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### Abbreviations and Acronyms

AIS	Automatic Identification System
BC Code	Code of Safe Practice for Solid Bulk Cargoes (of IMO)
COSS	Committee on Safe Seas and the Prevention of Pollution from Ships
EC	European Commission
EMSA	European Maritime Safety Agency
EU	European Union
HAZMAT	Hazardous Materials
IBC Code	International Code for the construction and equipment of ships carrying dangerous chemicals in bulk (of IMO)
IGC Code	International Code for the construction and equipment of ships carrying liquefied gases in bulk (of IMO)
ILO	International Labour Organization
IMDG Code	International Maritime Dangerous Goods Code (of IMO)
IMO	International Maritime Organization
INF Code	Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on board Ships (of IMO)
ISM Code	International Safety Management Code (of IMO)
LCA	local Competent Authority
LRIT	Long Range Identification and Tracking
MarNIS	Maritime Navigation Information Services
MARPOL	International Convention for the Prevention of Pollution from Ships (of IMO)
MAS	Maritime Assistance Services
MOS	Maritime Operational Services
MRCC	Maritime Rescue Co-ordination Centre
NCA	National Competent Authority
OOW	Officer of the Watch
OPRC	Oil Pollution Response and Co-operation
SAR	Search and Rescue
SOLAS	Safety of Life at Sea
SSN	SafeSeaNet
VDR	Voyage Data Recorder
VTM	Vessel Traffic Management
VTS	Vessel Traffic Services
XML	eXtensible Markup Language

## 1. Objectives

The package of measures contained in European Directive 2002/59/EC “Establishing a Community vessel traffic monitoring and information system” were instigated as a direct consequence of the loss of the MV Erika in 1999. Amending existing measures such as Hazmat, the Directive introduced more comprehensive measures aimed at the improvement in monitoring of vessel traffic in EU waters and at the same time improving the availability of data, manifesting itself in the SafeSeaNet initiative. The key elements were:

- a. the harmonisation and enhancement of notification of dangerous cargoes (amending Directive 93/75/EEC);
- b. the enforcement of marine traffic measures;
- c. the establishment of European information networks;
- d. Automatic Identification Systems for domestic shipping and the setting up of coastal AIS networks.

The European Parliament has recently approved an amendment to the Directive 2002/59/EC, namely EC Directive 2009/19/EC, reinforcing the use of SafeSeaNet (SSN) as the Community maritime information exchange system.

Whilst this will no doubt further improve maritime safety, there are other considerations that need to be taken with respect the complete set of Directives having an influence on vessel traffic movements in EU waters. A recent study within the MarNIS project identified the following preliminary conclusions with respect reporting requirements contained not only in Directive 2002/59/EC but numerous other maritime related Directives:

- Duplication of reporting requirements within the same Directive as well as between different Directives;
- Use of different terminology to describe stakeholders within the same Directive as well as between different Directives;
- Lack of clarity in stating the purpose or function behind the requirement for information provision;
- Information flows were sometimes “disjointed” in that a receiving stakeholder was not always the same stakeholder as that required to pass the information on.

This study has the objective to describe the measures foreseen in the EU Directive 2002/59/EC, with consideration for the amendments as put forward in Directive 2009/17/EC, as well as provide further details regarding the establishment, harmonisation and enhancement of notifications and information networks as a key element of Directive 2002/59/EC. A further review is being conducted within the SKEMA e-Maritime periodic study looking more closely at the preliminary conclusions of the study as mentioned as well as provide recommendations towards a more transparent and coherent structuring for reporting across all Directives.

Note is made of the related initiatives as detailed in both the 2002/59/EC and 2009/17/EC Directives, providing a description of their purpose and content.

## 2. Target Stakeholders

- Policy makers interested in rationalisation or harmonisation of regulatory requirements and interactions between regulation enforcement authorities
- Maritime Administrations;
- Authorities requiring pre-reporting from shipping;
- SAR, OPRC and MAS services;
- Port Authorities (safety and security related);
- Port Community System operators, Agents.

## 3. Glossary terms

SafeSeaNet (SSN): European community maritime information exchange system designed to guarantee an effective exchange of the information referred to in the Directive 2002/59/EC, whereby member States ensure that the national or local systems set up to gather, process and preserve that information can be interconnected with it.

## 4. Approach

The SafeSeaNet initiative was a direct response to the information network requirements coming from Directive 2002/59/EC however has the potential to serve many different authorities and agencies, such as maritime, fisheries, customs and immigration.

The purpose of this study is to provide an overview of the key elements of Directive 2002/59/EC, and the amendments according Directive 2009/17/EC, and to detail the key areas addressed herein. Other studies are dealing with the potential future developments of the main areas of concern of the Directives however later versions of this study will include more thorough examination to identify potential (future) operational requirements of the national and European Authorities/Agencies and consider how these may be placed within an information network as intended with SafeSeaNet (including derivatives/extensions). These will be derived from requirements obtained within other Directives and initiatives as well as initiatives currently under development, such as the Customs Single Window. This will include an analysis of how these requirements fit into concepts such as Maritime Information Management/National Single Windows.

Whilst reporting is an important element of this Directive, attention will also be paid to the other measures included and these will be assessed for relevance in terms of applicability and scope considering measures foreseen for the years 2012-2020, including not only Maritime Information Management but also Maritime Operational Services and eMaritime.

In order to establish the potential as well as the constraints a detailed review will be conducted of all reported functions (or purposes) as provided in Directive 2002/59/EU (including the amendment 2009/17/EC) and a synergy made with the other Directives (see References). A review will then be made of all related measures and initiatives identified in SKEMA bearing relevance and falling within the scope and meaning of the current Directive and amendment, resulting in a gap analysis indicating where new or amended provisions may be required. This is intended for version 3 of the study however intermediate results will be released as available.

## 5. Key areas addressed

### 5.1. Directive 2002/59/EC

The EU Directive 2002/59/EC establishing a Community vessel traffic monitoring and information system states in Article 1 that the main purpose of this directive is to:

*“... establish in the Community a vessel traffic monitoring and information system with a view to enhancing the safety and efficiency of maritime traffic, improving the response of authorities to incidents, accidents or potentially dangerous situations at sea, including search and rescue operations, and contributing to a better prevention and detection of pollution by ships.”*

Directive 2002/59/EC repealed Council Directive 93/75/EEC.

The main objectives of the Directive may be summarized as [1]:

- Setting up a Community vessel traffic monitoring and information system to enhance the safety and efficiency of maritime traffic;
- To help prevent accidents and pollution at sea and to minimise their impact upon the marine and coastal environment;
- To enhance compliance with vessel traffic services (VTS), mandatory Ship Reporting and Routeing;
- To enhance requirements for ships to carry AIS and VDRs, facilitating safety and traffic monitoring;
- To enhance reporting and monitoring of ships carrying dangerous and polluting cargoes, including electronic exchange of information between Member States, including repeal of regulations implementing Directive 93/75/EEC;
- To provide for cooperation between Member States and the Commission with proper communication links being established between competent authorities and ports of Member States;
- Action to take in dangerous weather conditions;
- Places of refuge.

In addition to detailing the main components of Directive 2002/59/EC and the amendments of Directive 2009/59/EC, this study considers the key areas of:

- Reporting measures
- Monitoring measures
- Other Safety measures

#### 5.1.1. Relevant international instruments

The following international instruments are referred to as relevant to Directive 2002/59/EC:

IMO Conventions:

- International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) and the Protocol thereto;

- International Convention for the Safety of Life at Sea (SOLAS), together with the protocols and amendments thereto;
- International Convention on Tonnage Measurement of Ships, 1969;
- International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and its 1973 Protocol relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil;
- International Convention on Maritime Search and Rescue, 1979 (SAR Convention).

IMO Codes:

- International Safety Management Code (ISM Code);
- International Maritime Dangerous Goods Code (IMDG Code);
- International Code for the construction and equipment of ships carrying dangerous chemicals in bulk (IBC Code);
- International Code for the construction and equipment of ships carrying liquefied gases in bulk (IGC Code);
- Code of Safe Practice for Solid Bulk Cargoes (BC Code);
- Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on board Ships (INF Code).

IMO Resolutions:

- IMO Resolution A.851(20) entitled General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants.

### 5.1.2. Articles

Title I of the Directive on Ship Reporting and Monitoring includes the following Articles:

- Article 4: Notification prior to entry into ports of the Member States
- Article 5: Monitoring of ships entering the area of mandatory ship reporting systems
- Article 6: Use of automatic identification systems
- Article 7: Use of ship's routing systems
- Article 8: Monitoring of the compliance of ships with vessel traffic services
- Article 9: Infrastructure for ship reporting systems, ships' routing systems and vessel traffic services
- Article 10: Voyage data recorder systems
- Article 11: Casualty investigation

Title II of the Directive on Notification of Dangerous or Polluting Goods On Board Ships (HAZMAT) includes the following Articles:

- Article 12: Obligations on the shipper
- Article 13: Notification of dangerous or polluting goods carried on board
- Article 14: Computerised exchange of data between Member States
- Article 15: Exemptions

Title III of the Directive on Monitoring of Hazardous Ships and Intervention in the Event of Incidents and Accidents at Sea includes the following Articles:

- Article 16: Transmission of information concerning certain ships
- Article 17: Reporting of incidents and accidents at sea
- Article 18: Measures in the event of exceptionally bad weather
- Article 19: Measures relating to incidents or accidents at sea
- Article 20: Places of refuge
- Article 21: Information of the parties concerned

The main objectives of the Directive may be summarized as [1]:

- Setting up a Community vessel traffic monitoring and information system to enhance the safety and efficiency of maritime traffic;
- To help prevent accidents and pollution at sea and to minimise their impact upon the marine and coastal environment;
- To enhance compliance with vessel traffic services (VTS), mandatory Ship Reporting and Routing;
- To enhance requirements for ships to carry AIS and VDRs, facilitating safety and traffic monitoring;
- To enhance reporting and monitoring of ships carrying dangerous and polluting cargoes, including electronic exchange of information between Member States, including repeal of regulations implementing Directive 93/75/EEC;
- To provide for cooperation between Member States and the Commission with proper communication links being established between competent authorities and ports of Member States;
- Action to take in dangerous weather conditions;
- Places of refuge.

The amendment to this Directive, as provided in 2009/17/EC, is part of the so-called third maritime package and was brought in to:

- *“incorporate in Directive 2002/59/EC additional measures for better ship safety and environmental protection;*
- *harmonise the implementation of the “places of refuge” plans to ensure they are applied uniformly in the different Member States, which will help in preventing serious pollution. There is a need, in particular, to clarify the rules for applying these principles;*
- *integrate in the Directive the principles defined in the work done by the Member States and the Commission to set up the Community maritime safety information exchange system SafeSeaNet. In particular, the principles have to be established on the one hand for the systematic exchange of maritime safety information at Community level via the SafeSeaNet system and on the other hand for cooperation between the Member States on monitoring and developing the system. All national systems will have to be compatible with SafeSeaNet and any information of Community interest will have to be presented in a harmonised manner;*
- *prepare the Community legal framework for future technological developments, especially the space applications such as ship monitoring beacons, imaging systems or Galileo. This progress has to make it possible to extend surveillance of maritime traffic into European waters and, in particular, provide better coverage of the open sea.”*

## 5.2. Directive 2009/17/EC

The EU Directive 2009/17/EC amending Directive 2002/59/EC establishing a Community vessel traffic monitoring and information system amends a number of articles as well as makes provisions for new ones.

The following extracts from Directive 2009/17/EC provide the main reasoning behind the provision of the amendments:

Coastal authorities should be allowed easier access to the characteristics of the hydrocarbons being carried by sea

Considering the large number of collisions involving fishing vessels that have clearly not been seen by merchant ships or which have not seen the merchant ships around them, extension of that measure to include fishing vessels with a length of more than 15 metres is very much to be desired.

Information from another Member State regarding a ship and dangerous or polluting goods carried by it should be available through SafeSeaNet and should only be requested for reasons of maritime safety or security or the protection of the marine environment. It is therefore essential that the Commission investigate possible network and information security problems.

With respect the requirement that Member States are to adopt special measures in respect of ships posing a potential hazard due to their behaviour or condition it was felt desirable to add to the list of these ships those which do not have satisfactory insurance cover or financial guarantees or which have been reported by pilots or port authorities as having apparent anomalies which may prejudice their safe navigation or create a risk for the environment.

It was deemed necessary to take into account the potential danger to shipping from ice formation in relation to the risks posed by exceptionally bad weather. The authority concerned should be able to take any appropriate steps to ensure the safety of human life at sea and to protect the environment. Member States should also have the possibility of verifying that the necessary documentation on board provides evidence that the ship complies with strength and power requirements commensurate with the ice situation in the area concerned.

There was a need to reflect the provisions of IMO Resolution A.949(23) and refer to ships in need of assistance, rather than to ships in distress and to lay down the basic provisions that plans for accommodating ships in need of assistance should contain in order to ensure a harmonised and effective implementation of this measure and clarify the scope of obligations incumbent on the Member States.

In the interests of increased maritime safety, seafarers should be able to rely on fair treatment in the event of a maritime accident. Their human rights and dignity should be preserved at all times and all safety investigations should be conducted in a fair and expeditious manner. To that end, Member States should, in accordance with their national legislation, further take into account the relevant provisions of the IMO guidelines on the fair treatment of seafarers in the event of a maritime accident.

When a ship is in need of assistance, a decision may have to be taken as regards the accommodation of that ship in a place of refuge. This is particularly important in the event of a situation that could give rise to the loss of a vessel or an environmental or navigational hazard. In such a case, it is necessary to be able to call on an authority in a Member State, depending on the internal structure of that Member State, having the required expertise and the power to take independent decisions as regards the accommodation of a ship in a place of refuge. It is also important that the decision is taken after a preliminary evaluation of the situation on the basis of the information contained in the relevant plan for accommodation of ships in a place of refuge. It is desirable that the competent authorities should be permanent in nature.

Plans for accommodating ships in need of assistance should describe precisely the decision-making chain with regard to alerting and dealing with the situation in question. The authorities concerned and their remits should be clearly described, as should the means of communication between the parties involved. The applicable procedures should ensure that an appropriate decision can be taken quickly on the basis of specific maritime expertise and adequate information available to the competent authority.

Ports which accommodate a ship should be able to rely on prompt compensation in respect of costs and any damage arising from the operation.

When drawing up the plans, Member States should gather information on potential places of refuge on the coast so as to allow the competent authority, in the event of an accident or incident at sea, to identify clearly and quickly the most suitable areas for accommodating ships in need of assistance.

It is important for the list of competent authorities responsible for deciding whether to accommodate a ship in a place of refuge, and the list of authorities responsible for receiving and handling alerts, to be published appropriately. It may also prove useful for the parties involved in a maritime assistance operation, including assistance and towing companies, and the authorities of neighbouring Member States likely to be affected by an emergency at sea, to have access to relevant information.

The absence of financial insurance does not exonerate a Member State from its obligation to perform a preliminary assessment and to decide on the acceptance of the ship in a place of refuge.

The specific function of the vessel traffic monitoring and ship's routing measures is to allow Member States to obtain a true knowledge of the ships using the waters under their jurisdiction and thus enable them to take more effective action against potential risks if necessary. Sharing the information gathered helps to improve its quality and makes it easier to process.

SafeSeaNet, in development since 2002, should now be established as the reference network at Community level. SafeSeaNet should aim at reducing administrative burdens and costs for industry and the Member States. It should also aim at facilitating the uniform implementation, where appropriate, of international reporting and notification rules.

The progress made in the new technologies and in particular in their space applications, such as beacon-based ship monitoring systems, imaging systems or Global Navigation Satellite System (GNSS), now makes it possible to extend traffic monitoring further offshore and thereby to ensure better coverage of European waters, including by Long Range Identification and Tracking (LRIT) systems.

In order to enable cost savings and avoid unnecessary fitting of equipment on board ships sailing in maritime areas within the coverage of AIS fixed-based stations, Member States and the Commission should cooperate to determine the requirements concerning the fitting of equipment for transmitting LRIT information and should submit to the IMO any appropriate measures.

In order to guarantee the best possible harmonised use at Community level of information gathered under Directive 2002/59/EC concerning maritime safety, the Commission should be able, if necessary, to process and use that information and disseminate it to the authorities designated by the Member States.

In this context, the development of the 'Equasis' system has shown how important it is to encourage a 'safe seas' culture, especially in maritime transport operators. The Commission should be able to contribute to the dissemination, particularly via this system, of any information relating to maritime safety.

Regulation (EC) No 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS) ( 1 ) centralises the tasks of the committees set up under the relevant Community legislation on maritime

safety, prevention of pollution from ships and protection of living and working conditions on board. The existing committee should therefore be replaced by the COSS.

### 5.2.1. Relevant international instruments

The following international instruments are added to those stated as relevant in Directive 2002/59/EC:

IMO Resolutions:

- IMO Resolution A.917(22) entitled “Guidelines for the onboard use of AIS”, as amended by IMO Resolution A.956(23);
- IMO Resolution A.949(23) entitled “Guidelines on places of refuge for ships in need of assistance”;
- IMO Resolution A.950(23) entitled “Maritime assistance services (MAS)”;

IMO Guidelines:

- IMO guidelines on the fair treatment of seafarers in the event of a maritime accident as annexed to resolution LEG. 3(91) of the IMO Legal Committee of 27 April 2006 and as approved by the Governing Body of the ILO in its 296th session of 12 to 16 June 2006.’

### 5.2.2. Key Amendments

The key amendments are considered here below:

The use of Automatic Identification Systems (AIS) by fishing vessels are introduced in the new Article 6a whereby any fishing vessel with an overall length of more than 15 metres and flying the flag of a Member State and registered in the Community, or operating in the internal waters or territorial sea of a Member State, or landing its catch in the port of a Member State shall be fitted with an AIS (Class A) which meets the performance standards drawn up by the IMO.

The use of systems for the long-range identification and tracking of ships (LRIT) are introduced in Article 6b for ships to which SOLAS regulation V/19-1 and the performance standards and functional requirements adopted by the IMO apply. This article also introduces the adoption of an LRIT European Data Centre in charge of processing long-range identification and tracking information.

Article 12 has been amended to introduce the requirement for the safety data sheets for the substances referred to in Annex I to the MARPOL as well as the emergency numbers of the shipper or any other person or body in possession of information on the physico-chemical characteristics of the products and on the action to be taken in an emergency.

In addition, vessels coming from a port outside the Community and calling at a port of a Member State which have dangerous or polluting goods on board shall be in possession of a declaration, as provided for by the shipper, containing the information required under this article.

The amended Article 14 explicitly stipulates SafeSeaNet as being the means for exchanging information on the ship and the dangerous or polluting goods on board to the national and local competent authorities of another Member State. It is also stipulated that this may be for “the purpose of maritime safety or security or the protection of the maritime environment”.

The amended Article 15 provides exemption from both Article 4 (Notification prior to entry into ports of the Member States) and Article 13 (Notification of dangerous or polluting goods carried on board) reporting in the case of scheduled services between ports of a member State. The inclusion of Article

4 is new. Also added is the requirement for any deviations from the estimated time of arrival at the port of destination or pilot station of three hours or more to be notified to the port of arrival or to the competent authority in accordance with Article 4 or Article 13, as appropriate. Exemptions are only granted to individual vessels as regards a specific service.

Clarification is provided on the term “scheduled service”, this being a service to be operated for at least one month. Exemptions from the requirements of Articles 4 and 13 shall be limited to voyages of a scheduled duration of up to 12 hours.

Under the amended Article 16 ships which have failed to notify, or do not have, insurance certificates or financial guarantees pursuant to any Community legislation and international rules as well as ships which have been reported by pilots or port authorities as having apparent anomalies which may prejudice their safe navigation or create a risk for the environment have been added to the list of ships considered to be ships posing a potential hazard to shipping or a threat to maritime safety, the safety of individuals or the environment.

The new Article 18a introduces measures in the event of risks posed by the presence of ice. In the event that a competent Authority considers that ice conditions may pose a serious threat to the safety of human life at sea or to the protection of their shipping areas or coastal zones, or of the shipping areas or coastal zones of other States. The competent Authorities are to supply relevant information on ice conditions to ships, as well as request a ship to document that it satisfies the strength and power requirements before entering or leaving a port or anchorage.

The amended Article 20 expands on the Places of Refuge to include the designation of a Competent authority for the accommodation of ships in need of assistance, plans for the accommodation of ships in need of assistance (Article 20a), the decision on the accommodation of ships (Article 20b), matters concerning financial security and compensation (Article 20c) and requirement of the Commission to examine existing mechanisms within Member States for the compensation of potential economic loss suffered by a port or a body (Article 20d).

With respect to the existing Article 22 of 2002/59/EC on the designation and publication of a list of competent bodies a new Article 22a requires that member States establish maritime information management systems, at national or local level, to process the information referred to in this Directive. These systems shall allow the information gathered to be used operationally and shall satisfy, in particular, the conditions laid down in Article 14. Further, to guarantee an effective exchange of the information referred to in this Directive, Member States shall ensure that national or local systems set up to gather, process and preserve that information can be interconnected with SafeSeaNet. The Commission shall ensure that SafeSeaNet is operational on a 24 hour-a-day basis. The description and principles of SafeSeaNet have been laid down in Annex III to 2009/17/EC.

The amended Article 23 recognises the requirement for extending the cover of the Community vessel traffic monitoring and information system, and/or updating it, with a view to enhanced identification and monitoring of ships, taking into account developments in information and communication technologies. Emphasis is also placed on ensuring the interconnection and interoperability of the national systems used for managing the information referred to in Annex I of the Directive, and developing and updating SafeSeaNet.

The new Article 23a provides for the processing and management of maritime safety information whereby the Commission shall ensure, where necessary, the processing, use and dissemination to the authorities designated by the Member States, of the information gathered under this Directive. Where appropriate, the Commission shall contribute to the development and operation of systems for

collecting and disseminating data relating to maritime safety, in particular through the “Equasis” system or any other equivalent public system.

According to the new Article 24, and in accordance with the confidentiality of information, the Commission has undertaken to investigate possible network and information security problems and propose appropriate amendments to Annex III of the Directive for improving the security of the network.

A new Annex III sets out the requirements with respect to electronic messages and SafeSeaNet. This includes the management, operation, development and maintenance of SafeSeaNet for both National SSN systems and the general SSN system, as well as provisions for the exchange of data through SSN and security and access rights.

### 5.3. Reporting Measures

#### 5.3.1. SafeSeaNet

With a key element of the Directive being the establishment, harmonisation and enhancement of notifications and information networks, the EU member States and the Commission were obliged to co-operate to establish data exchange systems and to develop the necessary infrastructure. This resulted in the establishment of the SafeSeaNet (SSN) system.

Recognising the work done in setting up the SafeSeaNet system, the amendment to Directive 2002/59/EC, namely Directive 2009/17/EC, contains a new article explicitly referring to the use of this system for the exchange of information:

*“Article 22a*  
**SafeSeaNet**

1. Member States shall establish maritime information management systems, at national or local level, to process the information referred to in this Directive.
2. The systems set up pursuant to paragraph 1 shall allow the information gathered to be used operationally and shall satisfy, in particular, the conditions laid down in Article 14.
3. To guarantee an effective exchange of the information referred to in this Directive, Member States shall ensure that the national or local systems set up to gather, process and preserve that information can be interconnected with SafeSeaNet. The Commission shall ensure that SafeSeaNet is operational on a 24 hour-a-day basis. The description and principles of SafeSeaNet are laid down in Annex III.”

The SafeSeaNet initiative being a direct response to the information network requirements coming from Directive 2002/59/EC has, however, the potential to serve many different authorities and agencies, such as maritime, fisheries, customs and immigration. It has been shown in studies that reporting requirements are not unique to the Directive 2002/59/EC and in a number of cases similar initiatives have been developed to handle the flow of information.

The SafeSeaNet System relies on a distributed architecture made of 3 levels:

- Local Competent Authorities (LCA)
- National Competent Authorities (NCA)
- The central index

The core of the SafeSeaNet architecture consists of the SafeSeaNet XML Messaging System. It acts as a secure and reliable “yellow pages” type index system and as a “hub and spoke” system for data transfer between data providers and data requesters (including requests, notifications, responses, authentication, validation, data transformation, logging...).

The system is a network/Internet solution based on the concept of a distributed database. Once fed into the SafeSeaNet system, data does not have to be transferred, copied or duplicated.

The SafeSeaNet system keeps track of the data location, through a so-called Central Index which stores pointers (references) to the actual data location. Access is provided to the authorized persons via well-defined messages. Whenever access to the data is needed by one of the participants, this data can be requested through a well-defined message, and the SafeSeaNet system will locate it. The system will then retrieve the data from wherever it is stored and present it to the requester, again in a well-defined message.

In most of the Members States, the Maritime Administration (National Competent Authority) has this function, for example, whilst in the Netherlands, each port (Local Competent Authority) is responsible for transmitting this information to the index data base. SafeSeaNet (SSN) is managed by EMSA (European Maritime Safety Agency), which has been assigned this task by the European Commission. Those who are entitled to receive information from SafeSeaNet are national maritime administrations, the European Commission/EMSA, port authorities, coast guards, VTS, MRCC, pollution survey centres and the Port State Control.

Directive 2002/59/EC specifies the information that is to be included with the advance notification messages and the dangerous goods notification (Hazmat). Directive 2000/59/EC specifies the information concerning wastes generated by a vessel.

Name of the message	Description of messages
Port Notification	Notifies SSN that a vessel is bound for a particular port/anchorage area, the estimated time of arrival(ETA) and total numbers of persons on board.
Ship Notification	Notifies SSN about a vessel's voyage and cargo by AIS or MRS (manual reported into SSN system).
Hazmat Notification	Notifies SSN that a vessel carries dangerous goods and that the sender of a notification has information about these dangerous goods.
Alert Notification	Notifies SSN that the sender of notification has information about specific incidents like situation report <sup>1</sup> , pollution report <sup>2</sup> , waste report <sup>3</sup> , lost/found containers <sup>4</sup> . This messages sends by MRCC and the Coast Guard into the SafeSeaNet system.
Security Notification	Notifies SSN that the sender of notification has security information about a vessel.

*Fig. Short description of the messages in the SafeSeaNet.*

According the SafeSeaNet Monthly report for November 2008 the status of implementation per SSN country is as follows:

COUNTRY	Notifications				Date Projected for Tests or Production
	Port	Hazmat	Ship	Alert	
AT Austria	no	no	no	no	Pending the creation of the NCA profile
BE Belgium	yes	yes	yes	yes	
BU Bulgaria (*)	yes (*)	yes (*)	no	no	Test: Beginning 2009
CZ Czech Republic	yes (*)	yes (*)	yes (*)	yes (*)	Created NCA. Able to request data through the Web
CY Cyprus	yes	yes	yes	ready	
DK Denmark	yes	yes	yes	ready	
EE Estonia	no	no	yes	no	
FI Finland	yes	yes	yes	yes	
FR France	yes	yes	yes	yes	
DE Germany	yes	yes	yes	no	
GR Greece	yes	yes	yes	no	
HU Hungary	no	no	no	no	Pending the creation of the NCA profile
IC Iceland	yes	yes	yes	yes	
IE Ireland	yes	yes	yes	yes	
IT Italy	yes	yes	yes	yes	
LV Latvia	yes	yes	yes	yes	
LT Lithuania	yes	yes	yes	no	
LX Luxembourg	no	no	no	no	Pending the creation of the NCA profile
MT Malta	yes	yes	yes	yes (*)	
NL Netherlands	yes	yes	yes	yes (*)	
NO Norway	yes	yes	yes	ready	
PL Poland	yes	yes	yes	yes(*)	
PT Portugal	yes	yes	no	no	Production: Beginning 2009 for Alert and Ship notifications
RO Romania	yes	yes	yes	yes	
SL Slovak Republic	yes (*)	yes (*)	yes (*)	yes (*)	Created NCA. Able to request data through the Web
SI Slovenia	yes	yes	yes	yes (*)	
ES Spain	yes	yes	yes	ready	
SE Sweden	yes	yes	yes	no	
GB United Kingdom	yes	yes	yes	yes	

Updated: March 2009

(\*) Countries participating using the Web interface

Yes	Participating, sending notifications
Ready	Passed the "commissioning" tests that certify national compliance with SSN but not yet using the system
No	No connection to SSN

### 5.3.2. Reporting Requirements

Aside from international requirements arising from Conventions and Recommendations of the International Maritime Organisations (IMO), there are a number of EU Directives obliging member States to implement certain reporting requirements into national law. Whilst the EU Directives do not contradict international conventions, indeed they often merely act to ensure a more expeditious and uniform implementation, it has been found that there are contradictions or uncertainties when comparing the reporting requirements of the various maritime Directives, especially if SafeSeaNet were to be considered the preferred way forward for all maritime related reporting and information exchange in the future.

Following is an overview of all reporting requirements as contained within Directive 2002/59/EC:

Article/para – Directive 2002/59/EC	Report from	Report to	Information
Art. 4 Notification prior to entry into ports of the MS's,	Operator or Agent or Master	Port Authority	24 hour notification
Art. 5 Monitoring of ships entering the area of mandatory ship reporting systems	Master	Competent Authority	Report entering mandatory reporting system

Article/para – Directive 2002/59/EC	Report from	Report to	Information
Art. 7 ship reporting and monitoring	Member State	Master	Routing requirements not adopted by IMO
Art 8(c) ship reporting and monitoring	Member state	Flag state	Nature of breach of VTS rules
Art. 10 ship reporting and monitoring	Master	Member State	VDR info
Art. 12 Notification of dangerous or polluting goods	Shipper	Master or Operator	Art 12 dangerous/polluting goods declaration
Art. 13 Notification of dangerous or polluting goods	Operator or Agent or Master	Competent Authority or if delegated then Port Authority of departure or destination	Art 13 dangerous/polluting goods notification
Art 13	Company	Competent authority	Operating scheduled ships list
Art. 15 Notification of dangerous or polluting goods	Member State	Commission	Exempt companies and ships list
Art. 16 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State Coastal Station	Other Member State Coastal Station	Art.16 information certain ships
Art. 16 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State	Port Authority or other designated Authority	Art.16 information certain ships
Art. 16 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State	Other Member States	Action taken on art.16 information certain ships
Art. 17(1) Monitoring of hazardous ships and intervention in the event of incidents and accidents	Master	Member State Coastal Station	Incident or accident report
Art. 18 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State	Master	Adverse meteo/hydro and potential danger report
Art. 18 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Master	Company	Adverse meteo/hydro and potential danger recommendations

Article/para – Directive 2002/59/EC	Report from	Report to	Information
Art. 19 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Master	Company	Master_company ISM incident or accident report
Art. 19 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Company	Competent Coastal Station	Company contact info
Art. 20 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State	??? Unspecified	Ships in distress plan
Art. 21(1) Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State Coastal Station	Unspecified	Incident broadcast other ships
Art. 21 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Competent Authority	Competent Authority other MS	Safety information request response
Art. 21 Monitoring of hazardous ships and intervention in the event of incidents and accidents	Member State	Other Member State	Request for consultation on hazard other MS
Art. 22 (2) Accompanying Measures	Member State	Shipping Industry	Designated authorities and stations, including areas and procedures
Art. 22 (3) Accompanying Measures	Member State	Commission	Designated authorities and stations or update
Art. 25(3) Accompanying Measures	Member State	Flag State and other	Measures taken in respect of vessels not flying flag of the actual MS
Art.25 Accompanying Measures	Member State	ISM issuing State	Non-conformity company at disposal of coastal station (art.19)

The amendment 2009/17/EC replaces/adds:

Article/para – Directive 2009/17/EC	Report from	Report to	Information
Art. 12 Replacing Directive 2002/59 Art. 12	Shipper	Master or Operator	Art12 Dangerous/polluting goods declaration

Article/para – Directive 2009/17/EC	Report from	Report to	Information
Art. 18a Addition to Directive 2002/59 Art. 18	Competent Authority	Master	Ice related info
Art. 19(2) Addition to Directive 2002/59 Art. 19(2)	Operator or Master or Owner of DG or polluting goods carried on board	Competent National Authority	
Art. 20a Addition to Directive 2002/59 Art. 20	Member State	Parties involved	
Art. 20a	Member State	Commission	Inventory potential places of refuge
Art. 20a	Member State	Neighbour Member States	

In the tables above the terms used in the “report from” and “report to” columns are those terms used in the Directive itself. The “information” column contains merely a description of the type of information required.

A similar review has been conducted of a number of other Directives, including but not limited to:

- Directive 2003/25: Stability requirements for ro-ro passenger ships, also including 2002/84, 2003/57 and 2005/12/EC;
- Directive 98/18/EC: Safety rules on passenger ships;
- Directive 1999/35: Safe operation of regular ro-ro ferry and high-speed passenger craft;
- Directive 2000/59: Port reception facilities;
- Port state control directive - under development including com 2005/588.

From a further analysis including the mapping of the information flows between the various stakeholders a number of issues became apparent with respect reporting requirements according not only Directive 2002/59/EC but also within and between other Directives. These included:

- Multiple reporting requirements for what is intrinsically the same data/information;
- Inconsistency in terminology used, for both stakeholders and data elements, in particular between different Directives. This was most prevalent when considering “competent” authorities;
- In most cases failure to state the functionalities (or purpose) behind the information requirements;
- Inconsistency between Directives in the level of detailing with respect how information is to be exchanged and managed;
- Omission of function or purpose for the reporting requirements;
- Instances where no stakeholder was designated as receiver of an information reporting requirement, i.e. it was not stated to whom a particular report should be sent, just that it should be sent.

Whilst it can be seen that there are inconsistencies between Directives what is more alarming are the apparent inconsistencies in the Directive 2002/59/EC itself which have no doubt played their part in the varied implementation success within the EU.

The e-Maritime periodic study concerning data elements should pay more attention to the functionalities behind the reporting requirements which will in turn assist in better defining the potential for more synergy between the different Directives as well as form more added value for SafeSeaNet itself.

#### 5.4. Monitoring Measures

Directive 2002/59/EC (Article 5) calls on all member States (coastal States) to monitor ships entering the area of mandatory ship reporting systems, taking all necessary and appropriate measures to ensure that all ships entering the area of a mandatory ship reporting system, adopted by the IMO according to Regulation 11 Chapter V of the SOLAS Convention, comply with that system in reporting the information required without prejudice to additional information required by a Member State in accordance with IMO Resolution A.851(20).

Further, Article 7 states that Member States shall monitor and take all necessary and appropriate measures to ensure that all ships entering the area of a mandatory ships' routing system adopted by the IMO according to Regulation 10 Chapter V of the SOLAS Convention use the system in accordance with the relevant guidelines and criteria developed by the IMO.

In the past the meaning of the word “monitor” has been a major discussion point in the implementation of the Directive, partly due to the fact that the Directive does not explicitly specify how a member State should monitor these ships. Provision is made for the infrastructure (Article 9) in which reference is made to the coastal AIS networks, or “appropriate equipment and shore-based installations for receiving and utilising the AIS information taking into account a necessary range for transmission of the reports”, that have been established along the European coast as a direct consequence to this Directive. The amendment, 2009/17/EC, has provided a potential expansion to this in two ways:

- Through the introduction of the mandatory carriage requirement of AIS for fishing vessels greater than 15m length;
- Through including the establishment of the European LRIT data base (Article 6b), which may provide further opportunities for coastal States to monitor vessels outside of AIS range, although this use has not been incorporated.

Article 8 calls for the monitoring of the compliance of ships with vessel traffic services in which member States shall monitor and take all necessary measures to ensure that ships entering a VTS area participate in, and comply with, the rules of that VTS. The directive notes that the VTS should be based on the IMO Guidelines on VTS (Resolution A.857(20)). The member State is also to ensure compliance of a VTS outside of the territorial sea by member State flagged ships, or of ships entering an EU port. In the case of a ship from a non-member State not complying with a VTS outside of the territorial sea of a member State, the member State should notify the flag State. Although not mentioned, the same is true for a VTS within the territorial sea.

The essence of the Directive still places the onus on the member States to monitor ships for compliance with existing routing measures and VTS. There is little or no provision for enhanced monitoring of certain vessels that may be deemed to pose a higher risk. Discussions on this matter are included in the SKEMA consolidation study SE3.1.1 on Maritime Operational Services (MOS).

## 5.5. Other Measures

The Directive focuses on the setting up of a community-wide maritime information system in SafeSeaNet and the requirement of member States to secure means for monitoring vessels in coastal waters by means of creating a network of AIS base stations.

However, the Directive also focuses on the establishment of common practice in the setting up of Places of Refuge and providing appropriate measures towards vessels in need of assistance. Whilst these measures are foreseen in IMO resolutions the EC recognised that the non-availability of a place of refuge may have serious consequences in the event of an accident at sea.

Member States were required to draw up plans (Article 20) whereby ships in distress may, if the situation so requires, be given refuge in their ports or any other sheltered area in the best conditions possible. Where necessary and feasible, these plans were to include the provision of adequate means and facilities for assistance, salvage and pollution response. Article 20 as amended (2009/17/59) recognised IMO Resolution A.949(23) and the need to expand on the term “in need of distress” to “in need of assistance”. This is an important distinction that is not now reliant purely on the threat to human life.

## 5.6. Related Initiatives

Following is a brief outline of the IMO initiatives as referred to in Directive 2002/59/EC and the amendment 2009/17/EC (source: [www.imo.org](http://www.imo.org)):

### 5.6.1. IMO Conventions

#### 5.6.1.1. MARPOL

The International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years.

The International Convention for the Prevention of Pollution from Ships (MARPOL) was adopted on 2 November 1973 at IMO and covered pollution by oil, chemicals, harmful substances in packaged form, sewage and garbage. The Protocol of 1978 relating to the 1973 International Convention for the Prevention of Pollution from Ships (1978 MARPOL Protocol) was adopted at a Conference on Tanker Safety and Pollution Prevention in February 1978 held in response to a spate of tanker accidents in 1976-1977. (Measures relating to tanker design and operation were also incorporated into a Protocol of 1978 relating to the 1974 Convention on the Safety of Life at Sea, 1974).

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes:

- Annex I Regulations for the Prevention of Pollution by Oil
- Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk
- Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form
- Annex IV Prevention of Pollution by Sewage from Ships
- Annex V Prevention of Pollution by Garbage from Ships
- Annex VI Prevention of Air Pollution from Ships (entry into force 19 May 2005)

States Parties must accept Annexes I and II, but the other Annexes are voluntary.

### 5.6.1.2. SOLAS

The International Convention for the Safety of Life at Sea (SOLAS) in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships. The first version was adopted in 1914, in response to the Titanic disaster, the second in 1929, the third in 1948, and the fourth in 1960.

The 1960 Convention - which was adopted on 17 June 1960 and entered into force on 26 May 1965 - was the first major task for IMO after the Organization's creation and it represented a considerable step forward in modernizing regulations and in keeping pace with technical developments in the shipping industry.

The intention was to keep the Convention up to date by periodic amendments but in practice the amendments procedure proved to be very slow. It became clear that it would be impossible to secure the entry into force of amendments within a reasonable period of time.

As a result, a completely new Convention was adopted in 1974 which included not only the amendments agreed up until that date but a new amendment procedure - the tacit acceptance procedure - designed to ensure that changes could be made within a specified (and acceptably short) period of time.

Instead of requiring that an amendment shall enter into force after being accepted by, for example, two thirds of the Parties, the tacit acceptance procedure provides that an amendment shall enter into force on a specified date unless, before that date, objections to the amendment are received from an agreed number of Parties.

As a result the 1974 Convention has been updated and amended on numerous occasions. The Convention in force today is sometimes referred to as SOLAS, 1974, as amended.

### 5.6.1.3. Tonnage Convention

The International Convention on Tonnage Measurement of Ships, adopted by IMO in 1969, was the first successful attempt to introduce a universal tonnage measurement system.

Previously, various systems were used to calculate the tonnage of merchant ships. Although all went back to the method devised by George Moorsom of the British Board of Trade in 1854, there were considerable differences between them and it was recognized that there was a great need for one single international system.

The Convention provides for gross and net tonnages, both of which are calculated independently.

The rules apply to all ships built on or after 18 July 1982 - the date of entry into force - while ships built before that date were allowed to retain their existing tonnage for 12 years after entry into force, or until 18 July 1994.

This phase-in period was intended to ensure that ships were given reasonable economic safeguards, since port and other dues are charged according to ship tonnage. At the same time, and as far as possible, the Convention was drafted to ensure that gross and net tonnages calculated under the new system did not differ too greatly from those calculated under previous methods.

### 5.6.1.4. Intervention Convention

The International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and its 1973 Protocol relating to Intervention on the High Seas in Cases of Pollution

by Substances other than Oil affirms the right of a coastal State to take such measures on the high seas as may be necessary to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or the threat thereof, following upon a maritime casualty.

The coastal State is, however, empowered to take only such action as is necessary, and after due consultations with appropriate interests including, in particular, the flag State or States of the ship or ships involved, the owners of the ships or cargoes in question and, where circumstances permit, independent experts appointed for this purpose.

A coastal State which takes measures beyond those permitted under the Convention is liable to pay compensation for any damage caused by such measures. Provision is made for the settlement of disputes arising in connection with the application of the Convention.

The Convention applies to all seagoing vessels except warships or other vessels owned or operated by a State and used on Government non-commercial service

The Protocol of 1973 entered into force in 1983 and recognised the need to extend the Convention to cover substances other than oil, especially in view of the increasing quantity of other substances, mainly chemical, carried by ships, some of which would, if released, cause serious hazard to the marine environment.

#### **5.6.1.5. SAR Convention**

The International Convention on Maritime Search and Rescue 1979 was aimed at developing an international SAR plan, so that, no matter where an accident occurs, the rescue of persons in distress at sea will be co-ordinated by a SAR organization and, when necessary, by co-operation between neighbouring SAR organizations.

Although the obligation of ships to go to the assistance of vessels in distress was enshrined both in tradition and in international treaties (such as the International Convention for the Safety of Life at Sea (SOLAS), 1974), there was, until the adoption of the SAR Convention, no international system covering search and rescue operations. In some areas there was a well-established organization able to provide assistance promptly and efficiently, in others there was nothing at all.

The technical requirements of the SAR Convention are contained in an Annex, which was divided into five Chapters. Parties to the Convention are required to ensure that arrangements are made for the provision of adequate SAR services in their coastal waters.

Parties are encouraged to enter into SAR agreements with neighbouring States involving the establishment of SAR regions, the pooling of facilities, establishment of common procedures, training and liaison visits. The Convention states that Parties should take measures to expedite entry into its territorial waters of rescue units from other Parties.

The Convention then goes on to establish preparatory measures which should be taken, including the establishment of rescue co-ordination centres and subcentres. It outlines operating procedures to be followed in the event of emergencies or alerts and during SAR operations. This includes the designation of an on-scene commander and his duties.

Parties to the Convention are required to establish ship reporting systems, under which ships report their position to a coast radio station. This enables the interval between the loss of contact with a vessel and the initiation of search operations to be reduced. It also helps to permit the rapid

determination of vessels which may be called upon to provide assistance including medical help when required.

## **5.6.2. IMO Codes**

### **5.6.2.1. ISM Code**

The International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code) was adopted in 1993 following experiences with the Guidelines on Management for the Safe Operation of Ships and for Pollution Prevention (IMO Resolution A.647(16)).

The purpose of these Guidelines was to provide those responsible for the operation of ships with a framework for the proper development, implementation and assessment of safety and pollution prevention management in accordance with good practice.

The objective was to ensure safety, to prevent human injury or loss of life, and to avoid damage to the environment, in particular, the marine environment, and to property. The Guidelines were based on general principles and objectives so as to promote evolution of sound management and operating practices within the industry as a whole.

The Guidelines recognised the importance of the existing international instruments as the most important means of preventing maritime casualties and pollution of the sea and included sections on management and the importance of a safety and environmental policy.

The Code establishes safety-management objectives and requires a safety management system (SMS) to be established by "the Company", which is defined as the shipowner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship.

The Company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support.

Every company is expected "to designate a person or persons ashore having direct access to the highest level of management".

The procedures required by the Code should be documented and compiled in a Safety Management Manual, a copy of which should be kept on board.

### **5.6.2.2. IMDG Code**

The development of the International Maritime Dangerous Goods Code (IMDG Code) dates back to the 1960 Safety of Life at Sea Conference, which recommended that Governments should adopt a uniform international code for the transport of dangerous goods by sea to supplement the regulations contained in the 1960 International Convention for the Safety of Life at Sea (SOLAS). A resolution adopted by the 1960 Conference said the proposed code should cover such matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances.

A working group of IMO's Maritime Safety Committee began preparing the Code in 1961, in close co-operation with the United Nations Committee of Experts on the Transport of Dangerous Goods, which in a 1956 report had established minimum requirements for the transport of dangerous goods by all modes of transport.

Since its adoption by the fourth IMO Assembly in 1965, the IMDG Code has undergone many changes, both in appearance and content to keep pace with the ever-changing needs of industry.

Amendments which do not affect the principles upon which the Code is based may be adopted by the MSC, allowing IMO to respond to transport developments in reasonable time.

Amendments to the IMDG Code originate from two sources; proposals submitted directly to IMO by Member States and amendments required to take account of changes to the United Nations Recommendations on the Transport of Dangerous Goods which sets the basic requirements for all the transport modes.

Amendments to the provisions of the United Nations Recommendations are made on a two-yearly cycle and approximately two years after their adoption, they are adopted by the authorities responsible for regulating the various transport modes. In that way a basic set of requirements applicable to all modes of transport is established and implemented, thus ensuring that difficulties are not encountered at inter-modal interfaces.

#### **5.6.2.3. IBC Code**

Carriage of chemicals in bulk is covered by regulations in SOLAS Chapter VII - Carriage of dangerous goods and MARPOL Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk.

Both Conventions require chemical tankers built after 1 July 1986 to comply with the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code).

The IBC Code provides an international standard for the safe carriage by sea of dangerous and noxious liquid chemicals in bulk. To minimize the risks to ships, their crews and the environment, the Code prescribes the design and construction standards of ships and the equipment they should carry, with due regard to the nature of the products involved. In December 1985, by resolution MEPC.19(22), the Code was extended to cover marine pollution aspects and applies to ships built after 1 July 1986.

In October 2004, IMO adopted revised MARPOL Annex II Regulations for the control of pollution by noxious liquid substances in bulk. This incorporates a four-category categorization system for noxious and liquid substances and it entered into force on 1 January 2007.

Consequential amendments to the International Bulk Chemical Code (IBC Code) were also adopted in October 2004, reflecting the changes to MARPOL Annex II. The amendments incorporate revisions to the categorization of certain products relating to their properties as potential marine pollutants as well as revisions to ship type and carriage requirements following their evaluation by the Evaluation of Hazardous Substances Working Group.

Ships constructed after 1986 carrying substances identified in chapter 17 of the IBC Code must follow the requirements for design, construction, equipment and operation of ships contained in the Code.

#### **5.6.2.4. IGC Code**

The International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) applies to gas carriers constructed on or after 1 July 1986. Gas carriers constructed before that date should comply with the requirements of the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk or the Code for Existing Ships Carrying Liquefied Gases in Bulk.

The purposes of these codes is to provide an international standard for the safe transport by sea in bulk of liquefied gases and certain other substances, by prescribing the design and construction standards of ships involved in such transport and the equipment they should carry so as to minimize the risk to the ship, its crew and to the environment, having regard to the nature of the products involved.

The basic philosophy is one of ship types related to the hazards of the products covered by these codes, each of which may have one or more hazard properties. A further possible hazard may arise owing to the products being transported under cryogenic (refrigerated) or pressure conditions.

Severe collisions or strandings could lead to cargo tank damage and uncontrolled release of the product. Such release could result in evaporation and dispersion of the product and, in some cases, could cause brittle fracture of the ship's hull. The requirements in the codes are intended to minimize these risks as far as is practicable, based upon present knowledge and technology.

The IGC Code is kept under review, taking into account experience and technological development. The layout of this code is in line with the International Code for the Construction of Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code).

#### **5.6.2.5. BC Code**

The international Code of Safe Practice for Solid Bulk Cargoes (BC Code) was first adopted in 1965 and has been updated at regular intervals since then. It is kept under continuous review by the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers. The practices contained in the Code are intended as recommendations to Governments, ship operators and shipmasters. Its aim is to bring to the attention of those concerned an internationally-accepted method of dealing with the hazards to safety which may be encountered when carrying cargo in bulk.

The Code highlights the dangers associated with the shipment of certain types of bulk cargoes; gives guidance on various procedures which should be adopted; lists typical products which are shipped in bulk; gives advice on their properties and how they should be handled; and describes various test procedures which should be employed to determine the characteristic cargo properties. The Code contains a number of general precautions and says it is of fundamental importance that bulk cargoes be properly distributed throughout the ship so that the structure is not overstressed and the ship has an adequate standard of stability. A revised version of the Code was adopted in 2004 as Resolution MSC.193(79) Code of safe practice for solid bulk cargoes, 2004.

The DSC Sub-Committee is currently developing the BC Code as a mandatory text and has drafted amendments to SOLAS chapters VI and VII to make the Code mandatory. The proposed timetable would see the mandatory BC Code and SOLAS amendments adopted in 2008, with entry into force in 2011.

#### **5.6.2.6. INF Code**

The International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code) became mandatory on 1 January 2001 by amendments adopted to chapter VII of SOLAS (Carriage of dangerous goods).

The INF Code sets out how the material covered by the Code should be carried, including specifications for ships and applies to all ships regardless of the date of construction and size, including cargo ships of less than 500 gross tonnage, engaged in the carriage of INF cargo.

The INF Code does not apply to warships, naval auxiliary or other ships used only on government non-commercial service, although Administrations are expected to ensure such ships are in compliance with the Code.

Specific regulations in the Code cover a number of issues, including: damage stability, fire protection, temperature control of cargo spaces, structural consideration, cargo securing arrangements, electrical supplies, radiological protection equipment and management, training and shipboard emergency plans.

### **5.6.3. IMO Assembly Resolutions**

#### **5.6.3.1. IMO Resolution A.851(20)**

IMO Resolution A.851(20) entitled General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants.

The resolution sets out the general principles for ship reporting systems and reporting requirements used to provide, gather or exchange information through radio reports. The information is used to provide data for many purposes including search and rescue, vessel traffic services, weather forecasting and prevention of marine pollution. The resolution also provides for Guidelines for reporting incidents involving dangerous goods and Guidelines for reporting incidents involving harmful substances and/or marine pollutants.

#### **5.6.3.2. IMO Resolution A.917(22)**

IMO Resolution A.917(22) entitled “Guidelines for the onboard use of AIS”, as amended by IMO Resolution A.956(23), states that AIS is intended to enhance: safety of life at sea; the safety and efficiency of navigation; and the protection of the marine environment. SOLAS regulation V/19 requires that AIS exchange data ship-to-ship and with shore-based facilities. Therefore, the purpose of AIS is to help identify vessels; assist in target tracking; simplify information exchange (e.g. reduce verbal mandatory ship reporting); and provide additional information to assist situation awareness. In general, data received via AIS will improve the quality of the information available to the OOW, whether at a shore surveillance station or on board a ship. AIS should become a useful source of supplementary information to that derived from navigational systems (including radar) and therefore an important ‘tool’ in enhancing situation awareness of traffic confronting users.

The IMO resolution details the data content, use of Short safety-related messages and the operational use on-board. Further the resolution provides for additional and possible future applications as well as the use of AIS with respect to mandatory reporting systems and in SAR operations. Further the resolution provides for a technical description of AIS.

#### **5.6.3.3. IMO Resolution A.949(23)**

Resolution A.949(23) Guidelines on places of refuge for ships in need of assistance are intended for use when a ship is in need of assistance but the safety of life is not involved. Where the safety of life is involved, the provisions of the SAR Convention should continue to be followed.

The guidelines recognize that, when a ship has suffered an incident, the best way of preventing damage or pollution from its progressive deterioration is to transfer its cargo and bunkers, and to repair the casualty. Such an operation is best carried out in a place of refuge. However, to bring such a ship into a place of refuge near a coast may endanger the coastal State, both economically and from

the environmental point of view, and local authorities and populations may strongly object to the operation.

Therefore, granting access to a place of refuge could involve a political decision which can only be taken on a case-by-case basis. In so doing, consideration would need to be given to balancing the interests of the affected ship with those of the environment.

#### **5.6.3.4. IMO Resolution A.950(23)**

IMO Resolution A.950(23) entitled “Maritime assistance services (MAS) recommends that all coastal States should establish a Maritime Assistance Service (MAS). The principal purposes would be to receive the various reports, consultations and notifications required in a number of IMO instruments; monitoring a ship's situation if such a report indicates that an incident may give rise to a situation whereby the ship may be in need of assistance; serving as the point of contact if the ship's situation is not a distress situation but nevertheless requires exchanges of information between the ship and the coastal State, and for serving as the point of contact between those involved in a marine salvage operation undertaken by private facilities if the coastal State considers that it should monitor all phases of the operation.

#### **5.6.4. IMO Guidelines**

##### **5.6.4.1. IMO guidelines on the fair treatment of seafarers**

Guidelines on the fair treatment of seafarers in the event of a maritime accident were adopted by the IMO's Legal Committee in 2006. The Guidelines, developed by a Joint IMO/ILO Ad Hoc Expert Working Group on the Fair Treatment of Seafarers in the Event of a Maritime Accident, were also adopted by the ILO Governing Body.

The Guidelines recommend that they be observed in all instances where seafarers may be detained by public authorities in the event of a maritime accident.

Seafarers are recognized as a special category of worker, the guidelines state. Given the global nature of the shipping industry and the different jurisdictions with which they may be brought into contact, they need special protection, especially in relation to contact with public authorities. The objective of the Guidelines is to ensure that seafarers are treated fairly following a maritime accident and during any investigation and detention by public authorities and that detention is for no longer than necessary.

The Guidelines give advice on steps to be taken by all those who may be involved following an incident: the port or coastal State, flag State, the seafarer's State, the shipowner and seafarers themselves. The emphasis is on co-operation and communication between those involved and in ensuring that no discriminatory or retaliatory measures are taken against seafarers because of their participation in investigations. The Guidelines say that all necessary measures should be taken to ensure the fair treatment of seafarers.

#### **5.7. Related works in SKEMA**

It should be noted that further work is being conducted as part of the e-Maritime periodic study and SE3.1.2 (Maritime Information Management) of SKEMA to include the identification of potential (future) operational requirements of the national and European Authorities/Agencies and consider how these may be placed within an information network as intended with SafeSeaNet (including derivatives/extensions). These will be derived from requirements obtained within other Directives and initiatives, as reported here above, as well as initiatives currently under development, such as the

#### D.2.1.4.2 Review of Directive 2002/59/EC and associated initiatives



Customs Single Window. This will include an analysis of how these requirements fit into concepts such as Maritime Information Management/National Single Windows.

The potential scope of influence for Directive 2002/59/EC and 2009/17/EC, and in particular systems and regimes initiated and developed under its guise, may be more far reaching than initially envisaged. To this end, and following completion of all relevant version 2 studies, a review will be made of all related measures and initiatives identified in SKEMA bearing relevance and falling within the scope and meaning of the current Directive and amendment, resulting in a gap analysis indicating where new or amended provisions may be required. This activity will be completed in version 3 of this study.

## 6. References

1. Partial Regulatory Impact Assessment of The Merchant Shipping (Traffic Monitoring and Reporting Requirements) Regulations 2004 and the Implementation of Directive 2002/59/EC (Establishing a Community vessel traffic monitoring and information system), MCGA, Feb 2004;
2. MarNIS Deliverable D-HA2D draft, November 2008;
3. [www.emsa.europa.eu](http://www.emsa.europa.eu)
4. Relevant IMO initiatives:

### IMO Conventions:

- International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL) and the Protocol thereto;
- International Convention for the Safety of Life at Sea (SOLAS), together with the protocols and amendments thereto;
- International Convention on Tonnage Measurement of Ships, 1969;
- International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and its 1973 Protocol relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil;
- International Convention on Maritime Search and Rescue, 1979 (SAR Convention).

### IMO Codes:

- International Safety Management Code (ISM Code);
- International Maritime Dangerous Goods Code (IMDG Code);
- International Code for the construction and equipment of ships carrying dangerous chemicals in bulk (IBC Code);
- International Code for the construction and equipment of ships carrying liquefied gases in bulk (IGC Code);
- Code of Safe Practice for Solid Bulk Cargoes (BC Code);
- Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on board Ships (INF Code).

### IMO Resolutions:

- IMO Resolution A.851(20) entitled General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants.
- IMO Resolution A.917(22) entitled “Guidelines for the onboard use of AIS”, as amended by IMO Resolution A.956(23);
- IMO Resolution A.949(23) entitled “Guidelines on places of refuge for ships in need of assistance”;
- IMO Resolution A.950(23) entitled “Maritime assistance services (MAS)”;

### IMO Guidelines:

- IMO guidelines on the fair treatment of seafarers in the event of a maritime accident as annexed to resolution LEG. 3(91) of the IMO Legal Committee of 27 April 2006 and as approved by the Governing Body of the ILO in its 296th session of 12 to 16 June 2006.’

## 5. Relevant EU Directives:

<b>Directive/Communication</b>	<b>Subject</b>
1991/97/EC	Port State Control
Com2005/588	
1998/41/EC	Passenger Lists
2000/59/EC	Port Reception
2002/6/EC	Port State reporting
2002/58/EC	Privacy and data
2001/96/EC	Safe Loading/unloading (IMO BLU Code)
1998/18/EC	Safety Passenger Ships
1998/18/EC with 2003/24/EC amendments	
1998/18/EC with 2003/24/EC+2003/25/EC amendments	
EU/95/64	Seaborne Statistics
1999/35/EC	Stability RoRo
2003/25/EC	
2002/84/EC	
2003/57/EC	
2005/12/EC	
2002/59/EC + 2009/17/EC	
ILO Seafarers Identity Documents Convention (Revised 2003)	IMO – ISPS
Regulation 725/2004	
2005/0240 (COD)	Investigation on accidents