industry and the public sector. These Committees and the AMS plans are the backbone of communicating and coordinating surveillance and preparatory measures as threats to our maritime infrastructure warrant.

Csi/Ctpat (Supply Chain Security)

One of the Customs and Border Protection (CBP) programmes is the Container Security Initiative (CSI) programme for CBP-inspectors at large overseas ports. The duty of such inspectors is to pre-screen cargo containers being shipped to the United States, i.e. identify and inspect high risk containers before they are loaded on ships at their port of origin. The programme focuses on four core elements:

1 Using automated information to identify and target high-risk containers

2 Pre-screening containers as high risk before they arrive at a US port

3 Using detection technology to quickly pre-screen high-risk containers

4 Using smart, tamper-proof containers

Companies and organizations become participants in the programme by defining and implementing a formal internal supply chain security programme based on a self assessment against guidelines provided by the CBP that address various items such as procedural security, physical security, education and training, access controls, manifest procedures and conveyance security. Customs and Border Protection instituted the 24-Hour Rule, which requires information on cargo destined for the United States to be submitted through the CBP Automated Manifest System (AMS) by the carrier or by a "non-vessel operating common carrier" if they are AMS certified. The rule requires detailed descriptive information for all cargo. It requires cargo vessels entering ports to provide a cargo manifest 24 hours before leaving their last foreign port. A "Do Not Load" order may be issued for the carriers at the foreign port for cargo that does not meet the 24-Hour Rule. Some new programmes focus on point-to-point verification of the global supply chain. Operation Safe Commerce (OSC) and Safe and Secure Trade Lanes (SST) both aim at finding reliable and cost effective procedures and technologies to track containers from their point of origin to their final destination. Operation Safe Commerce (OSC) is a public/private partnership implemented by the Transportation Security Administration. OSC is

dedicated to finding methods and technologies to protect commercial maritime shipments from the threat of terrorist attack, illegal immigration and other contraband while minimising the economic impact on this critical transportation system. It is a federally funded programme providing a test-bed for new techniques to enhance the security of containerized shipping, from the overseas point of origin throughout the supply chain to the US point of distribution. Those security techniques that prove most successful under the programme will then be recommended to create international standards for secure and efficient containerized shipping.

CSI: Container Security Initiative (12-04-2002)

Containerized shipping is a critical component of international trade. According to the CBP: about 90% of the world's trade is transported in cargo containers almost half of incoming US trade (by value) arrives by containers onboard ships nearly seven million cargo containers arrive on ships and are unloaded at US seaports each year. As terrorist organizations have increasingly turned to destroying economic infrastructure to make an impact on nations, the vulnerability of international shipping has come under scrutiny. Under the CSI programme, the screening of containers that pose a risk for terrorism is accomplished by teams of CBP officials deployed to work in concert with their host nation counterparts.

CSI consists of four core elements

1 identify high-risk containers. CBP uses automated targeting tools to identify containers that pose a potential risk for terrorism, based on advance information and strategic intelligence.

2 pre-screen and evaluate containers before they are shipped. Containers are screened as early in the supply chain as possible, generally at the port of departure.

3 use technology to pre-screen high-risk containers to ensure that screening can be done rapidly without slowing down the movement of trade. This technology includes large-scale X-ray and gamma ray machines and radiation detection devices.

4 use smarter, more secure containers that will allow CBP officers at United States ports of arrival to identify containers that have been tampered with during transit.

The initial CSI programme has focused on implementation at the top 20 ports shipping approximately two-thirds of the container volume to the United States. Smaller ports, however, have been added to the programme at their instigation and participation is open to any port meeting certain volume, equipment, procedural and information-sharing requirements. Future plans include expansion to additional ports based on volume, location and strategic concerns. The CSI programme offers its participant countries the reciprocal opportunity to enhance their own incoming shipment security. CSI partners can send their customs officers to major US ports

to target ocean-going, containerized cargo to be exported from the US to their countries. Likewise, CBP shares information on a bilateral basis with its CSI partners. Japan and Canada are currently taking advantage of this reciprocity. CSI has also inspired and informed global measures to improve shipping security. In June 2002, the World Customs Organization unanimously passed a resolution that will enable ports in all 161 member nations to begin to develop programmes according to the CSI model. On 22 April 2004, the European Union and the US Department of Homeland Security signed an agreement that calls for the prompt expansion of CSI throughout the European Community.

C-TPAT - Customs-Trade Partnership against Terrorism

C-TPAT is a joint government-business initiative to build cooperative relationships that strengthen overall supply chain and border security. C-TPAT recognizes that Customs can provide the highest level of security only through close cooperation with the ultimate owners of the supply chain: importers, carriers, brokers, warehouse operators and manufacturers. Through this initiative, Customs is asking businesses to ensure the integrity of their security practices and communicate their security guidelines to their business partners within the supply chain. C-TPAT offers trade-related businesses an opportunity to play an active role in the war against terrorism. By participating in this first worldwide supply chain security initiative, companies will ensure a more secure and expeditious supply chain for their employees, suppliers and customers. Beyond these essential security benefits, CBP will offer benefits to certain certified C-TPAT member categories, including:

a reduced number of CBP inspections (reduced border delay times)

priority processing for CBP inspections (front-of-the-line processing for inspections when possible)

assignment of a C-TPAT Supply Chain Security Specialist (SCSS) who will work with the company to validate and enhance security throughout the company's international supply chain

potential eligibility for CBP Importer Self-Assessment programme (ISA) with an emphasis on self-policing, not CBP audits

Eligibility to attend C-TPAT supply chain security training seminars.

International Ship and Port Facilities Security Code (ISPS code)

The ISPS code is limited to ships over 500 gt. the main objectives of the ISPS code are as follows:

To detect security threats and implement security measures

To establish roles and responsibilities concerning maritime security for governments, local administrations, ship and port industries at national and international level

To collate and promulgate security-related information

To provide a methodology for security assessments so as to have in place plans and procedures to react to changing security levels. In Belgium they installed a central Federal Committee for the Security of Port Facilities (FCSPF) and a Local Committee for the Security of Port Facilities (LCSPF) for each seaport. The members of these committees are shown below:

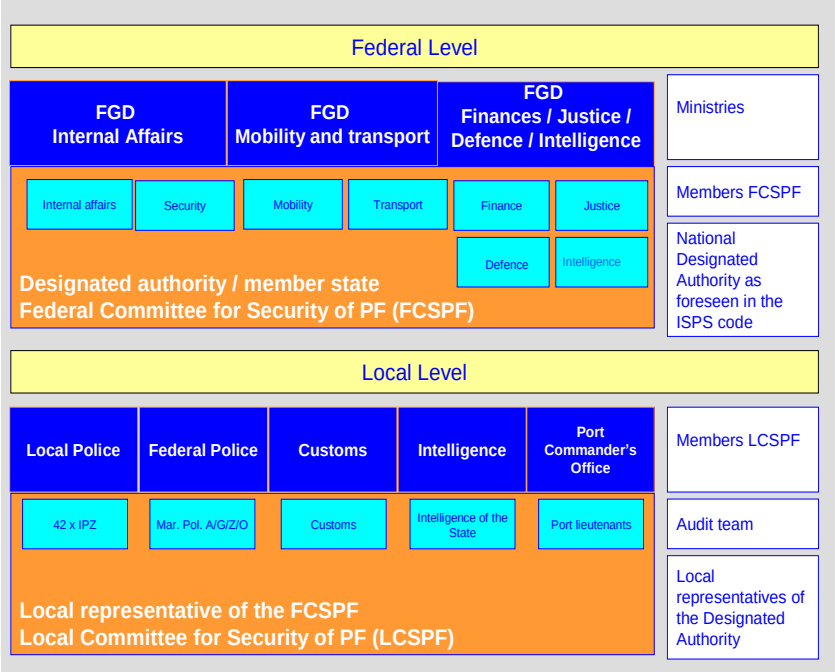

Figure 7. Federal and Local Committees for the Security of Port Facilities

The process and flow chart used by the port authority of Ghent is illustrated below:

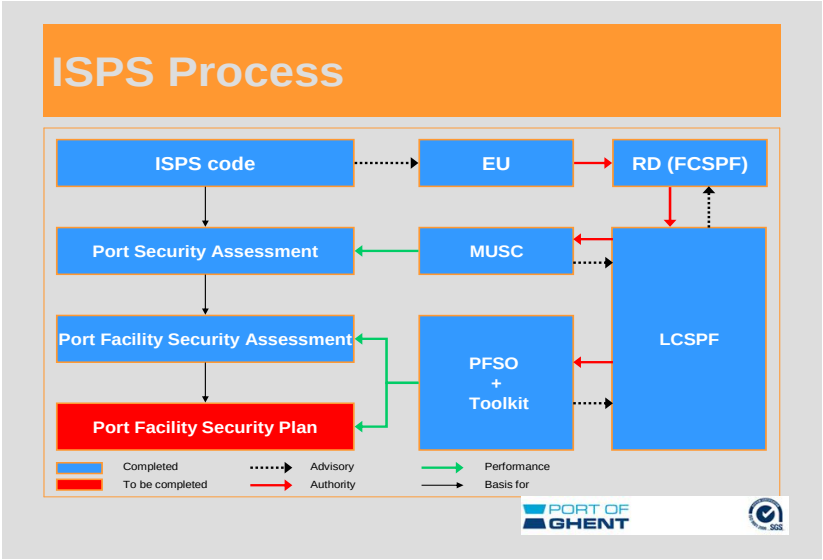

Figure 8. ISPS process

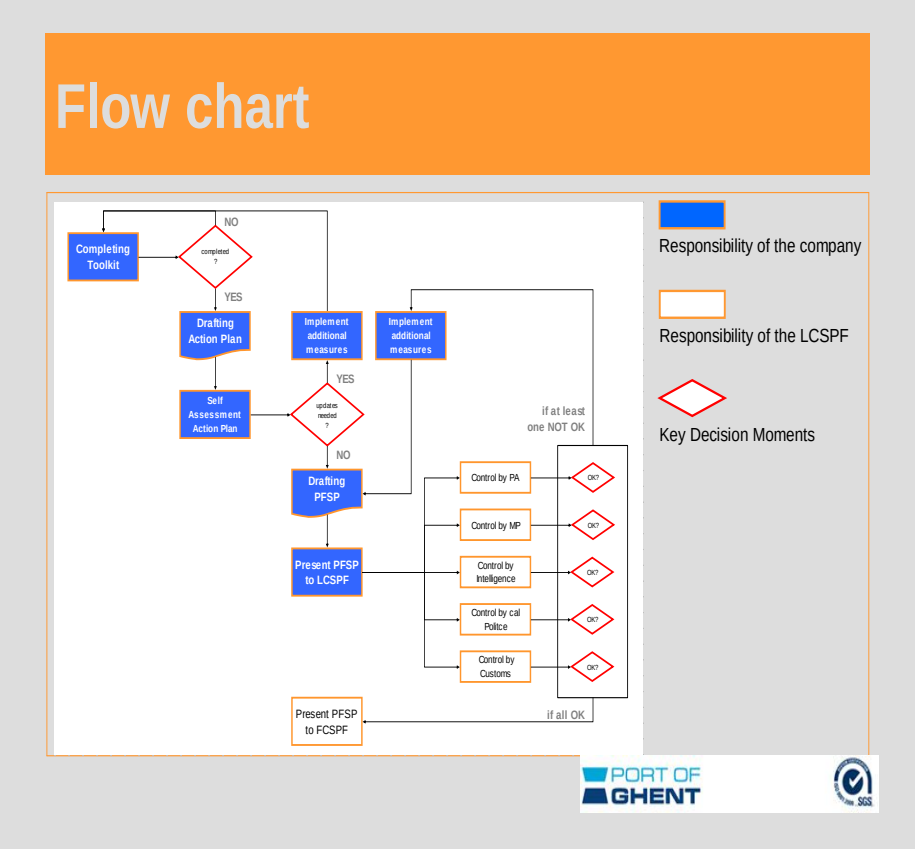

Figure 9. Flow chart for follow-up

A ship has to give his security level (SL 1,2 or 3) 24 hours before arrival in port. It is the designed authority of the government of the flag state that decides about the SL of its ships. The master of the ship can take extra security measures if he wants, but he cannot put his SL on a higher level. Only emergency safety measures can overrule the security measures provided in the SSP (Ship Security Plan). If the SL of the port facility is higher than that of the ship, then the SSO (Ship Security Officer) has the obligation to equalize the security level of the ship. When the ship has a higher security level than that of the port facility, the SSO together with the PFSO (Port Facility Security Officer) have to make up a DOS (Declaration Of Security). It is the designed authority of the government of the port that decides about the SL of the port facilities in the port area. The security measures for each SL are written in a PFSP (Port Facility Security Plan). The security measures are more severe when the SL is higher and also depend on the risks that can be encountered at the port facility. For instance a dangerous goods terminal, a passenger terminal or a container terminal will be fenced and guarded. An open bulk terminal, with no dangerous commodities, will only be fenced and guarded on the ship/shore interface when we have an SL 2 or 3. At security level 1 we have business as usual, without any economic constraints. The security measures can be visualized in the following templates:

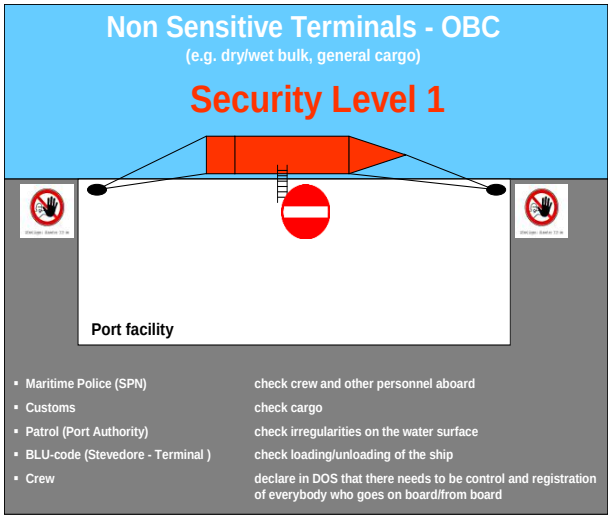

Figure 10. Non sensitive terminals – OBC – SL1

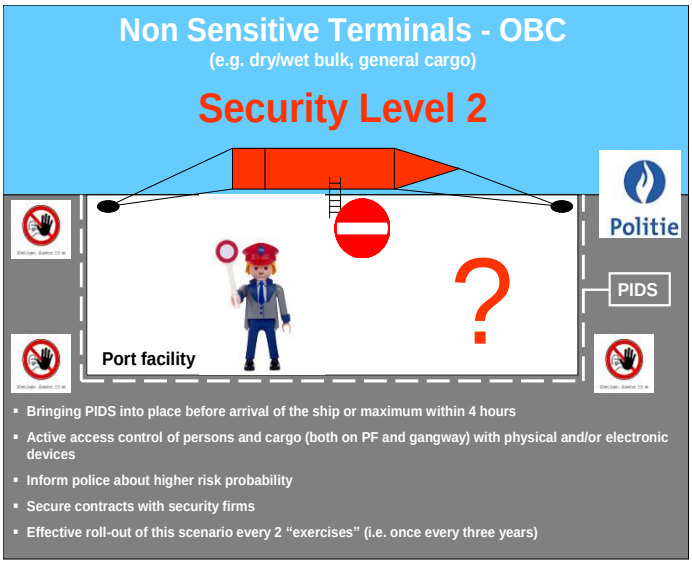

Figure 11. Non sensitive terminals – OBC – SL2

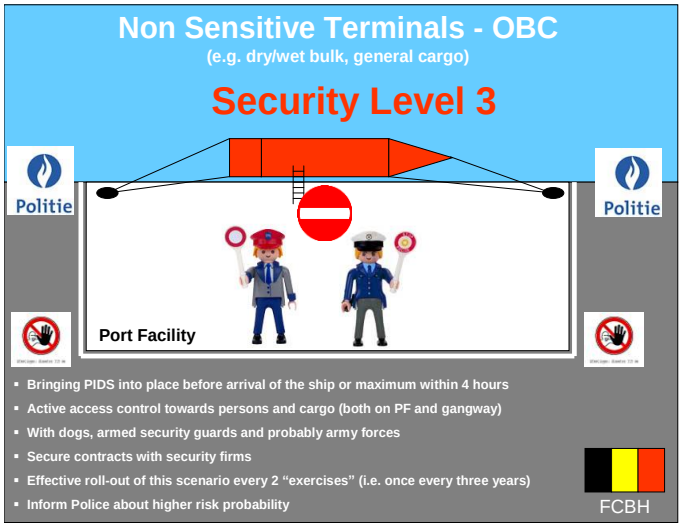

Figure 12. Non sensitive terminals – OBC – SL3

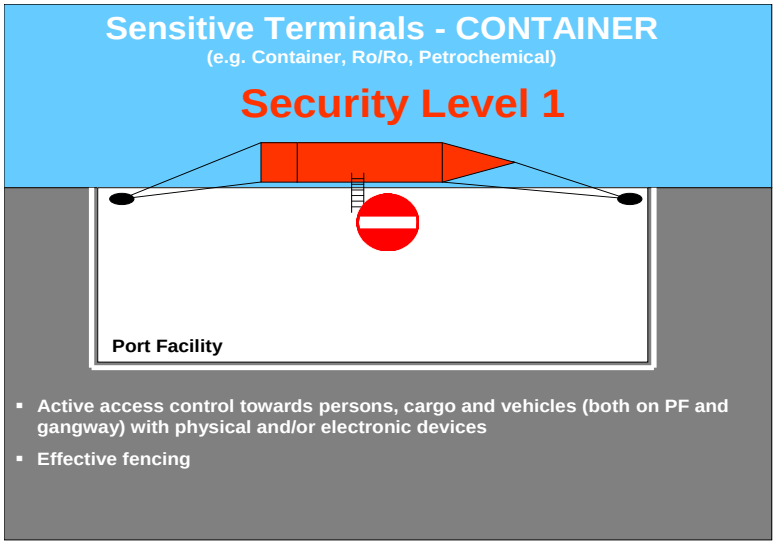

Figure 13. Sensitive terminals – containers – SL1

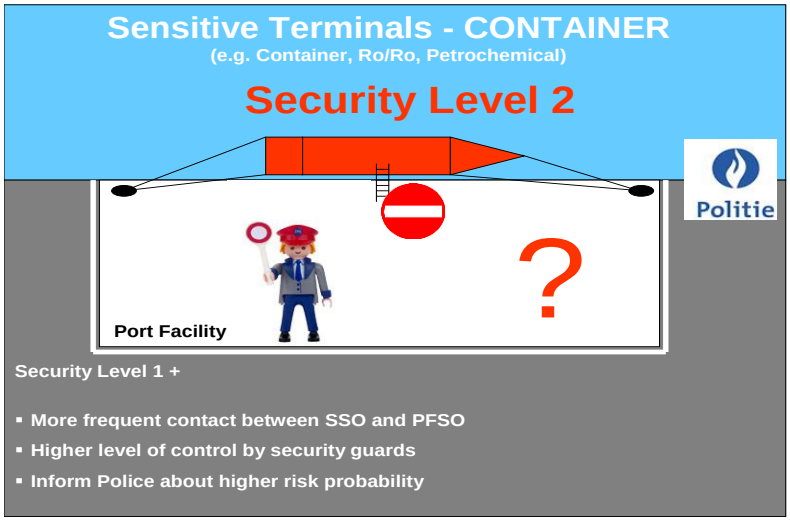

Figure 14. Sensitive terminals – container – SL2

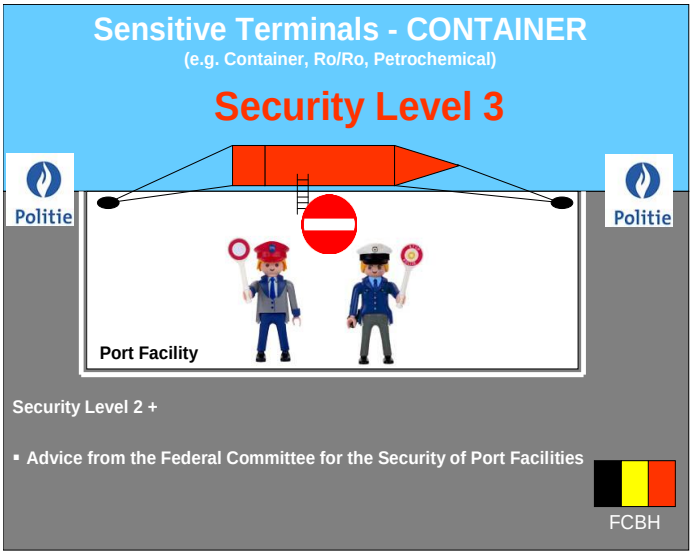

Figure 15. Sensitive terminals – container – SL3

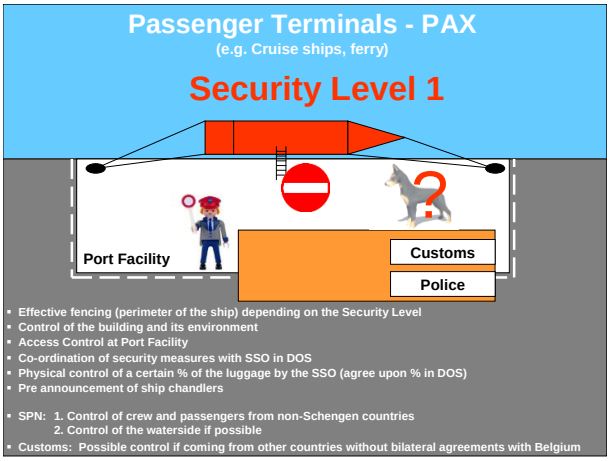

Figure 16. Passenger terminal – SL1

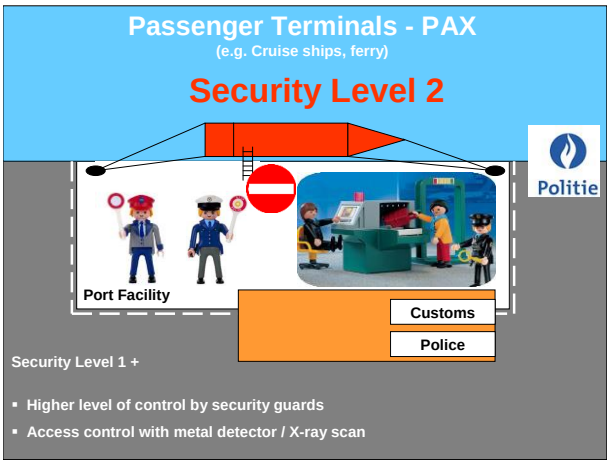

Figure 17. Passenger terminal – SL2

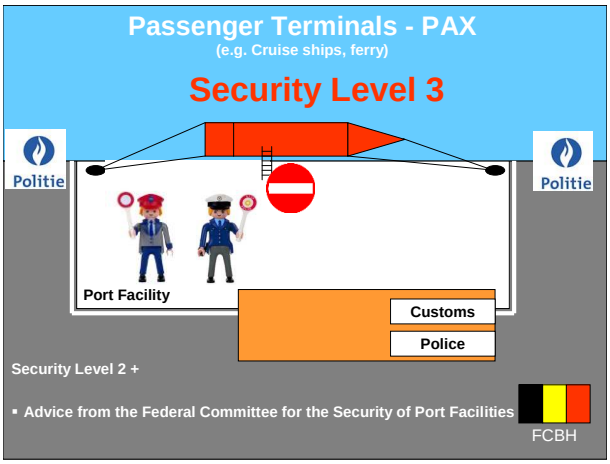

Figure 18. Passenger terminal – SL3

There is always access control to the ship on each security level. This can be done by means of authorised passes delivered by the port authority or the federal government (e-id card) or by the PFSO (e.g. alfapass), be it an authorised visitor badge as described in the PFSP.

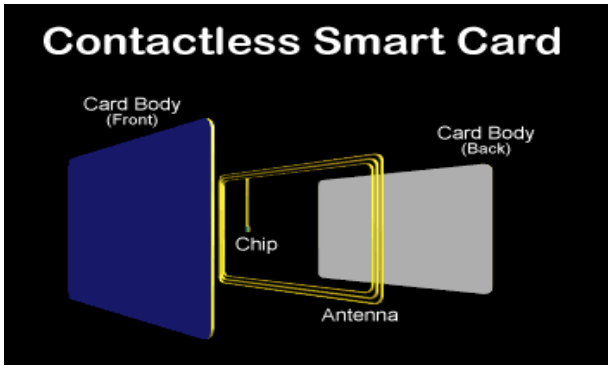

Figure 19. Alfapass RFID-card port

CONCLUSION

The Saudi government should have taken implementation various security measures, the government's Maritime Transportation Security Act of 2002 (MTSA) provides additional security to Saudi ports. The International Convention for the Safety of Life At Sea (SOLAS) and the International Ship and Port Facility Security Code (ISPS) provide further security. and should concern with the following aspects. A ship security plan must outline measures to prevent weapons and other items that could be used to harm passengers and crew from being brought aboard the ship, unless carried by authorized personnel. A ship security plan has to list restricted areas on a ship and how access to those areas will be deterred. How unauthorized ship access will be prevented also must be detailed. The plan should include what response measures will be taken when there is a security breach or threat, including maintaining ship operations. How responses to security commands from government agencies will be handled also must be included, as well as how the ship will be evacuated if necessary. The plan will list security responsibilities of the crew, including auditing security, training for implementation of security measures, reporting security problems and reviewing and updating the plan periodically. The plan must indicate when security equipment is tested, where security system activation locations are and procedures and training regarding the security system. The security plan must designate who the security officer is on the ship. The security officer is responsible for ensuring the ship's security and that the plan is carried out. The security officer also oversees security maintenance and training. A second security officer from the company owning the ship also is mandated, with that person working to develop the plan and having it approved by the company before implementation. The company security officer acts as a liaison with the ship security officer. ISPS or International Ship and Port Facility Security, code implemented a ship security plan and provided preparation for action in the event of a terrorist attack on a ship. The Act requires commercial yachts heavier than 500 GT to be certified. ISPS security training also enacted

mandatory training against piracy attacks and includes both ship and port personnel. Several categories of job types are required to receive training in order to comply with safety requirements. This include the company security officer, the vessel security officer, the head company/vessel/ship security officer, the facility security officer, facility or vessel personnel with specific security duties, port facility security officer and other ship or port facility personnel with specific security duties. A wide variety of specific training subjects prepare personnel to address safety issues. Classes include general maritime security, port awareness, tactical operations, tactical boat operations, safe boarding techniques and procedures, incident response, tactical underwater operations, emergency medical procedures, basic and advanced fire fighting, crowd control, crisis management, advanced sea survival, basic first aid, first aid care at sea, personal survival techniques, personal safety and liability and medical refresher. The MTSA requires SOLAS-certified vessels that are over 300 gross tonnage (GT), to carry an automated identification system. This rule also applies to small passenger vehicles that are certified to carry more than 150 passengers. The original version of the rule also applied to specified commercial vessels on international voyages, as well as certain other commercial vessels, but the government rethought this revision after the vessel operators complained about the costs of installing such systems. Owners of foreign SOLAS vessels do not have to submit security plans to the Saudi Roles for approval. However, under MTSA regulations, non-SOLAS foreign vessels still have to submit security plans accordance Saudi Roles for approval. They may also comply with an alternative security plan, or with measures suggested in another bilateral or multilateral agreement. The Saudi Authority should have to examine and enforces a vessel's compliance with international security regulations and may deny non-compliant vessels entry to Saudi ports. The Saudi Authority maritime security requirements allow some flexibility for non-SOLAS vessels and port facilities to participate in alternative security programs if they wish to. This allows them to tailor security measures to the requirements of their industries. However, all vessels must follow security plans. This paper is intended to serve as a conceptual piece that draws from the interplay between engineering and supply chain approaches to risk in the context of recent maritime security regulations. It is hoped that cross-disciplinary analysis of the perception and impact of the security-risk will stimulate thinking on appropriate tools and analytical frameworks for enhancing port and maritime security. In so doing, it may be possible to develop new approaches to security assessment and management, including such aspects as supply chain security. The framework and methods reviewed in this paper could serve as a roadmap for academics, practitioners and other maritime interests to formulate risk assessment and

management standards and procedures in line with the new security threats. Of particular importance, new relevant approaches can be developed to assess the reliability of the maritime in the context of the complex network theory (Bichou, 2005; Angeloudis et al.,2006; Bell et. al, 2008). Equally, further research can build on this to investigate the mechanisms and implications of security measures on port and shipping operations, Companies, ports and other parties active in today's international supply chains face a large number of regulations and private initiatives prescribing measures to be taken in order to raise the level of supply chain security. These measures range from putting up a fence around the terminal facilities at a seaport, to establishing a certified security programme at the production facility ('point of stuffing') in order to be admitted to the "green lane".

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