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Support study for an Impact Assessment on: Directive 2002/59/EC as amended - "The Union Vessel Traffic Monitoring and Information System"

In cooperation with the European Maritime Safety Agency (EMSA)

On behalf of: DG MOVE, EMSA

Final Report v3.0

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List of Abbreviations

Abbrev.	Definition
AIS	Automatic Identification System
CISE	Common Information Sharing Environment
COSS	Committee of Safe Seas
CSN	CleanSeaNet
EFCA	European Fisheries Control Agency
eMS	Expert group on Maritime administrative simplification and electronic information services
EMSA	European Maritime Safety Agency
EQUASIS	Database containing safety-related information on the world's merchant fleet.
EUCG	European Union Coast Guard
EU LRIT CDC	European Union LRIT Cooperative Data Centre
EU-NAVFOR	European Union Naval Force
EUROSUR	European external border surveillance system
ESTAT	Eurostat
FRONTEX	European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union
GI	Graphical Interface
GT	Gross Tonnage
HAZMAT	Hazardous Materials (Dangerous or Polluting Goods).
HLSG	The High Level Steering Group (HLSG) on SafeSeaNet
IFCD	Interface and Functionalities Control Document
IMDatE	Integrated Maritime Data Environment
IMO	International Maritime Organisation
ISM	International Safety Management
LRIT	Long Range Identification and Tracking
MARSURV	Anti-piracy monitoring service
MAS	Maritime Assistance Services
MRCC	Maritime rescue Co-ordination centre
MRS	Mandatory Reporting System
MS	EU Member States
NCA	Member State National Competent Authority
NSW	National Single Window
PMoU	Paris Memorandum of Understanding on Port State Control.
PoR	Places of Refuge
PortPlus	SSN message containing Pre-arrival, arrival, departure

Abbrev.	Definition
	and HAZMAT information.
PSC	Port State Control
RFD	Reporting Formalities Directive
RVD	Reference Vessel Database (alternatively VD)
SAR	Search and Rescue
Sat-AIS	Satellite based Automatic Identification System (or S-AIS)
Shore-AIS	Shore-based Automatic Identification System
SSN	SafeSeaNet
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
THETIS	Information system that supports the new Port State Control inspection regime
VDS	Satellite-based radar detection
VMS	Vessel Monitoring Systems
VTMIS	Vessel Tracking, Monitoring & Information System
VTS	Vessel Traffic service
XML	Extensible Markup Language

Executive Summary

Information technology is one of the transport policy areas which can contribute significantly towards established policy aims. Indeed, the 2011 White Paper warns against delayed actions and the timid introduction of new information technology, pointing towards the contribution it can make towards sustainability and European competitiveness.

This impact assessment support study for the revision of the VTMIS Directive 2002/59/EC considers different approaches for improving the functioning of the Directive in both its safety aspects for vessel traffic monitoring and as regards the Union information and exchange system, SafeSeaNet, the IT 'tool' established within that Directive and for the purposes of the VTMIS Directive and other Union legislation. The impact assessment process and this study reveal that the main issue concerns the better utilisation of the system and the promotion of its wider use by harnessing the collective investment that has been made in the development of SafeSeaNet. In this way, its contribution to maritime safety and the efficiency of maritime transport and traffic may be optimised.

The study puts forward as the preferred option step-wise changes that will align the current VTMIS Directive 2002/59/EC more clearly with evolving technical developments, and provide clarity in relation to the user base, thus allowing the system to realise its potential as the common platform for maritime data exchange within the wider context. It recognizes the clear interlinking with other relevant Union law and in particular the Reporting Formalities Directive and the on-going work of establishing the required national single windows.

The study, conducted in 2013, has undertaken targeted stakeholder consultation within the VTMIS community, with other non-VTMIS authorities, and with industry. This has involved a stakeholder conference, questionnaires and targeted stakeholder meetings. It builds upon the continuous process of stakeholder consultation that has been led by the *SafeSeaNet* High Level Steering Group since 2009. Throughout this time, EMSA has been actively engaging with both the VTMIS and non-VTMIS communities through working groups, site visits and pilot projects.

From this basis, the study has set out three objectives: (1) better utilisation of SafeSeaNet, (2) broadening of the user base, and (3) improved compliance with Directive. A set of eighteen measures have been considered, within three policy packages, ranging from the continuation of existing initiatives, to amendment of the Directive (comitology approach) to a full recast of the Directive. In addition, a combination of measures has been considered.

Since the objectives have been set in terms of achieving higher levels of usage, broadening the user base and improved compliance, the preferred measures do not necessitate high levels of new expenditure or investment in technical infrastructure or surveillance equipment. Nor does it introduce any additional reporting requirements on industry. Instead, the measures are aimed at achieving higher levels of return on investments (and thereby the major costs) already made over the past 10 years both at national and EU level, making full use of the SSN system and the improved range of integrated maritime services and technological developments provided for today.

The measures address the legislative and technical synergies between SSN and other systems, including the Reporting Formalities Directive and the VTMIS Directive, which will prevent the need for parallel technical systems, duplication, and ultimately further investment costs. Aligning the two instruments offers the potential for lower levels of duplicated reporting from shipping lines and agents to authorities. Such a development works towards the principles of 'reporting once' and thereby avoidance of duplication, more efficient use of resources, and improved user-friendliness.

Therefore the integrated maritime services, along with the legislative and technical synergies, serve the fostering of the improved implementation of what is an already operational system.

As a result of this IA support study, the preferred policy option lays with a continued step-wise approach (Option 4) respecting the important ongoing implementation work with the National Single Windows (NSW) as required by the reporting formalities Directive. The policy option 4 is a combination involving the amendment of the Directive (options 2) and a recast of the Directive (option 3) made with the benefit of the experience gained from the

operational link between the SSN and NSW. The first step, Option 2, could be undertaken in the short term, with Option 3 becoming the second step, thereby allowing a future, full revision of the Directive to allow also benefitting from the experience gained from the achievement of a fully operational link between the SSN system and the national single window environment.

1 General Context

1.1 *Background to VTMIS Directive*

The reasons for Vessel Traffic Monitoring to be regulated in its current form and for the development of an Information System have their historical origins in the early 1990s. Information about hazardous goods carried on board vessels was first included in the HAZMAT Directive (93/75/EEC) as part of the Safe Seas Communication of 1993. However, it hinted at the ambition for the establishment of a system to exchange the information reported, making it a 'more complete' reporting system. This was achieved by the VTMIS Directive of 2002 (Directive 2002/59/EC, hereafter the VTMIS Directive), which replaced it, introducing a reporting obligation on the Ship (master, owner or agent). It ensured, among others, a more uniform implementation of the requirements at international level (in IMO) on vessels1 to carry AIS transponders and on the coastal States to invest in receivers.

As maritime and maritime safety policy developed, several reporting systems in various EU Directives related to maritime safety, HAZMAT, port reception facilities, ship-source pollution, and port state control were however introduced or foreseen.

While the original purpose was that of realising improved information about, in particular, hazardous material on board in the situation of a maritime accident at sea, and therefore part of the EU maritime safety policy, it was realised at the same time that efforts had to be made to avoid creating multiple requirements for reporting in a uncoordinated way and also for avoiding the need to build multiple systems to handle the information. That would run the risk of creating duplication thereby increasing the consequent risk of causing additional administrative burden (confusion) and costs, for no added value.

Hence, after discussion with Member States it was decided to work towards one system capable of handling all relevant reporting requirements stemming from current or future Community legislation, also capable of interlinking those existing national

[1] As it is based on the International requirements it also applies in the same way to commercial vessels above 300 GT.

systems thus creating interoperability, which could avoid the above risks.

That concept became the SafeSeaNet (SSN) system which, as the name indicates, has a strong connotation with safety at sea. The process of setting up SSN started as a large scale project in 2003 and was launched as one of the core tasks for the European Maritime Safety Agency (EMSA), after its inception, in 2004. Together with the Commission and EU Member States (MS), EMSA then undertook the technological work in setting the system up. This involved substantial start-up investments, lasting until 2009 when the system became operational.

As progress was made, it was realised that the system had great potential in areas other than the core safety aspects. Attention was drawn towards trade and transport facilitation and it was recognised that SSN had the potential to be a platform for a wider range of maritime information exchanges. This led to the revision of the Directive in 2009 in order to include, among other changes, more specific provisions relating to the feasibility and development of functionalities in the system that as far as possible would ensure that the data providers (masters, owners, agents, operators, shippers and relevant authorities) would only need to submit information once. For this to function, it then also needed to ensure that electronic messages exchanged in accordance with the VTMIS Directive would connect with relevant Community systems established by other Community legislation, and use SSN as the *distributeur*.

The Directive therefore introduced the requirement on Member States to develop and maintain the necessary interfaces for electronic data transmission to the SafeSeaNet. The SSN system was defined[1] as the Community maritime information and exchange system, to formally reflect these developments.

So, while SSN is legally regulated in the VTMIS Directive, it is not intended to be bound by that Directive alone. It also serves as the distributor of exchanged information within the maritime domain, meeting the needs arising from the implementation of other Community legislation.

[1] 'SafeSeaNet' means the Community maritime information exchange system developed by the Commission in cooperation with the Member States to ensure the implementation of Community legislation; (Article 3, VTMIS Directive)

The purpose of the Directive 2002/59/EC is to establish a system to enhance (1) the safety of and (2) the efficiency of maritime transport and traffic. This system or tool supports Member States authorities involved in the maritime domain, in performing their tasks and obligations under national, EU and international law.

In practical terms, there is a basic need to monitor maritime traffic in the concerted effort to avoid any accidents in the first place. In the event of an accident there is then an immediate need for operational information. There is a need to know what a vessel is carrying (transporting) on board in order to allow the authorities to take the best course of action to mitigate the accident; saving lives of crew and passengers (search and rescue), and helping to reduce the potential impacts in terms of pollution to the environment.

Under normal circumstances, the same core information regarding the goods and passengers on the ship can be used for trade facilitation purposes as well as for enforcement and control purposes in the fields of customs, sea border control, sanitary and health and, general law enforcement. These authorities could also use the integrated maritime data streams, showing vessel position, for their specific monitoring purposes, allowing more possibilities for information sharing, reducing or avoiding duplication, and thereby reducing administrative burden on both administrations and the shipping industry.

1.2 *VTMIS Directive and SafeSeaNet*

Directive 2002/59/EC (the VTMIS Directive) therefore establishes an EU-wide vessel traffic monitoring and information system for the receipt, storage and exchange of data on ships' movements, dangerous and polluting cargoes and on accidents and incidents.

This Directive was part of the Erika II package[1] and has been amended by the Third Maritime Safety Package with the aim of further improving vessel traffic monitoring. The stated objective of the current Directive and the general policy aim is to contribute to increasing maritime safety, security and environmental protection and to the monitoring of maritime transport and traffic.

[1] See COM (2000) 802, Communication from the Commission to the Council and the European Parliament of 6 December 2000 on a second set of Community measures on maritime safety following the sinking of the oil tanker Erika off the French coast in 1999.

The Directive currently covers four main chapters:

- Ship reporting and monitoring;
- Notification of dangerous or polluting goods on board ships (HAZMAT);
- Monitoring of hazardous ships and intervention in the event of incidents and accidents at sea, and;
- Accompanying measures.

SafeSeaNet (SSN), established within the VTMIS Directive, is the platform for maritime data exchange, linking together maritime authorities from across Europe, and as such is used to fulfil the obligations of the Directive and other Community legislation. SSN is a Community-wide system, composed of a network of national systems in the Member States and a central system acting as a nodal point, hosted and operated by EMSA.

1.3 *Governance*

Apart from the reference in Article 28 (Committee procedure) to the Committee of Safe Seas, COSS, the legislators anticipated the need to have a governance body to oversee the experience in operating the system, its development, including areas such as technical enhancement and performance, and access to the system, as well as its possible interlinking with other relevant systems.

The Directive therefore designates a governance body, the High Level Steering Group (HLSG) on SafeSeaNet, which was established on 31st July 2009[1], consisting of representatives of the Member States, the European Commission, and EMSA. The HLSG is responsible for the overall strategic direction of SafeSeaNet, its use and further technological and operational development. This is linked to Article 23 (Cooperation between Member States and the Commission), where there is a direct requirement for cooperation towards extending the coverage of the SSN and updating it to take into account developments in information and communication technologies.

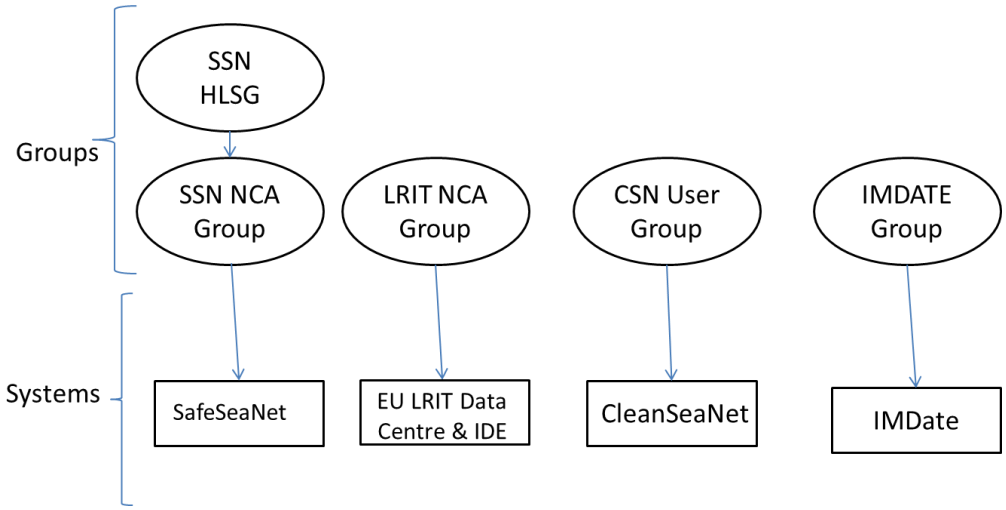
This technical development has led to the establishment of various expert groups (also supporting other Community Legislation), each

[1] Decision 2009/584/EC

dealing with the technical development of 'their' specific application or system, in relation to the SafeSeaNet.
There are therefore technical groups which bring together the Member State National Competent Authority (NCA) and representatives for each of the maritime systems in place. These include:

- SSN group (for the technical and operational aspects) reporting to and falling under the HLSG,
- the LRIT (Long Range Identification and Tracking) NCA group,
- CleanSeaNet (Satellite oil spill monitoring) User Group, and
- IMDatE[1] (Integrated Maritime Data Environment) Member State *ad hoc* group falling under the HLSG

Figure 1-1: Expert groups related to SafeSeaNet



Source: EMSA

There is also a group set up under the Reporting Formalities Directive (the eMS group and sub-groups) which is interlinked to the SSN HLSG group and where coordination, as necessary, is ensured by the Commission.

In addition to the above, two ad hoc groups were established dealing with:

[1] For description see point 1.6

- The new and emerging Satellite-AIS (Sat-AIS) technological platform and how Sat-AIS data can be collected, processed and distributed to the Member States through SSN
- The "Places of Refuge" group[1] which brings all MS competent authorities for dealing with ships in need of assistance together to cooperate in certain technical and operational aspects in the implementation of the Directive in relation to places of refuge.

All groups are linked in that they rely on the SSN system to exchange information or share information through the provision of integrated maritime services.

1.4 *Implementation of the Directive*

In 2011, the Commission published a report[2] for the Parliament and the Council, assessing the implementation and the impact of the measures taken according to Directive 2002/59/EC. The report is based on the following input:

- Information received from Member States regarding their implementation of the Directive;
- The findings resulting from the Member State inspections which were carried out by EMSA on behalf of the Commission;
- The Horizontal Analysis[3] carried out by EMSA, and;
- The periodical SSN data quality and availability checks and the analysis performed by EMSA's Maritime Support Services.

In general, it was concluded that the VTMIS Directive is achieving its original stated purpose of establishing a Community vessel traffic monitoring system supporting Member States in enhancing safety and efficiency of maritime transport and traffic. As part of this system the SafeSeaNet tool, was set up and, while its benefits are recognized and it is starting to be used more frequently, it is not yet used to its full potential. There have also been changes in the context in which the system is applied; primarily technical advances and new EU policy initiatives, which have substantially redefined this potential and raised issues concerning the Directive,

[1] In accordance with Article 20.3 of Directive 2002/59/EC
[2] COM(2011) 232 Final– 26/4/2011.
[3] Regulation 1406/2002 (EMSA regulation) as amended, article 3.5

SafeSeaNet itself, and its relationship with subsequent legal instruments.

1.5 *Dynamics of VTMIS Directive*

The VTMIS Directive is not 'static'. It is so structured, as explained in chapter 1.3, that there are governance groups put in place for the continuous improvement in the technical implementation of the Directive, learning form experience with the operation of the SSN system.

Article 23 requires cooperation between Member States and the Commission with the objective of:

> *"(c) extending the cover of the […] system, and/or updating it, with a view to enhanced identification and monitoring of ships, taking into account developments in information and communication technologies. […]"*

This is coupled with the tasks for the SafeSeaNet HLSG[1] to look at "current and future developments of SafeSeaNet, including its contribution to maritime surveillance from a holistic perspective".

Hence the VTMIS Directive is quite dynamic and serves as a good example of how the implementation and operation is done with the full involvement of the MS at all levels, taking a step wise approach. This means that upon a request from the HLSG, EMSA is asked to investigate internally the feasibility for a technical solution and draw up a proposal on how to go about it. This is then discussed in the HLSG and MS are invited to participate in the work on a pilot project basis.

The work is then normally carried out in the context of the SSN group. Once the SSN Group comes up with a solution, this is discussed in the HLSG for guidance or decision on next steps. Technical projects, requiring development, include a practical testing phase with some volunteering MS. The project report back to the HLSG where a full roll-out plan is then decided and the system implemented, improved and updated, learning from experience in operating the system.

[1] Commission Decision (2009/584/EC) of 31 July 2009

The following Table 1-1 gives an overview of such technical implementation projects. Many issues are addressed in this context, always with the full involvement of the MS, and with the technical expertise of EMSA, as the objective is always to base developments on real practical needs stemming, not from scenarios, but, from real operations. The detailed descriptions of the projects mentioned in the table below are provided in Annex 7: Implementation Projects

Table 1-1: Implementation Projects (SSN and IMDatE)

SafeSeaNet (SSN)	Status
SSN V.2	Operational
AIS data streaming to SSN	Operational
Improving Hazmat reporting to SafeSeaNet	On going
Improved Incident Report	On going
SSN Graphical Interface (SSN GI)	Operational
MRS reporting	On going
Reference Vessel Database (RVD)	On going
SSN XML enhancements	On going
SSN V.3	On going
Reporting and Exchanging of Information on Exemptions	On going
SSN security study	Achieved
Blue Belt pilot project	Achieved
SSN/VMS pilot project	Achieved
SSN/radar data exchange (technical study)	Achieved
SSN proxy pilot project	Operational
EU/Russian Federation cooperation	On going
EU/Morocco cooperation	On going
Access to SafeSeaNet data for the BE-AWARE Project	Achieved
Ship emissions pilot project	Achieved
Non-VTMIS users granted access to SafeSeaNet	Operational
Coastal station and place of refuge information (STMID)	On going

Integrated Maritime Services	Status
IMDatE technical platform	Achieved
Anti-piracy support for EU NAVFOR	Operational
Border Control Surveillance support for FRONTEX	Operational
Fisheries campaign monitoring for the European Fisheries Control Agency (EFCA)	Operational
Pilot Service to volunteer Member States	On going

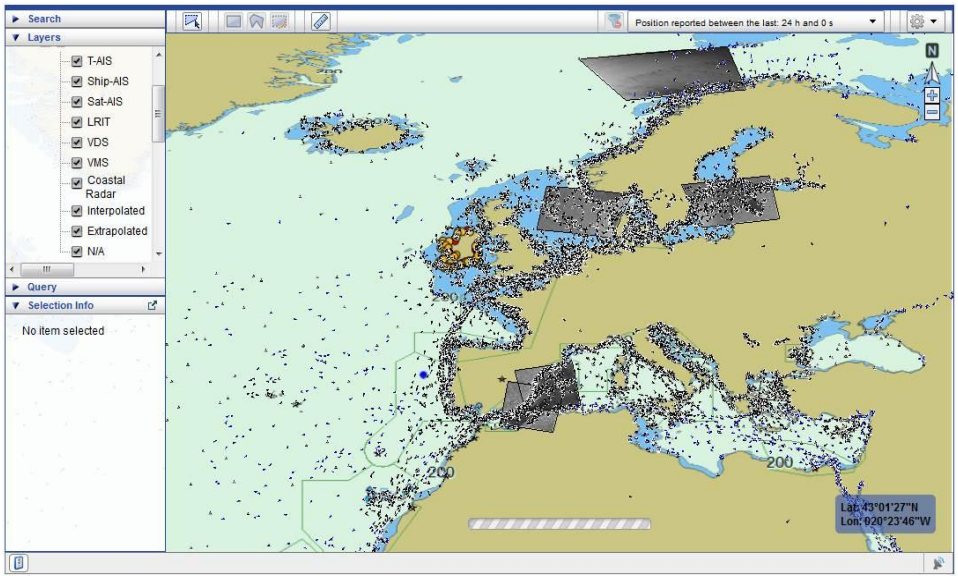
Source: EMSA

1.6 *Recent technological developments*

Following discussion and approval of the HLSG, EMSA has worked on the implementation of a platform for the provision of integrated maritime services. This platform, called Integrated Maritime Data Environment (IMDatE), provides configurable services to users, and fosters the sharing and exchange of data between different users and applications, with SSN at the core.

Through the implementation of this new concept, users now have, *inter-alia,* access to an operational and reliable Satellite-AIS data source and they benefit from the integration of a wide variety of existing and new data streams. Users have access to the integrated maritime information via a single graphical interface (see Figure 1-2) which replaces the previous need for multiple applications and screens. Provision of new machine-to-machine interfaces and automated vessel behaviour monitoring enables the integration of added-value information directly into Member States own national systems.

Figure 1-2: IMDatE: Integrated Maritime Data Environment



Source: EMSA

This IMDatE platform currently provides a number of operational integrated maritime services in the areas of anti-piracy, fisheries campaign monitoring and border control, directly to EU-NAVFOR, EFCA and FRONTEX, respectively. In addition a pilot service is offered to a number of volunteer Member States. User Consultation meetings with Member States have demonstrated support for the IMDatE platform and

the services offered, in particular, the availability of multiple data streams and their integration towards the provision of an up-to-date and complete maritime domain awareness picture.

1.7 *Further Revision of the Directive*

The VTMIS Directive, and the SSN System therein, has been and continues to be developed (as explained above) following a stepwise approach. The starting point for possible further revision is the need to assess how to harness recent developments and technical solutions towards a better and more efficient system encouraging higher rates of use by MS, in fulfilling the objectives and purpose of the Directive as part of overall transport policy.

In addition there is a need to address the implications of more recent pieces of Community legislation which refer to the exchange of information between maritime applications. In the context of the implementation of the already adopted EU legislation (i.e. the third Maritime Safety Package) and of EU policies relating to Port State control, maritime security and reporting formalities, SSN is mentioned as the platform for sharing additional data and managing more information. This implies using SSN to provide not only an enhanced service for maritime safety, security and pollution prevention but for improving the efficiency of maritime transport and traffic thereby involving and supporting additional functions and users.

This and other related technological developments along with the future possibilities for SSN to combine, process, and integrate maritime data such as LRIT, Shore-AIS, Satellite-AIS, VMS, VDS (satellite-based radar detection), Synthetic Aperture Radar (SAR) and optical Earth Observation satellite products, as well as other information (such as HAZMAT reports, incident reports, end-user data/observations, etc.) allows SSN to develop as the core system, the Union maritime information and exchange system, for the efficiency of maritime traffic and maritime transport in the Union.

The value added of an extended data collection in SSN combined with an integrated maritime data approach can provide the capability and flexibility to build a more complete maritime picture matching the needs of a broad spectrum of

end-user profiles. In addition, the extended data source management, and the integration process as expressed in the paragraph above, will enhance the support available for other users in the maritime domain[1].

Following a decision of the SafeSeaNet High Level Steering Group in 2010 to use SafeSeaNet, access was provided on a pilot project basis for such non-VTMIS or integrated maritime service clients. The aim was to learn and to test capabilities, interoperability and to further develop SafeSeaNet as a platform which could be of benefit to other users and therefore meeting the purposes of enhanced safety and more efficient maritime transport and traffic operations. At the same time it would foster further cooperation, integration and exchange of information with users and authorities in the maritime domain.

Such projects have been undertaken for the fields of customs (e.g. Blue Belt), border control (EUROSUR), fisheries (VMS), anti-piracy (EUNAVFOR), environmental (DG-CLIMA), and statistical purposes. At the request of the HLSG an evaluation of such projects involving non-VTMIS users has been undertaken (Annex 8: Evaluation of SSN Pilot Projects for non-VTMIS users.)

These projects have demonstrated positive benefits with all the MS participants and two of the EU users indicating that maintaining access to SSN would be "beneficial to their work" and that SSN "supports their operational needs". The majority of non-VTMIS users report that they have been using the SSN data constantly or often, mainly AIS data and PortPlus data. The impacts on the SSN system, as determined during the evaluation of pilot projects (Annex 8), in terms of capacity and cost were only marginal, underlining the aim for avoiding the construction of alternative systems or the need for costly interoperability solutions. Many of the limitations found and suggestions for improvement, point towards the developments currently being implemented within IMDatE, i.e. the integration of a number of short range and long range data streams into a single picture.

[1] Other (non-VTMIS) users apart from those involved in the core areas of maritime safety, security and prevention of pollution by ships (VTMIS users), i.e. users in fisheries control, customs, border control, general law enforcement and defence.

The use of SSN to exchange data within or between systems, as one means of cross-border and cross-sectoral data sharing, is an important development. The modifications and changes to SSN are essential as without these, there is a risk that policy developments cannot take place or that parallel duplicate systems or solutions, at extra costs, would have to be established.

On this basis the European Commission launched an Impact Assessment support study into revision of the Directive, and for possible further steps.

The objectives for the revision are listed below:

Objectives for the Revision of the Directive
1. To address in a more efficient way, the needs of the EU maritime administrations and to support a wider number of users or functions, clarifying or removing any real or perceived barriers for such information exchange; improving overall utilisation.
2. To strengthen the role and structure of SSN to become a more flexible system to enhance communication and guarantee interoperability between National and Union maritime surveillance systems through the use of common standards.
3. To harness technological developments enabling improvements in maritime surveillance and thereby to promote safe, secure and efficient shipping, and to contribute to the overall efficiency of maritime traffic surveillance and maritime transport, avoiding or reducing duplication in effort and investments in assets and systems, ensuring reliable high quality information exchange.
4. To improve efficiency, by providing enhanced support through the technological advancements, to the relevant EU and MS administrations.

The key issues are therefore related to the use of the system to meet the purpose of the directive to (1) enhance maritime safety and (2) efficiency of maritime transport and traffic, and if there are any real or perceived limitations or barriers.

2 Consultation of Stakeholders

Consultation regarding the VTMIS Directive and SafeSeaNet in particular amongst stakeholder groups has been on-going since the system was launched. Development has been steered by the High Level Steering group since 2009, as foreseen by the VTMIS Directive. EMSA has been actively engaging with both the VTMIS and non-VTMIS communities through working groups, site visits and pilot projects.

The "SSN High Level Steering Group" (SSN HLSG), as established by Article 22a and Annex III, is the body drawn from the representatives of the MS that is mandated and used for all discussions, deliberations, decisions and consultations in relation to the SSN development. To support the development and manage the technical and operational documentation of the system, a separate more technical group, called the "SSN Group", has been established. The SSN Group and dedicated expert groups, set up when needed, report directly to the SSN HLSG.

For this Impact Assessment Support Study, consultation has focused upon experts from the Member States authorities covering the VTMIS community and other public sector stakeholders, as well as industry associations representing, amongst others, ports and ship-owners. Between them, these organisations bear virtually all of the costs associated with the collection and distribution of data within the system.

Given the continuous discussions, both at technical and operational level, regarding the development and use of the SSN and owing to the highly technical nature of the subject matter, a public consultation was not considered appropriate.

It may be taken for granted that the general objectives of maritime safety and efficiency of maritime transport and traffic are widely shared, but that insight into VTMIS operation and potential regulatory solutions may best be understood by the parties directly involved in the implementation of the Directive, and benefitting from the system and its services. Therefore the impact assessment relies most heavily upon the knowledge and expertise of the authorities who are directly responsible for

managing the national SafeSeaNet systems, and who are most heavily impacted by changes related to the Directive, as well as EMSA with respect towards hosting and managing the technical development at central level.

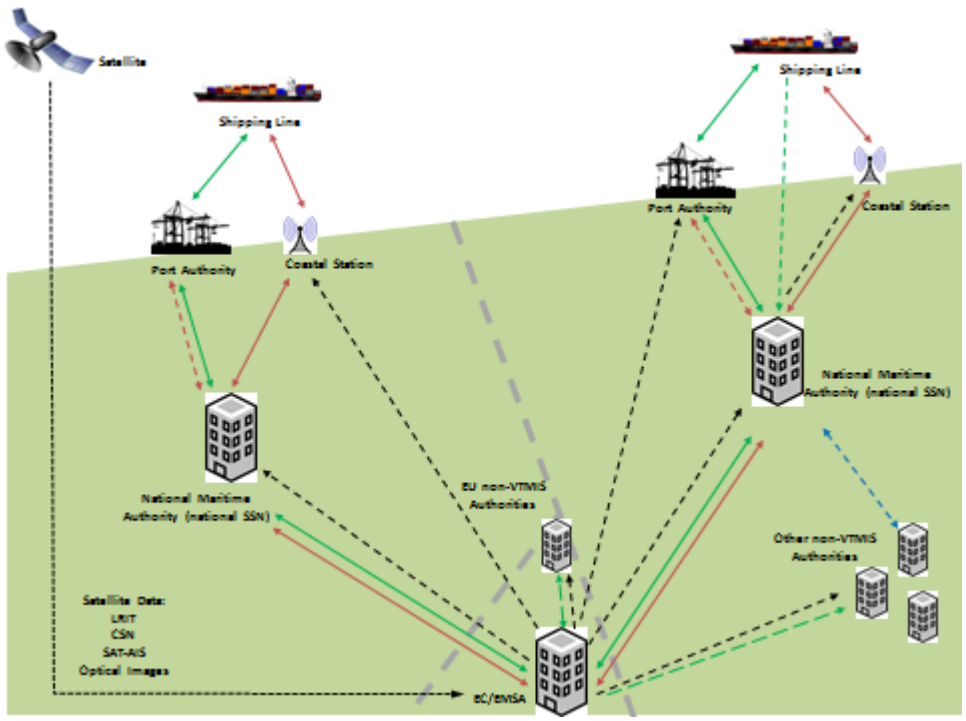
2.1 *Stakeholder groups*

Three main categories of VTMIS stakeholders can be identified:

- The VTMIS users, i.e. national authorities responsible (NCA) for implementing the VTMIS Directive.
- Industry stakeholders, predominantly from the ports, forwarders, shipping lines and shipping agents.
- Other stakeholders, involved in surveillance of maritime transport and traffic, i.e. non-VTMIS authorities.

Amongst these stakeholders, all parties share a common interest in maritime safety, and in the effective use of operational information without duplication. However, their roles and access rights differ. The information flow is from business to government (B2G), with SSN providing the capability for sharing information amongst Member States (G2G).

Figure 2-1: Information Flows - VTMIS



Industry organisations are responsible for meeting legal reporting requirements and for providing the stipulated data and information. Shipping lines and forwarders bear the cost of initial data entry. The national VTMIS authorities bear the cost of providing the ICT infrastructure at national level to capture the data messages remotely and relay them via SSN. The EC/EMSA bears the cost of providing the central infrastructure which allows the information to be relayed between countries. EMSA also bears the cost of providing a coordinating role, including training and technical support, and to an increasing extent, value added services involving complementary data streams such as LRIT and SAT-AIS

Amongst the non-VTMIS authorities using SSN via pilot projects coordinated through the HLSG are:

- Border/Immigration Control
- Customs
- Defence/navy
- Environmental protection
- Fisheries
- Security
- Police
- Law enforcement
- Others

2.2 *Methodology followed*

In 2013 a series of targeted consultation events were organised. The invitees included all current users of the system, Member States both as regards to the system aspects and also safety aspects e.g. Places of Refuge implementation. A questionnaire was also sent out to non-VTMIS users who have access to the system which included Member States, EU agencies and industry. In addition, consultations took place internally for aspects regarding the use of the system for enhanced implementation of directly related Community legislation in this field e.g. Port Reception Facilities and ship source pollution Directives.

A "problems and issues" document was circulated in advance followed by a series of questionnaires.

In addition to the on-going consultation/implementation work, the following table summarises the main targeted consultations which took place for this study:

Date	Event
15 May	Place of Refuge Group Meeting in Lisbon
7 June	Stakeholder Conference, Lisbon
18 June	Meeting of the eMS[1] – Expert Group on Reporting Formalities, Brussels
19 June	SSN High Level Steering Group, Brussels
20 June	Dedicated consultation with members of HLSG, Brussels
26 June	Dedicated Industry consultation with representatives of European seaports, ship-owners, shipping associations, tanker owners and oil carriers, Brussels

- Stakeholder Conference conducted on the 07 June 2013, participants included:

    - MS representatives from the VTMIS community, other user groups represented by NL Ministry of Economic Affairs, Netherlands Customs Administration and Eurostat
    - the European Agencies: European Fisheries Control Agency
    - representatives from industry associations, European Community Ship-owners' Association, World Shipping Council, International Chamber of Shipping, European Port Community Systems Association and, the European Sea Ports Organisation.
    - various Commission DGs; DG-TAXUD, DG-MARE, DG-CLIMA.

- They were consulted on the problems and drivers at the conference and asked for their input, via a questionnaire.
- Questionnaires were sent to all non-VTMIS users following the pilot projects conducted with them where they were given temporary access to SafeSeaNet.
- Questionnaires on problems, drivers, options, SafeSeaNet-related costs and integration were sent to the VTMIS

[1] eMS: Expert group on Maritime administrative simplification and electronic information services

authorities following a meeting on 20 June 2013 with the High Level Steering Group (HLSG) for SafeSeaNet.
- Questionnaires were sent to Industry followed by specific consultation to clarify their input on the problems, drivers, and options.
- Questionnaires were also sent to the group on Places of Refuge regarding the specific provisions related to the provisions in the Directive for ships in need of assistance.

An analysis of the support study consultation and detailed notes from the stakeholder conference, the written submissions, the consultation with HLSG members, and consultation with industry is shown in Annex 2.

2.3 *Conclusions following the Consultations*

An intensive programme of consultation events together with the on-going discussions in HLSG and expert groups has produced a detailed picture of the state of SafeSeaNet and the issues surrounding the revision of the VTMIS Directive, across all stakeholder groups. A summary is presented below. (Specific points and detailed comments are presented in the annexes to this document).

Priorities

The need for achieving economic growth and initiatives in relation to climate change require the European Commission to take action in reducing transaction costs and encouraging multi-modal transport involving sea transport. The Reporting Formalities Directive addresses the need to reduce administrative costs for sea transport. On the 1st June 2015, all European Member States will be required to have implemented a national single window, and these systems should be connected via SafeSeaNet. Most of the organisations who have responded to questionnaire agree that achieving the single window is the immediate priority for both industry and government. Member States have called for the European Commission to develop a *holistic view* covering data needs and the necessary systems and services for information sharing.

Technical Future

Towards these objectives, SafeSeaNet will develop as the "electronic motorway for exchanging maritime data". Developments decided by Member States and carried out together with EMSA have demonstrated the capability to broaden both the technical content and to provide secure and tailored data information streams to, potentially, a broad range of functions, avoiding duplication.

It was felt, especially by Member States that the Directive should allow for technical evolution, but that any such developments should be better balanced between being user driven and technology driven. There is a need to match developments to end-user benefits, in a cost efficient way. The MS stressed that the new technologies should also not have any financial impact on the Member States nor imply any additional requirements for new equipment installation on ships without prior relevant agreement at IMO level.

Throughout the consultation process, Member Sates reacted positively about the need to implement integrated maritime services. However, for some Member States the administrative and governance structure to set-up and operate these services was not clear while others highlighted the importance in maintaining the full control over the data access rights. Some representatives requested to take into account existing initiatives.

End-user benefits

While many, especially from the maritime industry, see great potential in using information sharing to reduce administrative burden, all stakeholders also see sub-optimal use within the present system. SSN is seen by many users in the Member States as a tool to comply with their legal reporting obligations and therefore they do not request data nor benefit from the investments which have been made. Usage figures demonstrate that a substantial number of Member States have not granted access to SSN to their entitled authorities. Even for those authorities with access, the number of transactions between the Member States shows that usage remains low. Member States make relatively infrequent use of each other's data, and concerns were raised by both MS and industry about data

quality and accuracy in relation particularly to the hazardous materials. Some of the ports also perceived their role as merely data providers without anything in return from SSN.

Underlying these problems, stakeholders point to issues such as access/confidentiality barriers, and the fact that they are able to obtain most of the information they need via their national SSN systems, which process the vessel traffic information *en route* to the central SSN. So while the reported data is being used, the benefits of sharing data are not fully realised, and access is mainly limited in practice to authorities who have direct access at national level. The issue of the liability of the data provider (agent, master or operator) has also been raised during the consultation meetings. Some Member States suggested the revision of Article 14 of the Directive to enable exchange/reuse of the Hazmat data.

It was also felt, within the HLSG discussions especially, that usage levels would improve as experience with what is currently a new system, increased. Member States tend not to link suboptimal use or issues of data quality to the provisions of the Directive, except in the sense that it has resulted in a focus on technical implementation, and the perception of a "one-way system".

Culture of information sharing

Discussions in the stakeholder conference touched upon the question of information sharing as a cultural issue. Some Member States saw benefits in developing dedicated systems for specific authorities, while other Member States saw an obligation for information re-use by authorities. This point is closely related to the question of who invests in technical developments, and who benefits from the information generated. While sharing generates system benefits (stated by several participants), some argued that these are not necessarily direct benefits for the industry or government organisations making the investment. One Member State representative argued that through sharing, some feel that they are giving away their competence and that addressing concerns of this nature would be difficult to incorporate into a directive.

Legislative developments

Stakeholders broadly recognised the need for the Directive to reflect and make reference to existing legal developments, especially the Reporting Formalities Directive. Member States in general supported the inclusion of new legislative requirements. However some of them underlined the role of the existing governance body (SSN HLSG) which has to be carefully considered in relation to other relevant legal acts of the EU.

In many operational areas, it was felt that the Directive was clear enough and acknowledged problems could be addressed via non-legislative routes. The key issue seems related to the purpose and the difference between VTMIS as safety legislation and within that SSN as a system with broader scope, serving also other community legislation. Most do see a problem concerning data access for non-VTMIS bodies, but it was evident from the answers provided, that there is no clear consensus on what the scope of the Directive is today, pointing towards an issue of clarity.

Opening up (access/interoperability)

The question of SafeSeaNet use raises issues about who should have access, and the mechanism for controlling access. Here, there is a broad consensus that access can or should be opened up to other public authorities. Fewer authorities argue in favour of opening up for industry. The industry itself noted that SSN could have an added value should it be opened to them and this was especially in terms of the casualty information and for statistical analysis.

Industry stakeholders also prefer to distinguish business to business (B2B) and business to government (B2G) reporting. For this area of discussion, port authorities are generally considered as part of the public authority category, even though they also have a commercial function. Shipping lines saw benefits in being able to access their own data, mainly for reasons of validation and accuracy while reporting, and not as an information service.

Issues of opening up, needs to know, and management of access rights are closely interlinked.

Governance

Stakeholders, in this context, Member States, do relate the processes of integration and the evolution of governance structures. There are warnings of overload as the use scope expands to include integrated maritime services rather than a system management based approach. However, there are no calls for substantially changing the governance provisions as set out in the Directive. Rather, initiatives such as CISE[1], are seen as unwelcome parallel developments which do not very well reflect the objectives of Member States. Current arrangements allow SafeSeaNet to progress step by step, with EMSA facilitating technical progress. Member States prefer to see governance structures becoming more strategic, and not just overseeing the existing technical groups managed by EMSA.

[1] Common Information Sharing Environment

3 Legal Analysis

Much of the policy option discussion relates directly to the provisions of the VTMIS Directive and the manner in which SSN is regulated within that Directive. This arises now, in part, because of the implications of the Reporting Formalities Directive, which foresees a high degree of information sharing as the means to reduce administrative burdens for shipping lines. SafeSeaNet is positioned to be the "(only) electronic motorway for exchanging maritime information between the MS and other end-users." And yet, it is seen by a significant number as a dedicated system for the maritime safety community, in which information is exchanged subject to strict limitations on usage. For many consultees, the implementation of the reporting formalities directive is currently the priority, but the question arises of whether this route is impeded while there is still a lack of clarity over information sharing, as required by other Community legislation using SSN, within the VTMIS Directive.

Currently the Directive is perceived to serve mainly the VTMIS users (maritime Safety, port and maritime security and, environmental protection) with more emphasis upon safety than upon the efficiency of maritime traffic and maritime transport. This seems to stem from the fact that the system, SSN, is regulated in the VTMIS Directive but the perception does not consider the general concept and architecture of SSN, in its Annex III, which is to be the system established for exchange of information in an electronic format in accordance with Community legislation, and hence not limited to the VTMIS users only.

There are different pieces of other Community legislation which refer, directly or indirectly, to the exchange of information between SSN and the other maritime applications such as the link of the National Single Window with SSN by the Reporting Formalities Directive (RFD) 2010/65/EU, the SSN/THETIS interface by Directive 2009/16/EC on Port State Control and, the SSN/CleanSeaNet interface by Directive 2005/35/EC on Penal Sanctions, and Directive 2000/59/EC on port reception facilities, to avoid duplication of maritime information and monitoring systems.

Directive 2003/98/EC on the "Re-use of Public Sector Information" encourages EU Member States to make as much public sector information available for re-use as possible.

Considering all of these legal instruments together, it can be seen how SafeSeaNet is positioned as the information exchange platform which allows maritime information to be shared between authorities and MSs, with the purpose of avoiding duplication of systems and with the aim of reducing administrative burden for shipping lines.

Within the RFD, the annex (A) makes explicit reference to the user communities who can share information within SafeSeaNet:

1. Ship notifications – VTMIS Community.
2. Border checks – Border Control.
3. Dangerous and polluting goods – VTMIS Community, Environment.
4. Waste and residues – Environment.
5. Security Information – Law enforcement.
6. Entry declaration – Customs.

Only Fisheries and Defence are not explicitly included. However, EMSA[1] is already currently involved in data sharing initiatives with both communities. EMSA provides an operational service to EUNAVFOR (EU Naval Force) a making use of LRIT and SAT-AIS data to help combat piracy. Similarly there is an ongoing service provided to EFCA for the monitoring of fisheries campaigns which integrates fisheries data (VMS), with both terrestrial AIS and Satellite-AIS data as well as with LRIT.

Data protection and confidentiality is managed by the HLSG who oversee the interface and functionalities control document (IFCD), which specifies access rights, data security and archiving. Article 24 requires that data is only used in compliance with the Directive, and kept confidential. Under the RFD there is also an explicit requirement to comply with Directive 95/46/EC[2], which requires that the purpose for

[1] Based on bilateral SLA

[2] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data

collecting the data is specified, that it is only in a way that is not incompatible with such purposes, and that it is relevant (and proportionate).

Conclusions[1] Regarding Directive 2002/59/EC (VTMIS Directive) and Directive 2010/65/EC (Reporting Formalities)

The VTMIS Directive includes the aim for using the system for reducing the administrative burden and for simplification. This purpose is included in Annex III both under the general concept and architecture and in the chapter on exchange of data through SafeSeaNet. In particular,

> "*the Commission and the Member States shall cooperate in order to examine the feasibility and development of functionalities that as far as possible will ensure that the data providers {…} need to submit information only once*."

This is coupled to the requirement that electronic messages exchanged in accordance with this directive and relevant Community legislation shall be distributed through SafeSeaNet.

The facilitation aspects are then more regulated in detail in Directive 2010/65/EC which states the intention of reducing administrative burden for shipping companies by harmonizing and simplifying reporting requirements.

It is made clear in the annex of 2010/65/EC that it refers to vessel tracking (safety), border controls, environment (waste and pollution), customs and security (law enforcement). Thus, from the target set of non-VTMIS authorities, only fisheries and defence are not referred to.

SafeSeaNet is designated as the system by which the reporting formalities information will be exchanged. SafeSeaNet is defined in RFD as "the Union maritime information exchange system as defined in Directive 2002/59/EC".

Shipping lines will report via national single windows, to be operational by 1 June 2015. This single window, "linking

[1] See Annex 2 for more detailed analysis of the VTMIS and Reporting Formalities Directives. The conclusions are presented in this chapter.

SafeSeaNet, e-Customs and other electronic systems, shall be the place where, in accordance with this Directive, all information is reported once and made available to various competent authorities and the Member States". It is therefore stated that information is reported once by the ship via the single window, and then shared, in circumstances where the information needs to be shared.

Thus 2010/65/EC envisages SafeSeaNet as the information exchange which allows maritime information to be shared between authorities and MSs, with the purpose of reducing administrative burden for shipping lines.

Directive 2002/59/EC sets out two intentions. The first is to establish the SafeSeaNet data exchange, and the second which follows logically, is that SafeSeaNet should be used to enhance not only the important aspects of maritime safety but also, as an integral part, the efficiency of maritime traffic and maritime transport. Establishing SafeSeaNet as the central information exchange is a technical pre-requisite. Enhancing safety and efficiency is consistent with the purpose of the VTMIS Directive, intended for SafeSeaNet, but also in relation to other Community Legislation.

Furthermore, SafeSeaNet is defined as the Community maritime information exchange system developed by the Commission in cooperation with the Member States to ensure the implementation of Community legislation. Complemented with Article 22a.3, Annex III Point 31, states that:

> *'Electronic messages exchanged in accordance with this Directive and relevant Community legislation shall be distributed through SafeSeaNet. To this end, Member States shall develop and maintain the necessary interfaces for automatic transmission of data by electronic means to the SafeSeaNet.*'

This would allow for the facilitation of traffic and transport without losing any safety aims in the process. For it all to connect, and become interoperable, the relevant format must be that used for fulfilling reporting obligations in accordance with the VTMIS Directive and therefore as established for SSN.

[1] Exchange of data through SafeSeaNet

This is a prerequisite for the logic behind the requirement that all required information is reported once and made available to various competent authorities and the Member States and as a consequence the NSW and SSN must be interoperable, accessible and compatible.

This is the interlinking between the two pieces of legislation and it is also where the intention for the use of VTMIS and SSN not only for maritime safety, security and environmental protection aspects (VTMIS users) but also for maritime transport and maritime traffic purposes (VTMIS and non-VTMIS), as required by other Community legislation becomes clear.

Possible limitations to data sharing could be construed in relation to Article 14, and in the reference to Article 14 in Article 22a.

Article 14 implies that Member States may , if needed , exchange information with each other, if the data is needed "*for the purpose of maritime safety or security or the protection of the maritime environment*". This could be interpreted as a limitation. However, the main thrust of Article 14 is that national systems should be compatible, so that priority data needed for operational purposes are exchanged quickly by MS. This must also be seen in the context of the operational parts of the VTMIS Directive in Title III 'Notification of dangerous goods on board ships (HAZMAT)' which are related to the safety and environmental protection purposes for the VTMIS Directive as part of the safety policy and *acquis*.

Annex III makes clear how access rights are determined and how SafeSeaNet is to be managed. The responsibility of the HLSG to maintain the IFCD control document indicates that access rights are not static, but should be used to allow the system to evolve, in such a way as to address the central objectives.

Article 23c goes on to stipulate that MS and EC shall co-operate to extend the cover and update SSN to take into account experience in the operation and developments in ICT. Technical progress is therefore intended.

Issues of clarity arise as a result of the changing context for the VTMIS Directive and other related Community legislation. It was originally set up to establish the technical basis of SafeSeaNet, as a maritime data exchange. Originally, only a limited set of data streams and a limited number of user functions were anticipated, as well as a limited range of uses. However, SafeSeaNet is not bound by these limitations, as it also clearly relates to (should be used for) other relevant Union legislation. Access restrictions have always been but these are delegated to the HLSG to handle.

The VTMIS Directive allows for extension and evolution of SafeSeaNet, and the Reporting Formalities Directive requires it, also setting out which communities require access to SafeSeaNet. Perceived barriers in Articles 14 and 22a depend on an interpretation in which SafeSeaNet belongs to maritime safety (VTMIS) users only. 2010/65/EC makes it clear that this is not so. A logical consequence is that opening up (so that the system can serve both VTMIS and non-VTMIS users) is already foreseen and can be managed under the existing system of access rights. This would not conflict with the purpose of the Directive, Article 1 and Annex III, meaning that the purpose is for enhancing (a) safety and (b) efficiency of maritime transport and maritime traffic.

In the wider context it would not be consistent if a system designated as the central exchange for all kinds of relevant data was restricted to a single use. It would then also not be consistent with the possibility, as already stipulated, to use SSN not only for the VTMIS Directive purposes but also in accordance with purposes of relevant other Community Legislation.

Considering the above, it can be seen how SafeSeaNet is positioned as the information exchange which allows maritime information to be shared between authorities and Member States, with the aim of reducing administrative burden for shipping lines.

Issues related to the Legal Base

In total, seven maritime user groups have been identified[1]:

(i) Maritime safety, security and prevention of pollution by ships
(ii) Fisheries control
(iii) Marine pollution and marine environment
(iv) Customs
(v) Border control
(vi) General law enforcement
(vii) Defence.

As discussed during the consultation process, options to widen the use of the SSN system focus upon users from non-VTMIS authorities (ii to vii above).

The Reporting Formalities Directive makes clear reference to [i] vessel tracking (maritime safety), [v] border controls, [iii] environment (waste and pollution), [iv] customs and [vi] security (law enforcement).

Thus, fisheries [ii] and defence [vii] are not referred to explicitly, and defence is not covered within the same legal basis.

The legal basis, in a system based on the rule of law, is the empowerment to enact legislation. The legal basis defines the limits of sovereignty[2]. Since the EU has conferred powers only, it must tie a legislative measure to a Treaty provision which empowers it to approve such a measure. To proceed on an incorrect legal basis is therefore liable to invalidate the act[3].

The predicament is therefore that a new measure should be founded upon a single legal base. However, defence falls under the Treaty on European Union (TEU) whereas the other functions are under the Treaty on the Functioning of the European Union (TFEU). In such cases it would be necessary to

[1] In the context of the Technical Advisory Group (TAG) to the Common information Sharing Environment discussions

[2] EC Legal services.
[3] ECJ, Opinion 2/00, Cartagena Protocol on Biosafety, adapted.

determine the predominant aim and to use a single legal base except in exceptional circumstances.

Legal advice provided in relation to the CISE[1] initiatives (COWI, 2013, on behalf of DG-MARE) argues that measures (to establish a common information sharing environment) could be based on the TFEU, provided that the objectives being satisfied within the defence sector are covered by or consistent with the TFEU. Moreover, because the CISE initiative sets objectives in terms of integrating the maritime space in a general way, the legal base issue might therefore create a barrier.

However, given the stepwise approach set out in this study, the circumstances related to SSN are somewhat different. There are no requirements (e.g. reporting of data) being asked of the defence community in this context; they would be a willing end-user for an existing information system. Today, there is already an existing operational service[2] which shares different data streams to monitor and combat piracy, on a voluntary basis. This form of initiative is consistent with the goals of SSN (maritime safety, security, environmental protection and efficiency).

The VTMIS Directive sets its objectives in terms of maritime safety and efficiency, and the SSN tool is handling information concerning merchant ship locations and hazardous materials in particular. The defence community's interest in accessing such data, relating to merchant vessels would be limited to fulfilling its security role (anti-piracy and anti-terrorist measures). In this sense the defence sector is acting as an adjunct to law enforcement in a specific location (international waters) which is traditionally out of range for on-shore law enforcement authorities. The information system is not being used in a typical military context. It might be argued therefore that since this "combating crime" function would be covered by the "freedom, security, justice" competence set out in the TFEU, the opening-up measures set out for the revision of the VTMIS Directive could have a single legal base under TFEU.

[1] Common Information Sharing Environment.

[2] EMSA have developed an integrated maritime monitoring service (MARSURV) to allow EUNAVFOR to track merchant vessels in the High Risk Area off the coast of Somalia.

The sharing of data via SSN with the defence community would therefore be limited to the one-way provision of information. It would not be an exchange, and therefore SSN would not be used to store military data. Likewise, the usage of SSN data by the defence community might be limited to the achievement of objectives under the heading "freedom, justice and security", i.e. protecting merchant ships from criminal activity, and would not entail traditional military objectives.

However, for a full exchange of information the legal base may pose a problem, as the military (Navy) would fall under a different Treaty than the TFEU and therefore under a different legal base.

4 Problem Definition and Objectives

4.1 *Description of the main problem*

It has been necessary to re-analyse the original problem definition and intervention logic, confirmed more than a year ago[1], in the context of on-going rapid technological developments, results of the Legal Analysis and the outcome of the consultations and taking into account the process of Impact Assessment analysis, against the purpose of the directive to (1) enhance maritime safety and (2) efficiency of maritime transport and traffic.

Today, in a policy and technical context that has changed rapidly, the Directive is inadequately utilised in the sense that the safety aspects are well covered but the aspects of efficiency of transport and traffic are underutilised or so perceived. The Reporting Formalities Directive requires the establishment of the single window, which in turn relies upon SafeSeaNet as the data exchange platform to be shared across maritime functions. Clarity on this aspect and how the existing system, as developed, can support that and other processes and developments as required by other Community legislation, are important for the increased utilisation. There is otherwise a risk that the evolving situation will lead towards duplication or even regulatory failure, undermining progress in wider policy initiatives that depend on clear rules and a holistic approach at the Community level toward maritime information gathering and access.

[1] See Annex 1

The problem manifests itself as barriers and limitations for present and future use and users:

Table 4-1: Problem Definitions

PROBLEMS:
P1: Under-utilisation of SafeSeaNet by present users.
P2: Under-utilisation of the SSN capacity for wider functions and users leading to possible regulatory duplication
P3: Non-coherent implementation of the Directive.

To date, Member States have committed significant investments in establishing a European network for exchanging maritime information. The problem now faced is how to harness this technical capability to achieve the objectives of further enhanced (1) maritime safety and (2) maritime transport and traffic efficiency.

4.2 *Problems*

Under-utilisation of SafeSeaNet (P1)

Under-utilisation occurs for a combination of technical and institutional factors. SSN is a socio-technical rather than purely technical system, requiring interaction between people and technology. So far the emphasis has been on establishing the technical side of the SafeSeaNet network, but questions relating to usage are now emerging.

As discussed during consultations, the data being collected is used intensively at national level, but one of the specific benefits of SafeSeaNet, i.e. the ability for MS to share data is under-used so SSN is not exploited to its fullest extent. The number of message transactions between Member States (requests made through the central SSN) is rather low.

There were 409[1] requests for data through the central SafeSeaNet system in 2012, meaning that many Member States do not use the data made available by others. The counts are

[1] Excluding the regular, automatic requests made by some MS (e.g. CY, DK, NO) and by THETIS every 10 min.

based on the numbers obtained from the SSN central system and do not consider the use of the National SSN systems.

The same conclusion can be reached by counting the number of authorities exchanging information through SSN. Although there are 1600 authorities registered in SSN, roughly 284 (18%) have been identified as exchanging information with other Member States. The reasons for this are not entirely clear but much can be attributed to the initial focus on technical aspects and less on operational ones.

Under-utilisation of the SafeSeaNet capacity for wider functions and users (P2)

The problem here may be more of a cultural and perception nature than technical or legal. The perception that SSN is for maritime safety only, limits the awareness of its possibility for use within other functions and in meeting efficiency gains also for maritime transport and traffic.

During consultations these was expressed by some participants in a sentiment that, sharing generates system benefits, but not necessarily direct benefits for the industry or government organisations making the investments. One Member State representative argued that through sharing, some feel that they are giving away their competence and that addressing this would be difficult to incorporate into a directive.

The problem has also become a concern due to the nature of the Reporting Formalities Requirement, which requires the use of a central, secure data exchange. Access to the system for non-VTMIS users has so far been achieved by testing through time-limited pilot projects, organised after discussing in the HLSG.

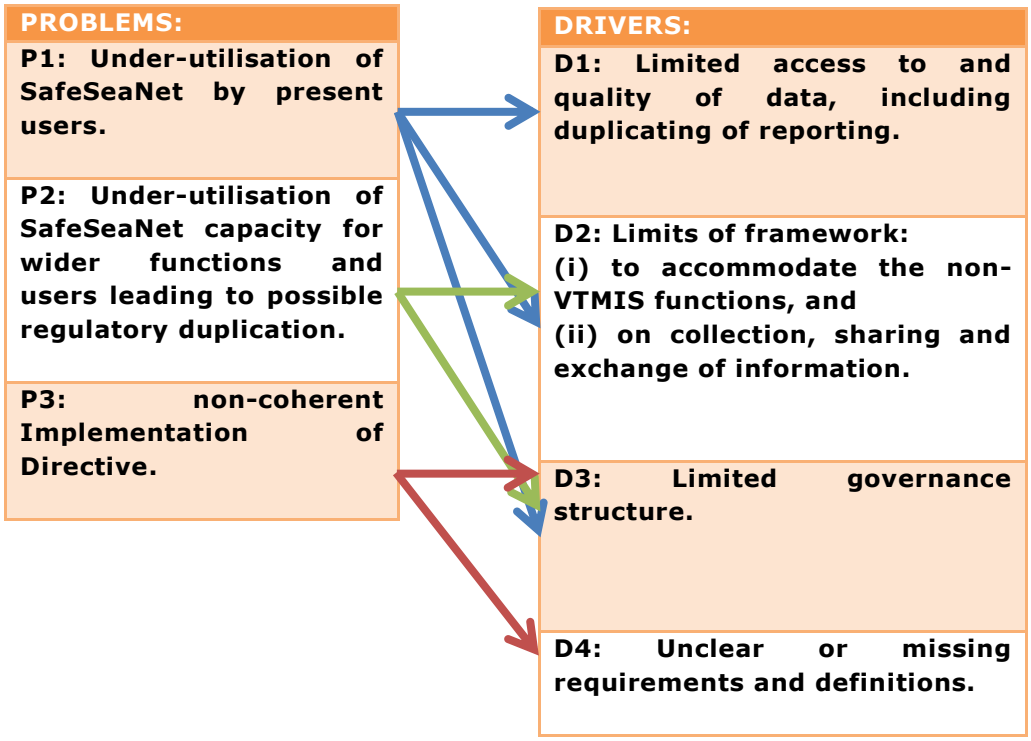
The real problem is here that if the full potential of the SSN is not seen and therefore not utilised, there is a risk that parallel duplicate systems are established at no real added value. That in turn will not be cost efficient and it may also result in different technological solutions with the inherent risk that no uniformity in reporting can be achieved to the detriment of the aim for reducing administrative burden and for avoiding too complex systems.

Non-coherent implementation of the Directive (P3) such as compliance with requirements to exchange operational contact information and lists of exempted ships have a different character, relating mainly to certain issues of clarity and the effectiveness of existing governance structures to improve compliance.

The causes of these problems are identified through the drivers introduced below.

4.3 *Problem Drivers*

Table 4-2: Problems and Underlying Drivers



Driver 1 (D1) Limited access to and quality of data: can be seen as vicious circle, related to the comparative newness of SafeSeaNet. Currently, data access to SafeSeaNet is often limited to the organisations who process the incoming data at a national level, and who depend upon national systems. If the shared data is not being regularly used, there is less pressure to report or solve problems, the data quality may deteriorate, and fewer people will trust it.

SSN is a new system both on a technical and operational level but it has been evolving steadily. Version 1 of SSN was

completed in 2009 and a new version 2 was implemented in 2011 due to the amended Port State Control Directive 2009/16. Since there was little to no prior experience in developing such a system which required collective and harmonised efforts between the Member States and EMSA, the initial focus was mainly on the technical development of the new system.

Both Member States and EMSA therefore paid particular attention to resolving the technical issues and only thereafter to test and stabilise the central and national SSN applications. As a consequence, during the initial steps of the implementation, there was limited attention given to the operational use of the system which is normal for a new system. Benefits are normally visible after testing and familiarisation phases.

Limited access to data

The Directive foresees that SSN data shall be provided to any authority having a function in maritime safety, port and maritime security, marine environmental protection (e.g. pollution prevention) and efficiency of maritime traffic and maritime transport.

The responsibility of managing the SSN access at a national level is delegated to a National Competent Authority (NCA), which is usually the Maritime Administration.

The findings of the VTMIS inspection visits to Member States proved that the level of implementation of the Directive and the management of the access to SSN varies greatly. The relevant national authorities with VTMIS related functions (e.g. Coastal Stations and services like: MRCCs[1], VTS[2], MAS[3], MRS[4]) have not always been granted access to the system nor are they always aware of the data available in SSN. However, much of this relates to organisational aspects and relationships between various actors (and their responsibilities) at national level.

Quality of data

From the stakeholder consultations, especially responses from ports, concerns about data quality and accuracy have been

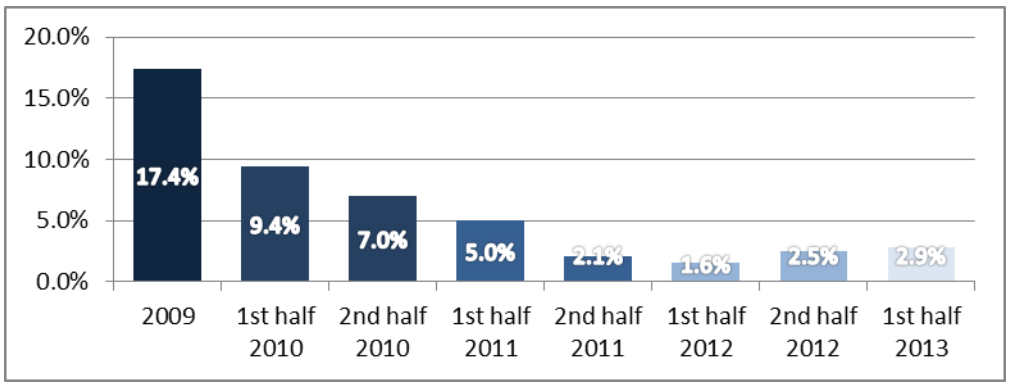
[1] Maritime Rescue Coordination Centre
[2] Vessel Traffic Service
[3] Maritime Assistance Services
[4] Mandatory Reporting Systems

raised. However it could not be established with precision how much of this problem is perception and how much is still real. It must also be noted that much input of the data is coming from industry and some Member States in the consultations pointed out that if the industry inputs low quality data, this problem will persist.

Missing or inaccurate information will lead to a lack of trust in SafeSeaNet and its potential benefits. However, Member States and EMSA are constantly working on this issue, as it is an on-going task, and improvements are being made and not always publicised effectively amongst industry partners. A few of the main data quality indicators are illustrated below.

EMSA monitors data quality through its Maritime Support Services and produces annual reports, circulated amongst Member States. These allow comparisons to be made by time period and by country for different data items. The following graphs show the EU trends for port notifications and HAZMAT information.

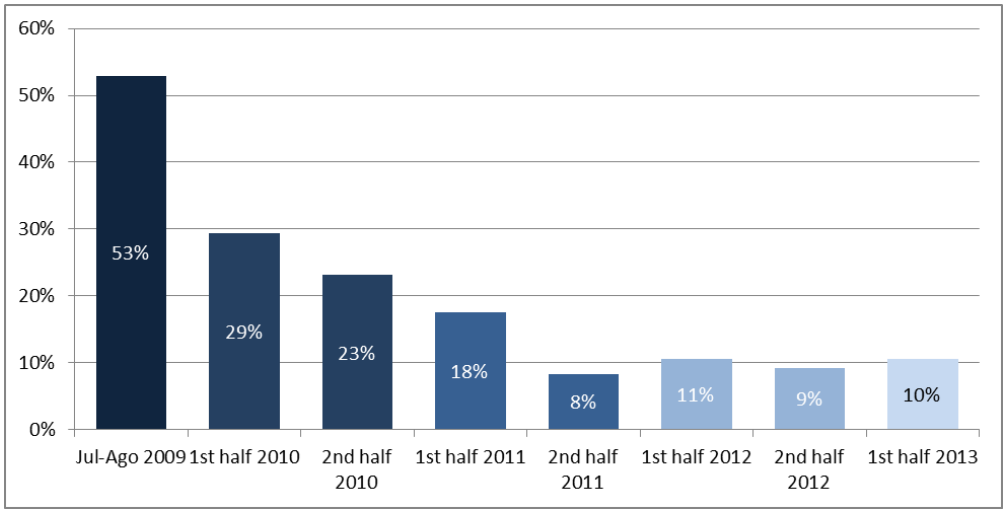
Figure 4-1: Missing Port Notifications by Reporting Period



Source: EMSA

Missing port notifications have dropped rapidly from 17.4% in 2009 to around 2-3% by 2012.

Figure 4-2: Missing HAZMAT Information, by Reporting Period



Source: EMSA

Instances of missing HAZMAT (information about hazardous cargo) have also fallen rapidly since 2009, but they are still at around 10%. However, many Member States have achieved rates of 5% or less, having been at 25% or higher two years earlier, so further improvements are feasible simply by adopting current best practice across all Member States.

Even when the information is provided, the HAZMAT data is not always accurate (in over 70% of cases, the classification of dangerous goods was either missing or incorrect). The Table below, given as an example, shows the results of a survey EMSA carried out on the HAZMAT message.

Table 4-3: Status of HAZMAT reporting over one month (Jan 2013)

Attribute	Incorrect	Missing	N.A.
DG Classification	34%	43%	-
Technical name	22%	6%	-
UN Number	7%	8%	46%
IMO Hazard Class	12%	10%	44%
Quantity	9%	5%	-
Location on board	24%	46%	-

Source: EMSA

Following some accidents, the same questions were raised about the lack of information available concerning the HAZMAT

data. In other cases the reports were not sent at all or were provided with delay and not within the deadlines set by the VTMIS Directive.

The trend in eliminating inaccuracy is therefore positive and this should be encouraged. It may not be necessary at this point to seek further data quality improvements through legislative measures but the issue of data quality needs to be addressed in order for reliable information to be available to Member States especially in cases of incidents or accidents. This should be considered as a permanent task where improvements can still be made.

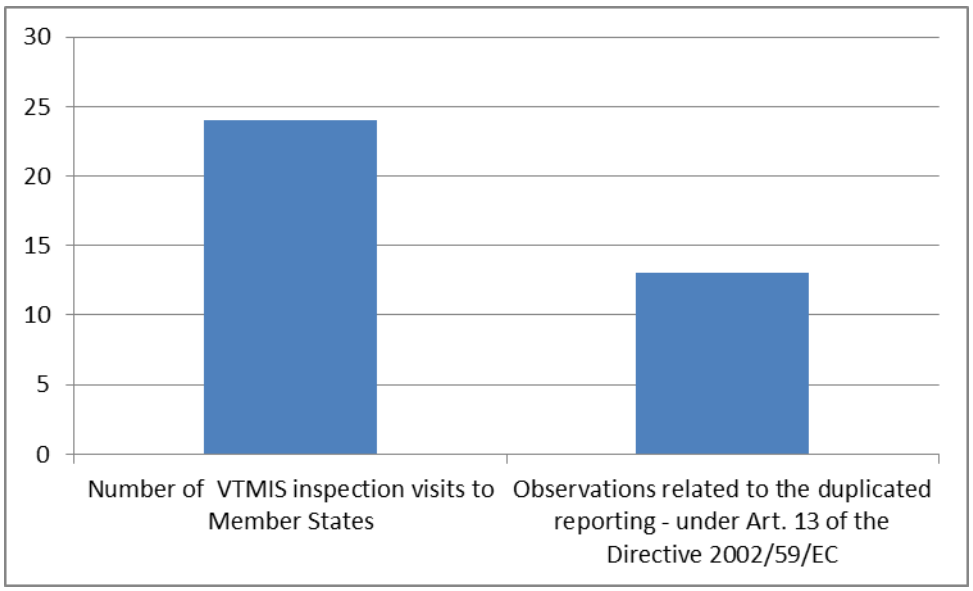
Duplication of reporting

As stated above, there is limited exchange of data between Member States and therefore quite often the industry is obliged to report the same data multiple times.

A clear example of duplicated reporting is where the same information is reported separately to the port of departure and the port of arrival. SafeSeaNet has the technical capacity to forward these messages at the point of departure to the destination port, therefore removing the excess reporting. However, there are liability issues which need to be addressed involving definition of responsibilities between the port of departure and destination. The same issue was also raised for Mandatory Reporting systems reports (MRS reports) where the same information is notified from ships to Member States and from Member States to SSN.

Such observations on duplicate reporting were confirmed during the inspection visits to Member States, with respect to the implementation of Directive 2002/59/EC. While it is not the biggest problem encountered, it is one that needs attention due to its potential to ease the administrative burden on industry. It should therefore be noted that this issue has started to be addressed at the technical level, following the visit to all MS, and that the implementation of SSN version 3 (by June 2015) will improve, from a technical point of view, the re-use of HAZMAT and MRS data.

Figure 4-3: Number of observations related to the duplicated Hazmat reporting



Source: EMSA

Driver 2 (D2) Limits of the framework concerns the presence of actual or perceived barriers:

(i) to accommodating a wider range of functions outside the VTMIS users and
(ii) on collection, sharing and exchange of information.

D2, part (i): Limits in accommodating a wider range of functions outside VTMIS community

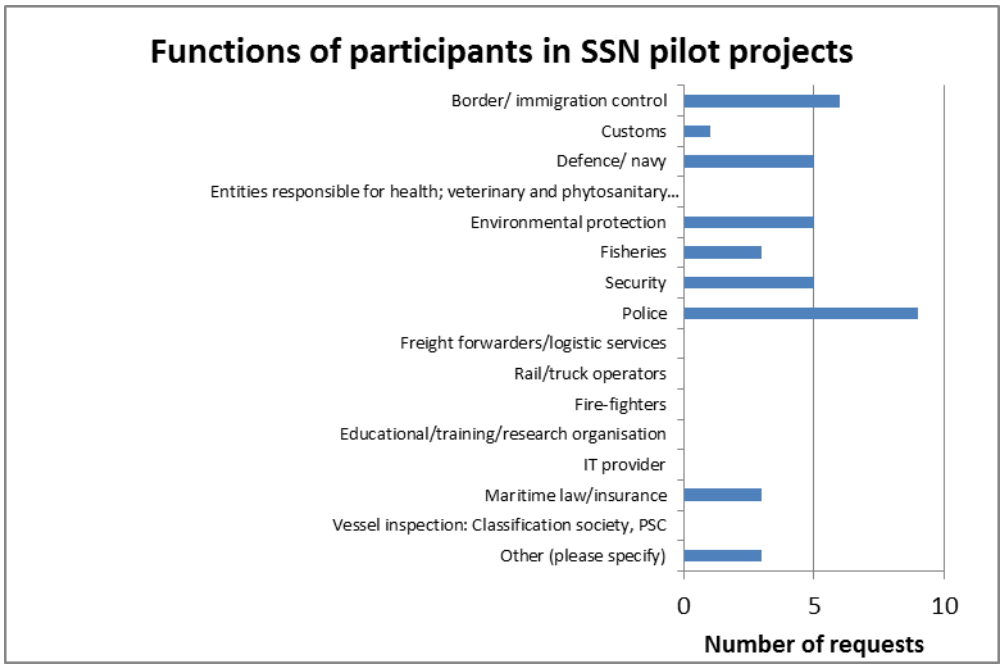
Access to SSN data by any authority which has a VTMIS-related function is already stated in the Directive. It is important to re-emphasise that while the Directive includes maritime safety, port and maritime security, marine environmental protection (e.g. pollution prevention) and efficiency of maritime traffic and maritime transport, the general perception is that access to data is limited to the traditional maritime safety VTMIS users.

Access to authorities with non-VTMIS function is not prohibited by the current legal framework, but there is the perception that the Directive does not grant them access. In order to overcome this perception issue on a temporary basis, the SSN HLSG agreed in 2010 to open SSN to other Member State Authorities and EU institutions with non-VTMIS functions, under certain conditions.

The legal analysis in paragraph 3.2 confirms that the SSN system within the VTMIS Directive does not prevent the accommodation of a wide range of functions. Therefore, the problem can be related to the lack of a common interpretation of the legal position and addressed through measures to improve awareness. Lack of clarity has led to a perceived problem.

The multiple requests received (see Figure 4-4) to access and make use of SSN and the wide variety of organisations and professionals (e.g. the Bonn Agreement or EU institutions like EUROSTAT, and researchers involved in EU research projects) requesting access to SSN's historical AIS data, provide clear evidence that the system can serve the needs of a wider range of functions, and that there is a critical mass of users interested in the system.

Figure 4-4: Functions of participants in SSN pilot projects



Source: EMSA

D2, part (ii): Limits on the collection, sharing and exchange of information.

From a technical perspective, the VTMIS Directive was designed to deal mainly with data streams from terrestrial AIS, MRS, incident reports, HAZMATs, and pre-arrival information and did not sufficiently anticipate other (now existing) technological developments or new sources of data. This means that

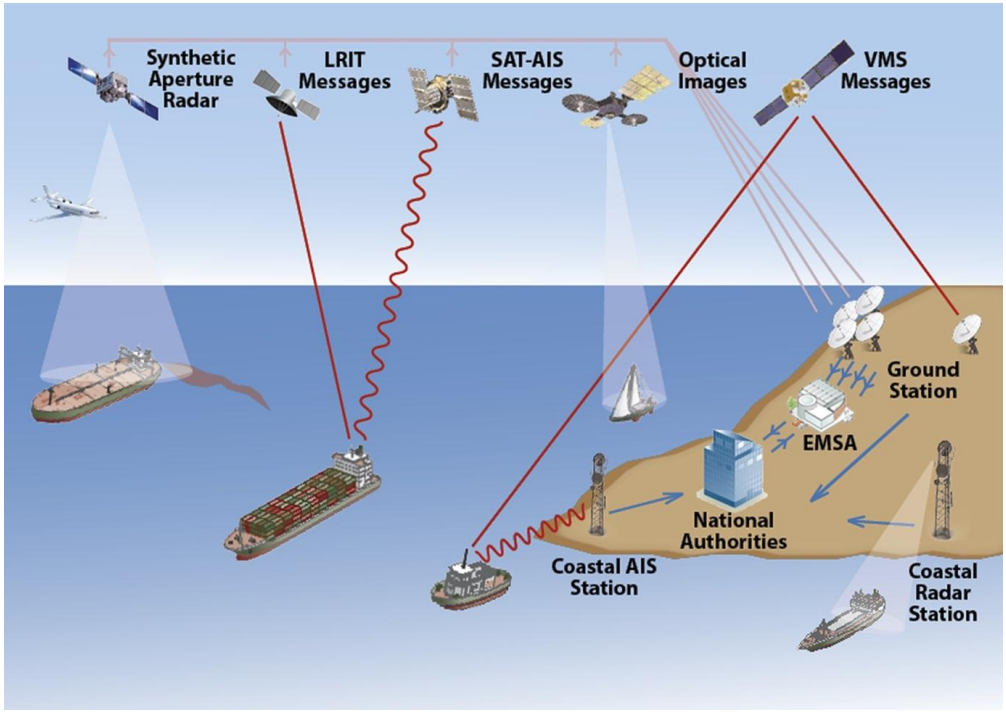
currently the Directive does not provide for the inclusion of other vessel monitoring technology (Satellite AIS, VMS, radar, satellite images etc.) and systems such as CleanSeaNet.

There is a clear advantage by including new technologies and sources of data to enable a more complete maritime picture for maritime safety, port and maritime security, marine environmental protection and efficiency of maritime traffic and maritime transport purposes, as well as for users (with other functions) interests and purposes.

Within this context it has to be noted that the ownership and distribution of data and information from new and emerging technologies is inevitably of a different nature from the data currently present in SSN. More specifically, the notion of data types between what is generated by the new and emerging technologies (e.g. VMS, Satellite-AIS, and satellite imagery) is of a different nature to the one presently available in SSN.

Developments within the last few years, including various pilot projects and services have so far pointed to a clear advantage of integrating new technologies and sources of data to enable a more complete maritime picture, for improved maritime safety, security pollution prevention operations, for all user communities having a function within this framework. An interoperable platform bringing together the existing monitoring and tracking systems used for maritime safety, security and protection of the marine environment (including the detection of AIS signals from satellite) enables the compilation of comprehensive information on ship positions, dangerous cargo, pollution as well as other key data. This in turn provides the delivery of combined and complete maritime information to both the VTMIS community and to other related maritime sectors, and as such paves the way for the implementation of a wide range of "integrated maritime services", building on the SSN system.

Figure 4-5: IMDatE: Integrated Maritime Data Environment



Source: EMSA

In 2010, EMSA launched an integration project (called IMDatE – Integrated Maritime Data Environment) with the objective of developing a platform to bring together data, information and services from the existing EMSA hosted monitoring and tracking systems. These include the applications implemented and used for maritime safety, security and protection of the marine environment (SSN, CleanSeaNet, the EU LRIT CDC and THETIS), as well as the integration of additional and complementary data streams such as Satellite AIS, satellite vessel detection, and satellite imagery and perhaps other sources of data. IMDatE is not a new system but a flexible and configurable environment, providing an interface between the existing systems not replacing any of the existing systems, with SSN at the core.

Therefore, IMDatE is a platform which provides services based on the integration of different maritime datasets. This project has been developed to leverage the benefits of the existing systems and to propose a new concept of integrated services, one which can further enhance cross-sectoral and cross-border requirements.

The problem here is that these recent, rather rapid technological advancements are not sufficiently reflected in the

Directive. Even though technically possible and already in use through various bilateral projects, there is a need to more firmly reflect and include the current situation in the Directive. There is otherwise a risk that the cost effectiveness achieved by creating the integrated maritime picture is lost and that parallel costly alternative or duplicate 'pictures' are created.

Administrations within the maritime sectors may benefit from the implementation of an interoperable approach towards the setting up of integrated maritime services (i.e. services built on the integration of multiple and different data sets for the benefit of the safety and security at sea and the protection of the marine environment). The development of platforms using interoperable frameworks based on agreed standards aims at limiting the need to implement multiple ad-hoc solutions at MS level, thus eventually reducing costs.

There is a further potential efficiency gain with the integrated use of the various systems in that it may reduce the need for introducing additional reporting requirements upon industry, meaning potentially lower costs. The effective combination of information onto one screen provides an aggregate information mass which is bigger than its individual parts.

Driver 3 (D3): Limited Governance structure: There is also an issue in that the current governance model and principles are geared towards the SSN system as such and while the integrated maritime picture uses SSN as a base, the services it can provide require an updated mandate for proper governance.

Evolution within SafeSeaNet, including the developments in both the supply of data streams and in the need to support data demands from a wider user group, has also pointed towards issues of efficiency within the current governance structures.

All the groups established to govern the existing maritime information systems are sector driven, even when the same National Competent Authority (NCA) is appointed for more than one system.

There is a risk of duplication and overlapping of tasks and decisions and the question is raised of how the governance may

be structured in the future to ensure effectiveness and harmonisation, without making the system overly bureaucratic.

In addition, there is currently a clear inclination of dealing with systems instead of services. A system is a "set of interacting or interdependent software components which rely on hardware and network infrastructure", answering the question "how can you make it for me?". A service, on the other hand, is a means of delivering value to users by facilitating outcomes they want to achieve without the ownership of specific costs", i.e. "what can you do for me?". Within this context it is recommended to balance "systems" and "services" and to focus the governance process on the operational needs, more than on the technical implementation details.

It is also important to note that the model governing the data access of the potential new and emerging technological platforms (e.g. Satellite-AIS) might be different from the one currently adopted, and as such the overall governance structure should reflect this.

To avoid developing ad-hoc strategies (which may lead to a waste of resources, funds and efforts), the Directive should also include the governance principles for administering and regulating the integrated maritime services and not 'per se' only systems.

Driver 4 (D4): Unclear or missing requirements and definitions: Problems of implementation or compliance with the Directive are mainly linked to unclear definitions. It is necessary here to recall that the legal form of a Directive leaves certain room for implementation to Member States but that in the course of the consultations some issues have been brought up.

The definition of the "area of responsibility" was evoked during the stakeholder consultations as an important issue to clarify. Some experts requested more clarification about the meaning of these areas and the associated obligations for the (VTS) operators in the Member States.

For example the VTMIS Directive does not clearly define the meaning of the term "efficient monitoring" which is interpreted in different ways.

A further example relates to exemptions. Article 15 of the Directive states that Member States may exempt scheduled services performed between ports located on their territory for 24h pre-arrival and hazmat information (articles 4 and 13). It requires Member States to communicate to the Commission a list of companies and ships to which an exemption has been granted under this article, as well as any further updates to that list. Although article 15 forms a legal basis for the process by which this information is reported to the Commission, the type of information and the process by which it is sent to the Commission is not defined.

There are clear benefits for the Member State SSN users to have access to information on the exemptions granted by the Member States to avoid creating wrong assessments of the situation e.g. to know if the vessel has been exempt or simply failed to report.

Another example or missing/unclear requirement relates to the exchange of information on incident reports between SSN and the Port State Control (PSC) database THETIS. Article 16 of the PSC Directive (as amended by the Directive 2009/17) defines the situations for considering ships as posing a potential risk. For those ships, incident reports are provided. Considering the potential interest and the Annex I part II, 2A and 2 B of Directive 2009/16/EC, such information might be of interest to Port State Control Officers and it could be envisaged to provide it to THETIS. Directive 2002/59/EC should then reflect this exchange.

Without more accurate guidance, there is a risk of non-uniform implementation, as also pointed to in the consultations and in the Horizontal Analysis. However, the dynamics in the structure of the Directive and its governance allows such issues to be addressed in full cooperation between MS and the Commission. A good example is the requirement in Article 20.3 and the now established group on Places of Refuge looking into related implementation issues taking a bottom up approach.

4.4 *General, Specific and Operational Objectives*

As described, there has been rapid progress since SafeSeaNet was established, and the original emphasis upon the need to engineer an information system needs to be balanced by reinforcing institutional aspects related to achieving greater usage, integration and compliance. Long-term, the Reporting Formalities Directive offers an opportunity to realise a more holistic approach to handling maritime information.

Such achievements in streamlining reporting by industry to government will contribute towards a reduction in administrative burden and duplicated reporting, but while these changes are being prepared it is necessary to remove, as far as possible, the anomalies related to the VTMIS Directive which have arisen through the evolution of SafeSeaNet. Thus, a key objective for SafeSeaNet is to prepare the way for the Reporting Formalities Directive, and to be able to respond to the future challenges that this will bring.

4.4.1 *General Objective*

The high-level purpose and objectives for the VTMIS Directive have not changed since the first draft of the Directive. SafeSeaNet, now established within those objectives, maintains the aim of contributing to maritime safety and efficiency. The maritime safety aim is served through the provision of information to the authorities who need it. Efficiency is served through the ability of the system to support maritime traffic and transport monitoring for involved authorities and aims at simplifying reporting by industry, and therefore to reduce administrative burden.

On this basis, the general objective for the revision is stated as follows:

General Objective: To improve maritime traffic and transport information sharing, monitoring and surveillance to increase maritime safety, security, environment protection and transport efficiency through streamlined legislative basis to contribute to enhanced maritime monitoring by relevant authorities and to reduction of the administrative burden for stakeholders in the maritime sector.

This follows directly from the 2011 Transport White Paper, paragraph 39, p11:

> *"Setting the framework for safe transport is essential for the European citizen. .. The Vessel Traffic Monitoring and Information System SafeSeaNet will become the core of all relevant maritime information tools supporting maritime transport safety and security, as well as the protection of the environment from ship-source pollution..."*

4.4.2 *Specific Objectives*

Specific objectives are directly related to the three main problems. Like the general objective, they do not radically depart from the original objectives of the Directive, but add emphasis to certain objectives related to the use of the system. Thus they aim to strengthen aspects which were always present, but would have been of secondary importance until the technical implementation was achieved.

Table 4-4: Specific Objectives

PROBLEMS:	SPECIFIC OBJECTIVES:
P1: Under-utilisation of SafeSeaNet by present users.	**SO1: Ensure better utilisation of the SSN by present users.**
P2: Under-utilisation of SafeSeaNet capacity for wider functions and users leading to possible regulatory duplication.	**SO2: Broadening the use of an integrated maritime information system to guarantee interoperability of systems, avoid duplication and ensure efficient use of data and services.**
P3: non-coherent Implementation of Directive.	**SO3: Enhance compliance with the Directive.**

Specific Objective 1 (SO1): is to ensure better utilisation of the SSN by present users. It directly addresses P1.

Specific Objective 2 (SO2): addresses the perceived problem of scope, both technical and across user groups. First, it is to provide a framework for an integrated maritime information system, which guarantees interoperability of different systems. In this way, an integrated information service would be envisaged. Second, it aims to avoid duplication of systems and ensure efficient use of integrated maritime data and services.

Specific Objective 3 (SO3): is to enhance compliance with or application of the Directive, and thus to avoid non-coherent and non-compliant implementation by different Member States.

4.4.3 Operational Objectives

The areas where new or reinforced measures may be expected to have an impact are set out in the operational objectives. They are directed towards solving the underlying problems described as problem drivers.

Table 4-5: Operational Objectives

DRIVERS:	Operational Objectives:
D1: Limited access to and quality of data, including duplicating of reporting.	**OO 1: Ensure the data quality and raise the effectiveness of the SSN by enhancing the operational advantages of the system, including promotion and training.**
D2: Limits of framework: (i) to accommodate the non-VTMIS functions, and (ii) on collection, sharing and exchange of information.	**OO 2: accommodate non-VTMIS functions and current and future technological developments in the Dir**
D3: Limited governance structure.	**OO 3: Set up the governance structure to support the new and integrated system**
D4: Unclear or missing requirements and definitions.	**OO 4: Clarify certain provisions and definitions of the Directive.**

Operational Objective 1: Ensure the data quality and raise the effectiveness of the SSN by enhancing the operational advantages of the system, including promotion and training. This implies that there needs to be a continuation of the effort to increase awareness about SafeSeaNet and the importance of the data it contains.

Operational Objective 2: There is a need to accommodate non-VTMIS functions to the Directive and provide access to relevant authorities. The aim in this case is to facilitate access to existing data streams for non-VTMIS authorities, harnessing existing legal provisions, and the existing system of granting access rights. It is important to remember that the non-VTMIS functions are already allowed to use SSN (see the Legal Analysis), but a stronger awareness is needed and streamlining the different legislations would help to strengthen the situation.

There is also a need to accommodate the Directive to handle cross-sectoral and cross-border sharing and exchange of information and to accommodate Directive to harness the current and future technological developments (like LRIT, CSN, SAT-AIS etc). SafeSeaNet should be future-proofed against changes of a technical nature, allowing it to become an integrated tool for maritime data, carrying multiple data streams for multiple user groups.

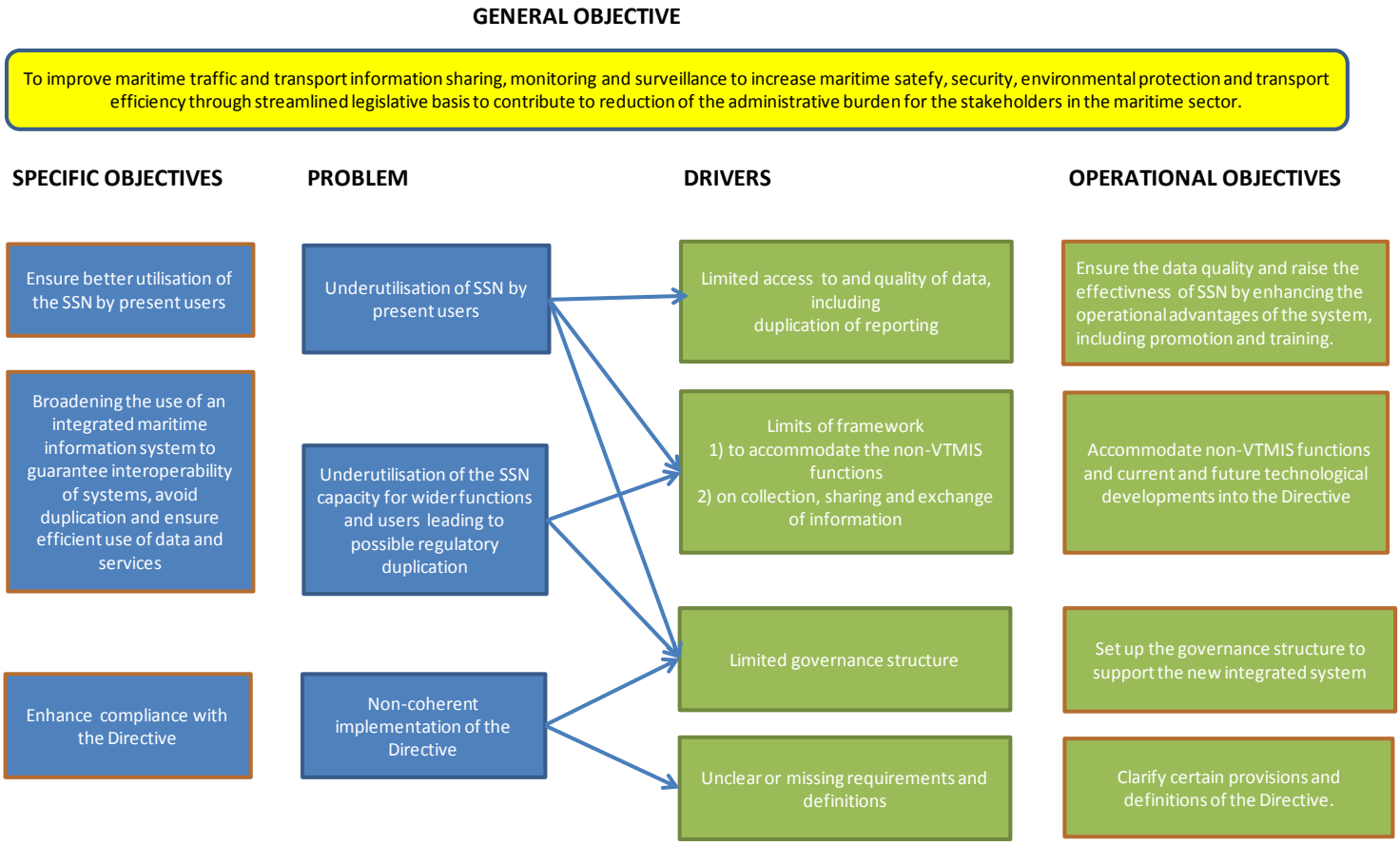
Operational Objective 3: Set up the governance structure to support the integrated system (both, the information tools and information services). The governance structure should be able to evolve to be representative of a more integrated framework as set out under OO2.

Operational Objective 4: Clarify certain provisions and definitions of the Directive. This would apply in cases where compliance needs to be reinforced.

4.5 *Summary of Problem Tree*

A summary of problems, drivers and objectives is set out below:

Figure 4-6: Problem Tree



5 Policy Options

5.1 *Development of options following consultation*

During consultation a roadmap was presented to stakeholders containing a range of seven policy options; no-change, soft law, abrogation, minimum amendment, medium amendment, maximum amendment, and a combination. When discussed, the reactions from stakeholders have been constructive. SafeSeaNet is seen as a relatively young system in a technical area which is evolving quickly, and stakeholders need to build up experience in order to harness it to the full.

Timing of any measures will be important. Currently, stakeholders are focusing efforts on the implementation of the Reporting Formalities Directive which has a deadline set for 1st June 2015:

> ***Directive 2010/65/EU, Art 5: Electronic transmission of data***
> *1. Member States shall accept the fulfilment of reporting formalities in electronic format and their transmission via a single window as soon as possible and in any case no later than 1 June 2015.*

This single window, linking SafeSeaNet, e-Customs and other electronic systems, shall be the place where, in accordance with this Directive, all information is reported once and made available to various competent authorities and the Member States.

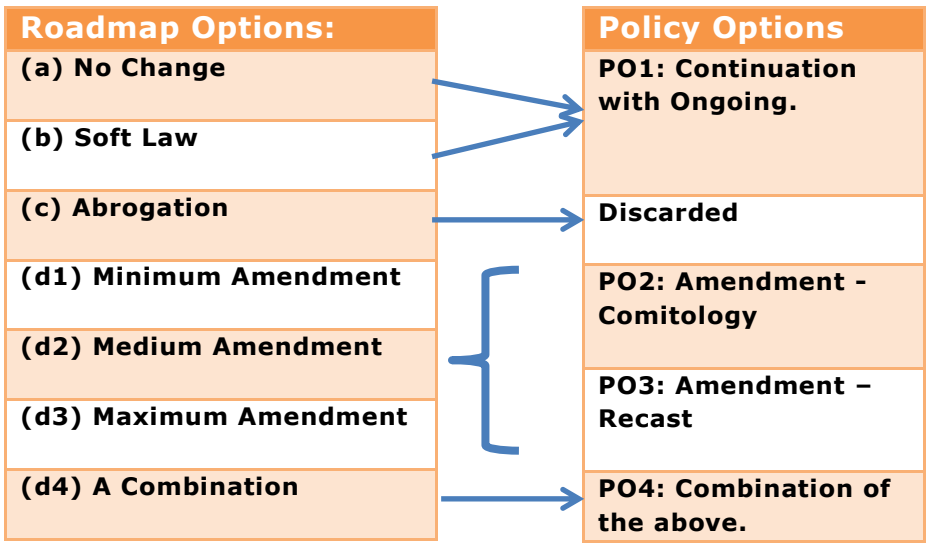
In the immediate future, it is necessary that any actions taken in relation to SafeSeaNet are not interfering or working to the detriment of this particular objective, but rather supporting it.

In these circumstances, it is clearly not an option any more to follow a course leading to abrogation of the Directive. Consultations clearly show this as it would not improve the current situation and possibly make it worse as it risks wasting the investments already made and efforts spent in the harmonisation towards an interoperable cost efficient system. In the absence of the Directive there is a clear risk of regulatory failure for a number of related policies in the

maritime safety and security functions, and also further afield. **Therefore abrogation will not be considered any further in the study.**

This timing issue, as well as the legal analysis presented in this document, changes the remaining set of available options. In particular, it is now necessary to distinguish between amendments to the Directive by comitology (implementation) and amendments involving a recast or re-structuring of the Directive.

We therefore arrive at the following set of options:



Under the original soft law option, which includes the promotion of best practice, training and seminars, it would be envisaged that further technical support would be provided to Member States, and that pilot projects would be continued. In practice therefore, option (a) no change, and option (b) soft law can be treated as one option, since the Directive does not prevent these actions occurring. Soft law, as defined, is indeed a continuation of existing initiatives, requiring no change to the Directive.

5.2 Proposed Policy Options

Taking the initial indicated policy options (see Annex 1) into account, but considering developments since they were elaborated , what emerges are three main possible policy options:

Policy Option 1(baseline):

PO 1: continued implementation (no policy change) and promotion of best practices, exchange of experience and technical support - *continuation of all on-going actions.*

This means the continuation with the operational implementation improvements and refinement of the systems through the HLSG and SSN group with full involvement of MS. This option would then allow all on-going projects, (see Table 1-1) providing input to the further development, to finalise and to be evaluated.

It would not involve any legislative measures or comitology, nor change the Governance in any way. It would rely on the existing dynamics in the Directive with the pros and cons this has.

Policy Option 2:

PO 2 – amendment of the Directive by comitology and adjustment of the Governance structure.

This option would aim to do everything possible in harnessing technological developments without affecting the current use of SSN for the user functions and core maritime safety use. It would introduce the maritime integrated services but not change any balance of responsibility. As such it would allow the use of the system possibilities in an efficient way to the benefit of other functions, thereby reducing cost and duplication of effort, reflecting the demand for cross-fertilization in the EMSA Reg. Art 2.4(d), and putting the results into practice.

Effectively it would add substance to the objective of making a contribution to the efficiency of maritime transport and traffic, as required by the Directive. It would enable all aspects related to the vessel, its goods and/or passengers e.g. customs, border control, law enforcement and environment protection, thereby becoming a streamlined tool for supporting the implementation of related policies (e.g. Blue Belt). In this way it would aim to achieve the aim in the 2011 Transport White Paper (*action*

point 18) for SSN to become the core of all relevant maritime information tools.

> **2011 Transport White paper, Action Point 18:**
> *18. Safer shipping: Develop SafeSeaNet into the core system for all relevant maritime information tools needed to support maritime safety and security and the protection of the marine environment from ship-source pollution.*

This would mean preparing a proposal for a limited modification through comitology of Directive 2002/59 to clarify the legal text so as to harness the technological advancements to serve the various current maritime users and functions and to allow, via the HLSG, for integrated maritime services to be provided subject to certain conditions, access rights and respecting data protection rules.

The option would not mean making changes in the legislation that would necessitate the ordinary decision-making procedure, but it could include a number of changes through comitology to update, adjust and capture the development stemming from the various technical projects, best practices and technical support, coupled with training.

PO2 is set out as a package containing the following measures:

Measure 1: Revision of Annex III to the Directive to better reflect the current situation:

- Drawing from the experience gained in operating and using the SSN as a system and platform for the further enrichment of the core information.
- Building on the core and reflecting the technological advancements in the field (e.g. LRIT, CSN and Satellite-AIS) as well as the requirements established by other EU legal instruments, including the Directive on reporting formalities. The measure would enable communication within and between existing systems (interconnection and interoperability) for the provision of integrated maritime services (harnessing the IMDatE experience), thereby also guaranteeing better legal certainty and clarity of the system, SSN, and the services, in turn avoiding the risk of duplicate systems and avoiding extra cost, where there is no added value .

Measure 2: Revision of the Commission Decision setting up the SSN HLSG. Adjustments and clarification of the governance structure would be made, including a name change to the High Level Steering Group on the Union maritime information and exchange system (SSN). There would be a clarification of the status of technical/operational sub-groups under the HLSG and a possibility of launching ad-hoc sub-groups. All sub-groups would be drawn together under the HLSG to become more coordinated and efficient both in the Commission and in Member States and for both system and services aspects.

Measure 3: Inclusion of reporting from the Place of Refuge (PoR) group to the HLSG with relation to COSS.

Measure 4: The consideration of linking the EU Coast Guard (EUCG) Forum to either the HLSG and/or the PoR group.

Measure 5: Launching a pilot project to work out how the information contained in SSN could be used for supporting in an efficient way the collecting of data for maritime statistics purposes (ESTAT initiative), thereby reducing that administrative burden on MS and at the same time improving reliability, timeliness and accuracy of maritime statistics.

Measure 6: EMSA to continue providing training (train the trainer) in the rolling out of SSN v3 and on the other linked systems (i.e. EU LRIT DC, CSN, IMDATE), thereby contributing to a continued process of cultural change in the use and operational practice surrounding SSN, thereby addressing the under-utilisation and contributing to data quality improvements through enhanced understanding of the reporting process.

Policy Option 3

PO 3 – Full recast and restructuring

This option includes all in Option 2 as well as the measures package below, and would involve a recast and restructuring of the Directive.

Measure 7: Change the name of the Directive to better reflect the developments within the application and wider policy

environments to the "Directive on the Union Maritime Information and Exchange System".

Measure 8: Recast the existing legislative framework and restructure it. An option to be considered would be to remove the chapter (Title III) which includes provisions for the accommodation of ships in need of assistance, and to refine these elements in new EU Legislation. The new structure will be recast to meet current and future technological advancements in the field as well as the requirements established by other EU legal instruments.

Measure 9: Align certain articles with the purpose in Article 1. Make clarifications and additional references to SSN as the system to be used for information exchange.

Measure 10: Restructure current Titles I, II and the "Hazardous parts" of Title III into a new Title "Vessel Traffic Monitoring and Information Exchange".

Measure 11: Include and clarify Integrated Maritime Services (IMDatE), supporting maritime monitoring, within new title III

Measure 12: Make the purpose of the Directive more explicit and clarify the scope of SSN within that purpose (align with current text in Annex III);

Measure 13: Specify use and access conditions for the SafeSeaNet system and services, in a new separate annex.

Measure 14: Clarify if and when AIS transponders can be switched off.

Measure 15: Consider a legal provision regarding cooperation of EU Coast Guard functions (in the same way as is now the case in article 20.3 for the Places of Refuge) supporting exchange of expertise and improvement of operational practical measures.

Measure 16: Improve the quality of initial data input by making the ship-owner responsible for data accuracy, instead of or together with the Master, and link it to the possible withdrawal of the International Safety Management (ISM) certificate if there is error or deliberate failure.

Measure 17: Further refine the governance structure in addition to measures contained in Policy Option 2, seeking closer coordination with or consider merger with eMS. Clarify links with the EMSA Administrative Board, PMoU and EQUASIS.
Measure 18: Clarify the provision for certain data to be fed into EQUASIS (and how) and thereby to be made available to ship owners and the public.

Policy Option 4

PO 4 – Combination of the above.

This fourth option takes the timing issue further into account and implies that the previous options would be combined in a logical sequence, i.e. first amendment and then recast.

6 Analysis of Impacts

SafeSeaNet is an IT tool for exchanging data. It was developed to assist authorities and contribute in the areas of maritime safety and in the efficiency of maritime transport and traffic. Timely, accurate and relevant data can assist experienced operators in the detection of risk factors and in the co-ordination of responses in emergency situations. Pooling data and sharing it can aid efficiency by removing duplication.

During consultation, one expert described a parallel between maritime surveillance and the nuclear disaster at Fukushima in Japan, implying that one is attempting to detect extremely rare events or combinations of circumstances which could have catastrophic and irreversible consequences. SSN was developed as a real-time information tool that can be used to identify vessels that pose risk. At an operational level, SSN data is combined with other information which can be used by experienced operators to identify circumstances of high risk.

As background to this impact assessment, it is necessary to bear in mind this asymmetry of risk. It is impossible to state in advance how good an information system needs to be to deliver an acceptable level of risk, or to quantify these terms.

SafeSeaNet was developed as part of a package of measures aimed at preventing (reducing) accidents with possible major ecological disasters such as those caused by the Erika and Prestige oil spills in 1999 and 2002, by increasing the information available about vessels and their cargo when sailing in European waters. This is what led to a system of vessel traffic monitoring. However, information tools alone cannot prevent such events, but they can assist authorities in their monitoring task by alerting them to unusual or illegal activities, and they can play a role in damage limitation exercises. Better rates of detection of irregular or illegal behaviour also may act as a deterrent.

6.1 *Scale of the problem*

6.1.1 *Accident and Pollution Prevention*

To indicate the scale of the problem in the most extreme cases, the total costs of the Erika and Prestige disasters were each estimated at more than €1bn.

Issues of communication and the need for international co-operation and sharing of responsibility were abundant. In November 2002, The Economist reported about the Prestige incident:

> *"The ship, carrying 77,000 tonnes of heavy oil, was bound from Latvia to Singapore when it ran into heavy weather on November 11th and on the 13th sent out a distress call saying the hull had ruptured and oil was leaking. […] several thousand tonnes of oil that had already escaped were polluting the Spanish coast, forcing fishermen, lobstermen and gatherers of shellfish to stay at home."*

Apart from the risks posed by carrying heavy oil close to the coast in bad weather, the incident also points to the additional factors introduced by poor communication and unclear responsibilities and procedures which may have amplified the impact.

Since the Prestige disaster in 2002, there have been no accidents of a similar magnitude in Europe, but EMSA nevertheless records between 600 and 800 maritime accidents involving between 50 and 80 losses of life each year. Five cases of spills of over 100 tonnes were reported.

Table 6-1: Maritime Accidents in EU Waters

	2007	2008	2009	2010
Sinkings	55	61	28	32
Collisions/Contacts	304	308	292	288
Groundings	197	217	177	143
Fires/Explosions	91	89	67	83
Other	115	79	62	98
TOTAL	762	754	626	644

Source: EMSA, Maritime Accident Review, 2010

SafeSeaNet monitors the positions of approximately 20,000 vessels which are operating in and around European waters at any given time. It identifies ships carrying hazardous materials, and it allows alerts reported by one Member State to be transmitted to others.

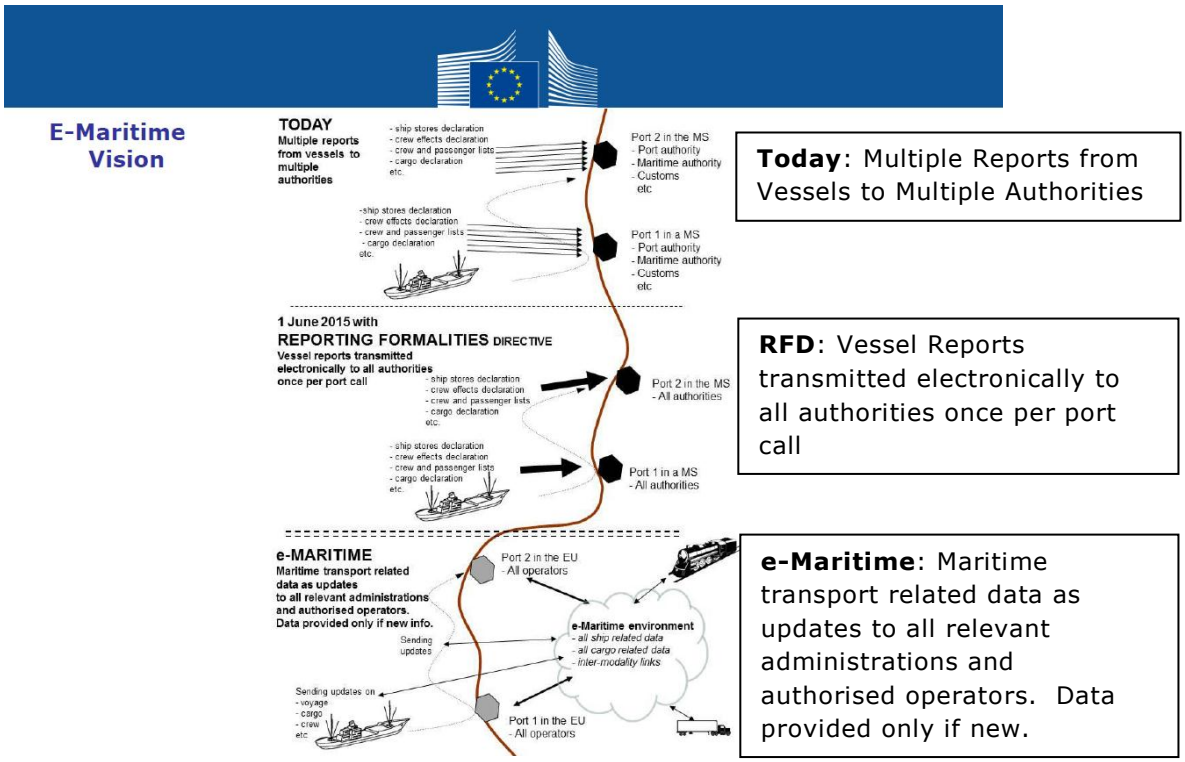
It is difficult, and indeed, unwise to attempt a quantification of the relationship between the development and use of SSN and the reduction of accidents. It is only possible to demonstrate that there is, as shown above, an ever-present degree of risk created by heavy maritime traffic, a persistent level of accidents (644 accidents in 2010), a regular occurrence of fatalities (61 in 2010), and a non-zero risk of extreme situations which can result in substantial ecological and economic damage.

For the impact analysis it is therefore not possible to include an estimation of impact of the proposed measures, which mainly relate to institutional practices in relation to the use of an information tool, on the number of accidents. Instead it must be simply stated that sharing accurate information amongst the responsible authorities is in proportion to the scale of the wider issue. Good information and access thereof is a basic prerequisite for managing risk and deterring bad practice and it does not go beyond what is necessary to achieve the general objective.

6.1.2 *Excessive Administrative Burden*

Whereas the first clause of the General Objective refers to the goal of improving information on maritime traffic in order to improve safety, the second part refers to the goal of reducing administrative burden. The proposed measures set out in this document do not directly impact the reporting requirements contained within the VTMIS Directive to any significant extent. However, it is necessary to consider the wider role to be played by SSN within the implementation of the Reporting Formalities Directive (RFD) and the e-Maritime concept.

Figure 6-1: e-Maritime Vision



Source: DG-MOVE, EPCSA Conference, 11 June 2013.

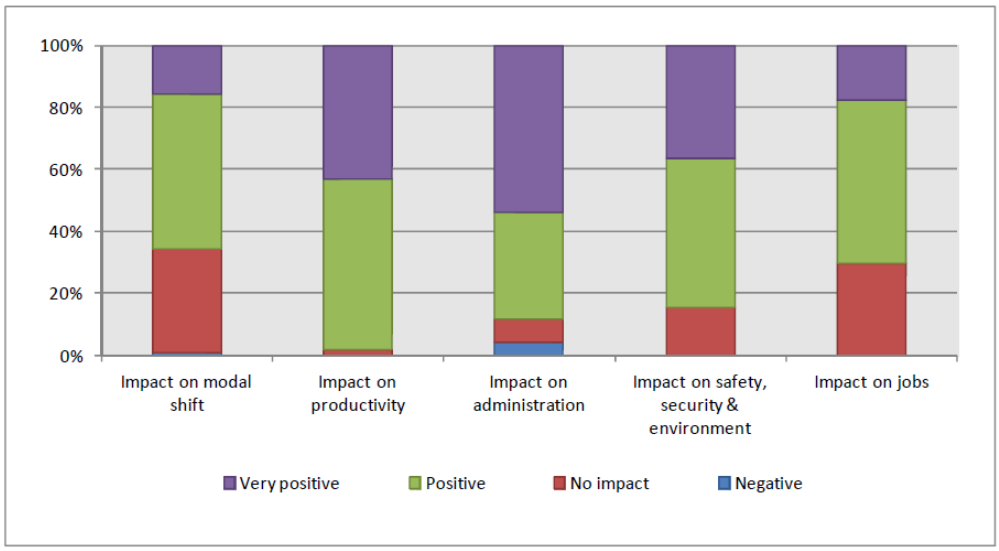
Today, vessels are required to report many different streams of information for different authorities in each port of call. Information may be transmitted by a number of different means, and not necessarily via electronic transmission. Much of the information being transmitted, such as details of crew members, is largely static; it does not change from one port call to another, and also the information is known by shore-side authorities.

When a ship departs from a port, its location and speed vary, its fuel level falls, but to a large extent and in normal circumstances most other attributes such as the cargo, the number of passengers, the details of the crew, the technical characteristics, or the presence of hazardous materials remain the same until the ship reaches the next port of arrival. Thus, a large amount of information, if known at departure will be identical at arrival.

Most port to port journeys are international, and many within EU waters are intra-EU. In attempting to simplify reporting burdens by removing the obligation to report information that is already knowable, it is advantageous for Member States to be able to share information within a secure environment, so

that the reporting burden can be limited to filling information gaps, and updating variable or semi-static information when it changes. This is the role designated by the RFD and e-Maritime system for SafeSeaNet.

Figure 6-2: Stakeholders' Views on e-Maritime



Source: IA on e-Maritime, a study by PwC on behalf of DG-MOVE, 2011

In the draft Impact Assessment on e-Maritime, stakeholders indicated almost 100% support for the proposals, in terms of their impacts upon productivity and administrative burden. Almost half considered the impact to be "very positive" according to these criteria.

In the PwC study (2011), an analysis of cost savings was made using information collected from the introduction of the Finnish National Single Window. It estimated that there was a significant reduction in workload related to administrative procedures after the single window was introduced.

The estimated savings in administrative costs were:

Table 6-2: Administrative Savings estimated for e-Maritime

Stakeholder	Rate of Saving
Central Administration	1.0 employee work year
Port Authorities	0.5 to 1.0 employee work year per large port.
Shipping companies and brokers	0.5 to 1.0 hours per vessel call.

Source: PwC, 2011

These time savings were translated according to a rate of 35,000 € per annum, which is close to the current EU average labour cost per annum. At EU level it was calculated that total savings in administrative burden resulting from e-Maritime would amount to 31.5 € mln (expressed as the net present value).

Table 6-3: Administrative Savings estimated for e-Maritime, NPV (€ mln)

Stakeholder	Saving
Central Administration	1.2 € mln.
Port Authorities	6.9 € mln.
Shipping companies and brokers	23.4 € mln.
	31.5 € mln.

Source: PwC, 2011

Today, this estimate appears to be conservative. EMSA reports that in July 2013, a total of 78,883 ship calls were made in European ports by vessels covered by the Directive (includes Norway and Iceland). This implies a rate of 946,596 relevant ship arrivals per annum. If shipping lines and agents save between half an hour and one hour per arrival, this implies a total saving of 709,947 hours as a result of the e-Maritime initiative.

Taking an average labour cost per hour of 23.65€ per hour for Western countries[1] (average of UK, Netherlands and Spain), and 6.15€ per hour for Eastern countries (average of Estonia, Latvia and Lithuania), and applying this to the split according to the number of ship arrivals, the savings would be over 15 million Euros per annum.

Note that these are estimated savings arising from e-Maritime measures, and not the total costs associated with reporting.

Table 6-4: Potential Administrative Savings for Shipping Companies, 2013

Region	Annual Vessel Calls*	Hours Saved @45min/call	Annual Cost Saved €m
EU15	837,960	628,470	14.863
EU12	63,180	47,385	0.291
Total EU27	901,140**	675,855	15.154

** EMSA, 2013 SafeSeaNet Reports*
*** Excludes NO and IS.*

As in the case of accident reduction, this study cannot attribute these large potential cost savings directly to the proposed VTMIS measures. However, they may be attributable to additional tiers of initiatives which in turn depend upon the effective use SafeSeaNet, harnessing the provisions which it contains.

Such indirect consequences are a necessary element for consideration within the context of the VTMIS revision. These potential consequences encapsulate a large part of the expected benefit arising from the optimisation of SafeSeaNet.

6.2 *Framework for Impact Assessment*

The impact assessment attempts to connect policy measures to sets of impacts which will allow a comparison to be made.

In this study, measures are grouped into policy package. Each policy package will have **direct** consequences:

[1] Eurostat, Labour costs annual data - NACE Rev. 2 (tps00173), 31.10.2013

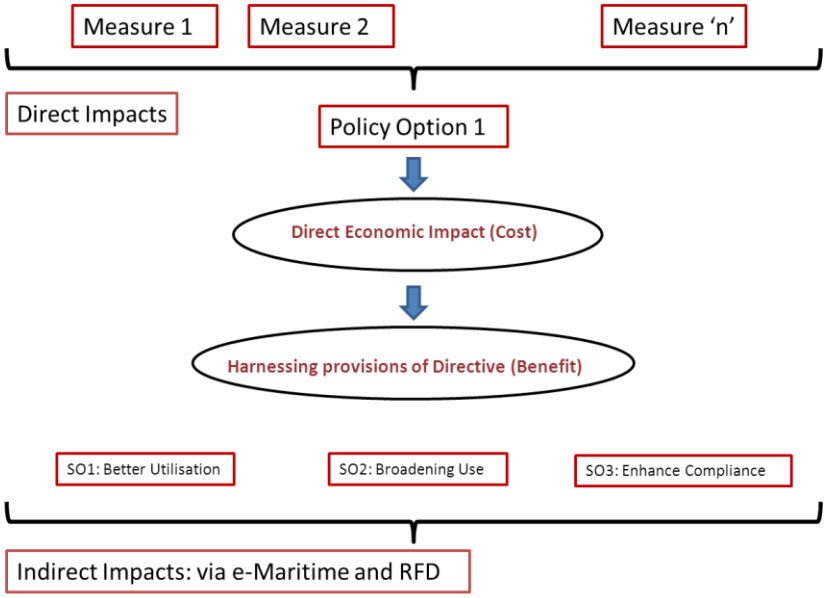
- Costs, related to the compliance/adjustment to the measures, and
- Benefits, arising by harnessing the provisions of the Directive, and improving the total return on investment.

In this context (direct impacts), new implementation costs are compared against the extent to which the system is harnessed for practical use.

If two different functions can both use the same information system, the return on the investment is higher.

By harnessing the Directive in this way, making better use of the system, it can support broader initiatives (RFD and e-Maritime in particular), leading to further contributions in economic, social and environmental benefits. These are the **indirect** impacts, as described above. Direct and Indirect impacts have been checked against IA Guidelines (See Annex 4: Identification of Impacts). The resulting framework is set out below:

Figure 6-3: Framework for Impact Assessment



Economic	Social	Environmental
• Reduction of reporting Duplication • Reduction in Administrative Burden • Greater efficiency in Governance	• Contribution to reduction in maritime fatalities. • Contribution to law enforcement and improved security • Improved job quality for seafarers.	• Contribution to reduction in marine pollution, resulting from accidents.

6.3 *Direct Impacts*

Direct impacts of the proposed measures are primarily economic, as argued in previous sections. Costs arise through the development and operation of SSN. Benefits arise through the harnessing of the system the Directive established and improving the total return of the investment by making information available to authorities, and allowing different branches of Government as well as industry to benefit from a single information resource.

6.3.1 *Costs Associated with VTMIS*

Though the VTMIS Directive was adopted in 2002, some of the national infrastructure, systems and procedures were ***pre-existing*** at Member States, due to relevant reporting and monitoring obligations set by the IMO. The VTMIS directive has ensured harmonised compliance with those international requirements and built on the existing monitoring framework by introducing a link between the different systems and the obligation to the Member States to cooperate in a structured and coordinated way to develop a Community system.

The VTMIS directive created a new concept in the EU which initially required a large amount of technical work and investments and a considerable consultation and coordination work to define the operational procedures and keep the appropriate quality standards.

Ongoing SafeSeaNet development is a low-cost IT project built on existing infrastructure, generating benefits for the participating organisations. The biggest challenge of SSN is not the IT dimension itself, but the collective effort to set the administrative procedures for its proper functioning and follow up as the Union maritime information and exchange system.

The following paragraphs provide an overview of VTMIS costs.

The current VTMIS Directive costs consist of the following elements:

- **Reporting costs** - costs mainly operationally related with the reporting of the specific information required by the Directive 2002/59/EC

- **Infrastructure costs** – costs related to land based AIS stations, the development and operations of the specific technical systems e.g. shipping companies' systems, systems for the agents, related communication links and the interfaces between the existing systems and National or Central SafeSeaNet; and additional costs related to interlinking the already existing systems e.g. Vessel Traffic Services (VTS), Mandatory Reporting Systems (MRS).
- **Equipment costs** – costs related to the specific on-board equipment required by the Directive (and/or the relevant IMO regulations)

  Administrative and operational costs - costs related to training, consultation, awareness, operational etc.

These costs are borne by:

- **Shipping industry** – who generate the large part of the information handled in SSN.
- **Member States** – who receive the primary information and relay it.
- **EC/EMSA** – who provide the central infrastructure.

Costs may be variable or fixed. Variable costs in this context mean regular and on-going costs such as the cost of making reports to authorities. Fixed costs mean one-time investments for example in developing national systems. In many cases, the costs given are cumulative.
Costs have been analysed based on information provided by EMSA, and via questionnaires provided by Member States. Further details are provided in Annex 5: Economic Impacts.

Table 6-5: VTMIS Directive Costs Borne by Shipping Industry (€)

Shipping Industry Costs		Development	Annual Cost
Reporting			47,329,800
Infrastructure		25,000,000	
Equipment		59,589,400	
Administrative*		-	-
	Total	84,589,400	47,329,800

** Negligable.*

Table 6-6: VTMIS Directive Costs Borne by Member States (€)

Costs for Member States	Development	Annual Cost
Reporting		
Infrastructure		
Of which: National SSN	30,000,000	
AIS Infrastructure	72,700,000	
Equipment		
Administrative		4,000,000
Total	102,700,000	4,000,000

Table 6-7: VTMIS Directive Costs (€) borne by European Commission/EMSA

Costs for EC/ EMSA	Development	Annual Cost
Reporting		
Infrastructure	16,000,000	
Equipment		
Administrative		150,000*
Total	16,000,000	150,000

*the average annual cost has been obtained from the EMSA's expenditures on: SSN WS, Trainings, WGs, VTMIS Directive inspection visits , LRIT meetings and trainings - between 2007 -2013 (Total: 900,000€)

Table 6-8: Total Costs (€) associated with VTMIS

Total	Development	Annual Cost
Reporting	-	47,329,800
Infrastructure	143,700,000	-
Equipment	59,589,400	-
Administrative		4,150,000
Total	203,289,400	51,479,800

Development Costs

One-time development costs for VTMIS/SafeSeaNet over all three categories of stakeholders are therefore estimated to be €203m. Some of the larger items within this sum are expenditures which would have been necessary anyway:

- Shipping Industry Equipment Costs: €59.6m
- Member States AIS Base Stations[1] : €72.7m

These items cover multi-purpose infrastructure and equipment, also necessary to achieve compatibility with international (IMO) standards.

Therefore within the total development cost of €203m, only the remaining items amounting to €71m, are costs which may be directly related to SafeSeaNet. They include:

- Investment of €25m by industry in integrating port systems with the national SafeSeaNet system.
- Investment of €30m by Member States to create national SafeSeaNet systems.
- Investment of €16m by EMSA in creating the SSN central system.

Reporting Costs

Reporting costs, on the basis of the current reporting obligations, associated with the Directive are estimated at €47m per annum based on €50 per call, and approximately 940,000 ship calls per year in 2013.

Administrative Costs

Administrative costs, including training, monitoring, consultation and awareness are also counted as ongoing, annual costs, amounting to €4.15m.

[1] Much of which was in creating the network of 727 AIS base stations as a one-off cost, but which would have been needed to meet IMO requirements in any case.

Cost estimates derived during 2013 consultation

During consultation, member States have also provided estimates of their historical costs associated with VTMIS/SSN. These sum to €27m for the ten countries who responded, and an estimated €98.9m for the relevant EU MS, on a pro-rata basis according to the number of vessel arrivals registered per country within SSN for 2013. Such a figure corresponds well with the figure of €102.7m provided by EMSA (see: Table 6-6 above).

6.3.2 *Benefits Associated with VTMIS*

As demonstrated, the VTMIS system is estimated to have cost in excess of two hundred million Euros, with approximately 50 million Euros spent annually on reporting. SafeSeaNet represents a collective effort to set the administrative procedures for the proper functioning and follow up as a Community traffic monitoring information system. The Directive sets out the infrastructure and reporting requirements. However, it also contains the basis for harnessing the system to be used by the authorities. This is where the benefits arise; avoidance of duplication and using same technological solutions developed in cooperation i.e. improving the total return of the investments.

According to the Reporting Formalities Directive (RFD):

Whereas (paragraph 10):

> *"The SafeSeaNet systems. ..To facilitate maritime transport and to reduce the administrative burdens for maritime transport, the SafeSeaNet system should be interoperable with other systems of the Union for reporting formalities. The SafeSeaNet system should be used for additional exchange of information for the facilitation of maritime transport. .."*

The benefits of SafeSeaNet are therefore explained in terms of interoperability, making it possible to re-use existing data and existing infrastructure to fulfil a wider range of functions and

services, and therefore to achieve a higher rate of return on investment. Without SafeSeaNet it would be necessary either to construct a new, dedicated IT system for the RFD, or in the absence of agreements regarding data access and governance, a series of separate IT systems, one for each user community.

As argued in chapter 3, the combination of provisions afforded by the RFD and VTMIS Directives, provides sufficient scope for achieving the least-cost option, i.e. combining the RFD data streams onto the existing SSN platform. However, as seen during consultation, many find that utilisation of the current SSN is still sub-optimal.

The measures contained here should therefore be evaluated not only with respect to their costs, but also to their contribution to the specific objectives (see Table 4-4) of the revision, i.e.:

- Better utilisation
- Broadening the use of the integrated maritime information system and services
- Better compliance

If more users are making better use of higher quality data, there will be benefits. This is also the foundation, opening the way for the achievement of indirect economic, social and environmental benefits.

6.4 Impact of Options

To recap the options set out in chapter 5, there are four policy packages, with policy option 1 representing the baseline situation in which existing initiatives are continued.

Policy Option 1: Baseline

PO 1: Continued implementation (no policy change) and promotion of best practices, exchange of experiences and technical support. In short – continue with all on-going actions.

Policy Option 2: Amendment
PO 2 – Amendment of the Directive by comitology and adjustment of the Governance structure

Policy Option 3: Recast

PO 3 – Full recast and restructuring

Policy Option 4: Combination
PO 4 – Combination of the above.

As implied by the presence of PO4 (combination), these options are not mutually exclusive.

PO1 (baseline) is an extension of ongoing initiatives, including:

- Promotion of best practices
- Exchange of experience
- Technical support

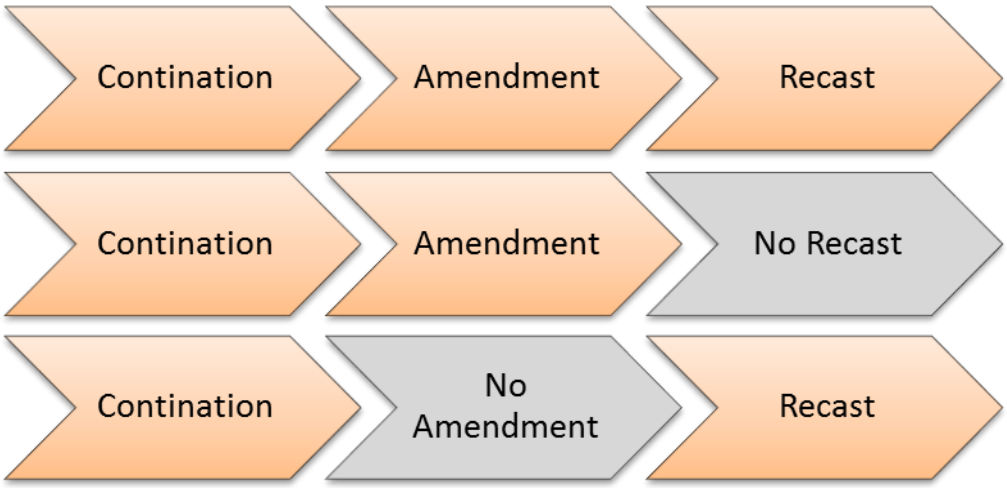
PO2 adds to this by including amendment of the Directive through comitology.

PO3 goes further by including a recast of the Directive.

PO4 takes the timing issue further into account and implies that the previous options would be combined in a logical sequence, i.e. first amendment and then recast.

Amendment can be seen as a possible short-term option to aid preparation for the RFD, paving the way for a full recast at a later date, thereby not interfering with the ongoing implementation process of the RFD but supporting it.

Table 6-9: PO4: Combination of measures – three sub-options



The target year for impact assessment is 2023 (10 years from today)**.** Specific issues concerning timing of events that affect the options will be explained in the following descriptions. It is considered that, due to the nature of the options being compared, i.e. aimed at improving and updating the clarity of existing legislative instruments, the comparison would not change if the time period were extended. The main impacts, such as

adjustment costs for industry and Member States occur in the first years of operation.
Consideration needs to be given to related ongoing developments, as pointed out in this report, and in particular the implementation of the national single windows in the RFD. From the consultations both MS and Industry repeatedly expressed serious concern and the need for them to put all efforts and investment into the setting up of the national single windows and making them work and interconnect, within the time frame remaining until 1 June 2015, before any bigger revision of the VTMIS Directive. They also point to the need to gain experience in the operation of the NSW and the interlinking with the SSN system and platform, as important before considering next steps in revising the VTMIS.

As explained above, the impact assessment uses a multi-criteria analysis. Impacts are split into:

- Cost Impacts: direct financial implications of proposed actions.
- Benefits: positive outcomes, expressed in terms of expected achievement of stated operational objective.

The tables relate the measures contained in PO with expected costs and benefits described according to the operational objectives. For a full list of measures see section 5.2. The measures attached to the option being analysed are shown above the impact tables.

Costs are split according to the formulation used in section 6.3.1, in which they are assigned by cost type and by the type of stakeholder bearing the additional cost. Reporting costs are repeated or variable costs. Infrastructure and equipment costs are generally one-off or fixed costs, and administrative costs have both temporary and regular elements. Only additional costs which would occur because a specific policy option is undertaken are taken into account for the purpose of this analysis.

Benefits are analysed according to the operational objectives set out in section 0. They are not allocated by type of stakeholder, and are considered to be common objectives for all stakeholders.

The expected presence of a cost or a benefit within this analysis is simply shown as a tick-marker. It is not possible to

estimate the scale of the impact, only whether an impact is likely or not and whether is it positive or negative. In the following chapter 7 an analysis has been made, taking into account the current and historical scale of costs, and also the full impact of each package, taking into account the combined effects of each package.

No geographical bias is considered likely. All maritime Member States are affected directly, and since none of the measures require further installation of infrastructure there are no disproportionate impacts on Member States with the longest coastlines.

6.5 *Policy Option 1: Baseline*

Continuation of existing policy represents the **baseline** scenario, showing maximum that is possible to achieve with no further revisions of the Directive.

- Actions concentrate upon increasing awareness, and promoting best practice.
- Additional costs are therefore assumed to be on the one hand, administrative relating to the need of providing additional technical support and additional training to be carried out by EMSA for the benefit of MS operators and on the other hand, related to the development of interconnections and interoperability of existing infrastructure (especially the IMDatE project) for the EC/EMSA.
- Benefits are related to improved data quality, and improved operational use of SSN as a core for the continued IMDatE project, with technical developments being made and applied for the better utilizing by both the existing users and for wider use and functions.

Error! Reference source not found. and **Error! Reference source not found.** represent the baseline, consisting of 'Measure 0' which is a continuation of on-going actions.

Measure 0: Continued implementation (no policy change) and promotion of best practices, exchange of experience and technical support; continuation of all on-going actions.

Table 6-10: Baseline Scenario, 2023, Continuation of Existing Policy, Cost Impacts

		Cost Impacts											
		Reporting			Infrastructure			Equipment			Administrative		
Policy Options	Measures	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA
Policy Option 1: Baseline													
0	Continued implementation and promotion of best practices						☑					☑	☑

Table 6-11: Baseline Scenario, 2023, Continuation of Existing Policy, Benefits

		Benefits in relation to objectives					
		OO1		OO2		OO3	OO4
Policy Options	Measures	Improved Data Quality	Training/ Operational use	Accommodation of non-VTMIS Functions	Accommodation of Tech Developments	Improved Governance Structure	Clarified legal provisions
Policy Option 1: Baseline							
0	Continued implementation and promotion of best practices	☑	☑	☑	☑		

Under the baseline scenario, the problems of sub-optimal utilisation by present users are addressed through awareness raising and training initiatives using existing frameworks.

No additional reporting or equipiment costs are imposed, but some additional administrative costs for both EC/EMSA and Member States are incurred for the additional training, awareness programmes and technical support. Additional costs related to interconnections and interoperability of existing infrastructure are expected for EC/EMSA through the continued development of IMDatE. Costs forseen, within EMSAs budget, relate to adjustments depending on user requirements and needs, increased capacity and some further developments (risk algorithms). There are no direct costs for Member States or industry.

Benefits are to be found in terms of better utilisation of the existing system. Less data inaccuracy, better access to data and better user friendliness are expected (OO1). Expansion of the user base and further technical development are expected, in relation to the IMDatE initiative (OO2), though the expected impacts of this option would be limited as the legal framework would not be changed to reflect the practical situation. While it

would be welcome to meet the objectives at a low cost, it is also important to note that under this baseline scenario two objectives (OO3 and OO4) would only be achieved at limited level, related to legal certainty of integrated maritime services (IMDatE) and the adjustments to the governance structure, allowing for a more streamlined governance and use of the SSN High Level Steering Group, would not be possible to achieve, leading to risks of certain overlap and duplication of work as the technological development advances.

6.6 *Policy Option 2: Amendment (Comitology)*

Under the amendment (comitology) option, changes would be made to the technical annexes following a comitology procedure. There is no change to the body of the text.

Option 2 therefore permits a limited revision of the Directive, consisting of six separate changes:

Measure 1: Revision of Annex III to the Directive to better reflect the current situation:

- Drawing from the experience gained in operating and using the SSN as a system and platform for the further enrichment of the core information.
- Building on the core and reflecting the technological advancements in the field (e.g. LRIT, CSN and Satellite-AIS) as well as the requirements established by other EU legal instruments, including the Directive on reporting formalities. The measure would enable communication within and between existing systems (interconnection and interoperability) producing integrated maritime services (harnessing the IMDatE experience), thereby also providing better legal certainty and clarity of the system, SSN, and the services.

Measure 2: Revision of the Commission Decision setting up the SSN HLSG. Adjustments and clarification of the governance structure would be made, including a name change to the High Level Steering Group on the Union maritime information and exchange system (SSN). There would be a clarification of the status of technical/operational sub-groups under the HLSG and a possibility of launching ad-hoc sub-groups. All sub-groups would be drawn together under the HLSG to become more coordinated and efficient both in the Commission and in Member States and for both system and services aspects.

Measure 3: Inclusion of reporting from the Place of Refuge (PoR) group to the HLSG with relation to COSS.

Measure 4: The consideration of linking the EU Coast Guard (EUCG) Forum to either the HLSG and/or the PoR group.

Measure 5: Launching a pilot project to work out how the information contained in SSN could be used for supporting in an efficient way the collecting of data for maritime statistics purposes (ESTAT initiative), thereby reducing that administrative burden on MS and at the same time improving reliability, timeliness and accuracy of maritime statistics.

Measure 6: EMSA to continue providing training (train the trainer) in the rolling out of SSN v3, thereby contributing to a continued process of cultural change in the use and operational practice surrounding SSN, thereby addressing the under-utilisation and contributing to data quality improvements through enhanced understanding of the reporting process.

Table 6-12: Policy Option 2, 2023, amendment, Cost Impacts

			Cost Impacts											
			Reporting			Infrastructure			Equipment			Administrative		
Policy Options	Measures		Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA
Policy Option 2: Amendment of Directive														
1	Revision of Annex III							☑						☑
2	Revision of the Commission Decision setting up the SSN HLSG.													☑
3	Inclusion of reporting from the Place of Refuge Group to the HLSG.													
4	Consideration of linking the EU Coast Guard Forum													
5	Pilot project for collecting maritime statistics.													
6	EMSA to continue providing training in the rolling out of SSN v3												☑	☑

T **Table 6-3: Policy Option 2, 2023, amendment, Benefits**

			Benefits in relation to objectives					
			OO1		OO2		OO3	OO4
Policy Options	Measures		Improved Data Quality	Training/ Operational use	Accommodation of non-VTMIS Functions	Accommodation of Tech Developments	Improved Governance Structure	Clarified legal provisions
Policy Option 2: Amendment of Directive								
1	Revision of Annex III		☑	☑	☑	☑	☑	☑
2	Revision of the Commission Decision setting up the SSN HLSG.						☑	
3	Inclusion of reporting from the Place of Refuge Group to the HLSG.						☑	☑
4	Consideration of linking the EU Coast Guard Forum						☑	
5	Pilot project for collecting maritime statistics.				☑	☑		
6	EMSA to continue providing training in the rolling out of SSN v3		☑	☑				

The foundation of option 2 would be measures 1 and 2. Measure 1 involves a modification of Annex III of the Directive which would clarify aspects related to technical advancement (especially IMDatE) and the inclusion of other user functions. It is expected that some infrastructure costs related to the need to develop new data streams between different systems and the further integration of information would arise within the central system (EC/EMSA), and also certain administrative costs because of changes in software licensing. Measure 6 is also expected to incur administrative costs, related to additional training programmes.
No additional reporting costs or infrastructure costs are foreseen under option 2. Thus the impact on MS and Industry are minimal or negligible.

Under option 2 it is possible to realise a broader range of benefits, because in addition to the training and awareness measures (OO1) it is possible to harness the technological advancements of IMDatE, LRIT, CSN and S-AIS (OO2). It would allow, via the HLSG, building on the experience gained in using SSN as a system and platform for the further enrichment of the core information for integrated maritime services to be provided increasing utilisation both for current and wider users and functions, subject to certain conditions, access rights and respecting data protection rules (OO3).

Furthermore it would provide better legal certainty (OO4) with respect to the system and the services, their effective use and thereby avoiding the risk of parallel duplicate system being developed at extra cost and no added value. It would (via Measures 2, 3 and 4) contain some adjustments allowing for a more streamlined structure and better coordination between

various expert/operational groups and the High Level Steering Group governance procedures. It would also better reflect the need to manage the integrated systems and services and their developments (OO3). Through the streamlining of governance procedures by simplifying the group structure, administrative costs in particular for the EC/EMSA would be incurred initially and can then be expected to decrease.

Therefore in addition to the foreseen impacts on administrative costs, there would also be some tightening of procedures, and some further central infrastructure costs related to the development of new data streams between different information systems, all within the current budget envelope of EMSA.

PO2 proves to achieve all the operational objectives to an adequate level.

6.7 Policy Option 3: Recast

Option 3 involves a recast of the Directive, thus allowing the legal text to be somewhat restructured to better reflect the current and expected future requirements. A recast allows changes both to the legal text and the technical annexes, and requires transposition into the national legislation.

Option 3 consists of the measures of policy option 2 (if not following the preferred option 4 – stepwise approach) and adds 12 additional measures, labelled 7-18, many of which are aimed directly at establishing greater legal clarity:

Measure 7: Change the name of the Directive to better reflect the developments within the application and wider policy environments to the "Directive on the Union Maritime Information and Exchange System".

Measure 8: Recast the existing legislative framework and restructure it. An option to be considered would be to remove the chapter (Title III) which includes provisions for the accommodation of ships in need of assistance, and to refine these elements in new EU Legislation. The new structure will be recast to meet current and future technological advancements in the field as well as the requirements established by other EU legal instruments.

Measure 9: Align certain articles with the purpose in Article 1. Make clarifications and additional references to SSN as the system to be used for information exchange.

Measure 10: Restructure current Titles I, II and the "Hazardous parts" of Title III into a new Title "Vessel Traffic Monitoring and Information Exchange".

Measure 11: Include and clarify Integrated Maritime Services (IMDatE), supporting maritime monitoring, within new title III

Measure 12:. Make the purpose of the Directive more explicit and clarify the scope of SSN within that purpose (align with current text in Annex III);

Measure 13: Specify use and access conditions for the SafeSeaNet system and services, in a new separate annex.

Measure 14: Clarify if and when AIS transponders can be switched off.

Measure 15: Consider a legal provision regarding cooperation of EU Coast Guard functions (in the same way as is now the case in article 20.3 for the Places of Refuge) supporting exchange of expertise and improvement of operational practical measures.

Measure 16: Improve the quality of initial data input by making the ship-owner responsible for data accuracy, instead of or together with the Master, and link it to the possible withdrawal of the International Safety Management (ISM) certificate if there is error or deliberate failure.

Measure 17: Further refine the governance structure in addition to measures contained in Policy Option 2, seeking closer coordination with or consider merger with eMS. Clarify links with the EMSA Administrative Board, PMoU and EQUASIS.

Measure 18: Clarify the provision for certain data to be fed into EQUASIS (and how) and thereby to be made available to ship owners and the public.

Table 6-14: Policy Option 3, 2023, recast, Cost Impacts

			Cost Impacts											
			Reporting			Infrastructure			Equipment			Administrative		
Policy Options	Measures		Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA	Industry	MS	EC/EMSA
Policy Option 3: Full Recast														
7	Change the name of the Directive.													
8	Recast the existing legislative framework and restructure it to meet current and future technological advancements							☑						
9	Align certain articles with the purpose in Article 1.													
10	Restructure current Titles I, II and the "Hazardous parts" of Title III.													
11	Include and clarify Integrated Maritime Services (IMDatE), supporting maritime monitoring, within new title III													
12	Make the purpose of SSN within the Directive more explicit.												☑	☑
13	Specify use and access conditions for SafeSeaNet system and services												☑	☑
14	Clarify if and when AIS transponders can be switched off.												☑	☑
15	Consider a legal provision regarding cooperation of EU Coastguard functions.												☑	☑
16	Making the ship-owner responsible for data accuracy.		☑											
17	Change governance structure.												☑	☑
18	Clarify the provision for certain data to be fed into EQUASIS												☑	☑

Table 6-15: Policy Option 3, 2023 Recast, Benefits

			Benefits in relation to objectives					
			OO1		OO2		OO3	OO4
Policy Options	Measures		Improved Data Quality	Training/ Operational use	Accommodation of non-VTMIS Functions	Accommodation of Tech Developments	Improved Governance Structure	Clarified legal provisions
Policy Option 3: Full Recast								
7	Change the name of the Directive.							☑
8	Recast the existing legislative framework and restructure it to meet current and future technological advancements				☑	☑		☑
9	Align certain articles with the purpose in Article 1.				☑			☑
10	Restructure current Titles I, II and the "Hazardous parts" of Title III.							☑
11	Include and clarify Integrated Maritime Services (IMDatE), supporting maritime monitoring, within new title III				☑			☑
12	Make the purpose of SSN within the Directive more explicit.				☑			☑
13	Specify use and access conditions for SafeSeaNet system and services			☑				☑
14	Clarify if and when AIS transponders can be switched off.			☑				☑
15	Consider a legal provision regarding cooperation of EU Coastguard functions.						☑	
16	Making the ship-owner responsible for data accuracy.		☑					
17	Change governance structure.				☑		☑	
18	Clarify the provision for certain data to be fed into EQUASIS		☑					

Measure 16 is expected to incur reporting costs and responsibilities for data errors, either for industry or for Member States. Additional infrastructure costs arise for EC/EMSA related to measure 8 for the future development and adjustment of integrated maritime services based on the core SSN platform, implying potential for greater operational usage. For measure 14 there are no new reporting requirements, but there would be stronger safeguards related to use of conditions under which vessels may switch off AIS transponders. In the latter case, this measure would only affect companies who are not reporting data correctly today. Otherwise it is expected that several measures within this package introduce additional administrative costs for Member States and EC/EMSA.

Reporting costs are therefore expected to increase with Policy Option 3, because of the tightening of the rules and imposition of stricter penalties for failing to meet reporting requirements. However, increases in administration costs would arise through adjustment to changes in legislation, and would therefore have a temporary nature. Through the alignment and stronger interlinking of various governance bodies involved (e.g. measure

17), administrative costs in particular for MS, would be incurred initially and can then be expected to decrease.

With a full recast it would be possible to address all of the stated objectives. Stronger requirements on reporting would ensure the better data quality and would allow a more effective use and development of the system (OO1). From the perspective of accommodating the non-VTMIS functions, the revised VTMIS Directive could stipulate in the interest of clarity every user-function, however only in relation to how the system and services could be used and not in relation to how administrations should organise themselves at national level. It would be possible to align the provisions of the Directive more closely with the current technical developments and usage practices, all relevant information systems would be cross-referenced in the Directive, therefore accommodating further possibilities arising from the application of VTMIS and NSW/RFD together (OO2). Governance structure would strengthen the present coordination system and all relevant groups would be involved in the decision-making process (OO3). In addition, all unclear requirements and definitions related to the VTMIS Directive could be clarified (OO4).

Benefits of those changes would build on those in Policy Option 2. While, the intended increased utilization actions can to a large extent be achieved by implementation measures, the revision would be more forward looking, also taking into account the operation of the platform in the context of functional National Single Windows and the 'reporting once' approach. It would however risk interfering or working to the detriment of the ongoing implementation of the RFD.

7 Option Comparison

In comparing the various options it is important to reiterate that all options aim at the improved utilisation of the large, initial, one-time investment, establishing the system and network (AIS) as a cornerstone enabling the development of more efficient reporting, monitoring and exchange of information.

The option set considered in this study, comprises different degrees of how to improve utilisation of that initial investment for the purposes both of the VTMIS Directive and in relation to other Union Legislation, and in particular the Reporting Formalities Directive, relying on the system for their effective functioning.

If not, a (quite different) comparison would have to be made against the total cost of establishing parallel information systems basically performing the same function, but each dedicated to a different user community. That would inevitably entail duplication, delays and overlaps, and therefore higher costs.

Each option has been scored using plus and minus indicators against a series of criteria. A negative symbol indicates additional cost, and a positive symbol indicates a benefit. It is important to note that the economic impacts are described almost exclusively in terms of their costs. Measures that allow a more optimal use of SafeSeaNet are shown according to their ability to realise a higher rate of return on this investment.

Indications of the current or historical scale of costs are shown next to the items in the table. These relate to the initial scale of investment, and are not indications of any additional costs incurred by the new options. Rather, they provide an indication of the benefits from adopting measures to avoid the need for parallel systems.

Table 7-1: Option Comparison, analysis of economic impacts.

SUMMARY OF IMPACTS			Option 1 Baseline	Option 2 Amendment	Option 3 Recast
Economic impacts:	**Category**	**Current/Historical Scale**			
Reporting cost (per annum)			**0**	**0**	**-**
	Industry:	€47m	No change in reporting requirements, so no change in cost of reporting	No change in reporting requirements, so no change in cost of reporting	Measures 16 have small reporting impacts, primarely affecting industry
	MSs:	n/a			
	EMSA/EU:	0			
	TOTAL	**circa €50m**			
Infrastructure cost (total to date)			**0/-**	**0**	**0**
	Industry:	€25m	Increase for EC/EMSA related to continuing development of IMDatE.	Small increase due to greater operational use of additional data streams under Measure 1.	Small increase due to greater operational use of additional data streams under measure 8.
	MSs:	€102m			
	EMSA/EU:	€16m			
	TOTAL	**circa €145m**			
Equipment cost (total to date)			**0**	**0**	**0**
	Industry:	€60m	No new equipment required.	No new equipment required.	No new equipment required.
	MSs:	Incl. in Infrastr.			
	EMSA/EU:	0			
	TOTAL	**circa €60m**			
Administration costs (per annum)			**0/-**	**-**	**--**
	Industry:	n/a			
	MSs:	€4m	Increase: additional training.	Small increase due to changes in governance structures. These are adjustment costs designed to reduce cost in the longer term.Moderate increase due to measure 6 (training)	Small increase due to changes in legislation, including governance structures. These are adjustment costs designed to reduce cost in the longer term.
	EMSA/EU:	€0.9m	Increase: additional training and technical support.	Moderate increase due to measures 1 and 2.	increase due to measures 12-15, 18
	TOTAL	**circa €5m**			
Return on Investment			**+**	**++**	**++**
			Improvement due to increased training and awareness of system.	Added benefit through legal certainty of integrated maritime services and information streams. Improves the utilisation and wider user base.	Recast permits more thorough clarification of legal requirements. Improves the utilisation and wider user base.

Table 7-2: Option Comparison, analysis of social impacts.

SUMMARY OF IMPACTS		Option 1 Baseline	Option 2 Amendment	Option 3 Recast
Economic impacts:	**Category** **Current/Historical Scale**			
Social impacts:				
Employment and working conditions		**0**	**+**	**+**
		No direct or indirect consequences	Indirect benefit. Greater legal clarity assists in avoiding duplicate systems and therefore in reporting duplication by industry; allows concentration on	Additional Indirect benefit vis-a vis option 2 due to greater legal clarity But implementation timescale not ideal re RFD.
Safety		**0**	**+**	**+**
		No direct or indirect consequences	Indirect benefit. Greater use of integrated services allows enhanced effectiveness of maritime monitoring, by involved authorities.	Indirect benefit. Greater use of integrated services allows enhanced effectiveness of maritime monitoring, by involved authorities.
Environmental impacts:		**0**	**+**	**+**
		No direct or indirect consequences	Possible indirect benefit via prevention of circumstances leading to accidents and spillages (intervention, monitoring and coordination).	Possible indirect benefit via prevention of circumstances leading to accidents and spillages (intervention, monitoring and coordination)..

Table 7-3: Option Comparison, Effectiveness and Efficiency.

SUMMARY OF IMPACTS		Option 1 Baseline	Option 2 Amendment	Option 3 Recast
Economic impacts:	**Category** **Current/Historical Scale**			
EFFECTIVENESS/EFFICIENCY				
Effectiveness:				
Specific objectives:		**0/+**	**+**	**++**
SO1: Ensure better utilisation of the SSN by present users.		Better utilisation through increased investment in training and awareness and through continued development and use of IMDatE.	Significantly improved utilisation - encouraged by development of value-added integrated maritime information services.	As PO 2, plus additional user benefits through improvements in data accuracy.
SO2: Broadening the use of an integrated maritime information system to guarantee interoperability of systems, avoid duplication and ensure efficient use of data and services.		Some increase in the user base related to the development of IMDatE.	Significant improvement. Non-VTMIS community can benefit from one-time investments made by VTMIS community. Measures allow a higher rate of return on original investment.	As PO2, plus additional benefits arising through stronger legal foundations, e.g. measures 8, 11,12 and 17.
SO3: Enhance compliance with the Directive.		No direct consequences	Some improvement in compliance.	Marked improvement in compliance.
Operational objectives:		**0/+**	**++**	**++**
OO 1: Ensure the data quality and raise the effectiveness of the SSN by enhancing the operational advantages of the system, including promotion and training.		Improved effectiveness through training. Better user friendliness through continuation of technical improvements under HLSG.	Improvement through measures 1 and 6.	Improvement through measures 13, 14, 18, and especially 16 which reinforces safeguards for data entry.
OO 2: Accommodate non-VTMIS functions and current and future technological developments in the Directive.		Some improvement related to IMDatE.	Marked Improvement especially through legal clarity re integrated maritime services, through measures 1 and 5	Marked Improvement especially through more explicit establishment of integared maritime services
OO 3: Set up the governance structure to support the new and integrated system		No direct consequences	Marked Improvement through measures 1,2,3, and 4, streamlining all existing experts/operational groups	Improvement, since recast allows through measure 17 a clarification in relation to other relevant groups (especially in a post June 2015 scenario)
OO 4: Clarify certain provisions and definitions of the Directive.		No direct consequences	Improvement through measures 1 and 3.	Marked improvement. Eight separate measures directly address known issues of clarity within the Directive.
Efficiency		**0**	**++**	**+**
		Low - Moderate	High	High

Against the economic criteria, an indication has been made of historical accumulated costs. This is to show whether new cost implications fall within categories associated with high or low costs. It does not quantify the expected future impacts. Since

the measures focus upon better utilisation of what exists by updating and improving the clarity of the legal instruments, there are no significant cost implications related to the main cost items, reporting by industry and investments in new hardware and software by Member States.

Baseline (PO1)

By building on top of the established core SSN network, adding data streams, and expanding the user base it is possible with small additional investments to make further improvements in the provision of integrated maritime services (through the IMDatE service) to harness the much larger initial investment.

Looking ahead to the period 2014 to 2023, the immediate challenges are the implementation of the National Single Windows required by the Reporting Formalities Directive by June 2015 and the consequent technical changes and adaptations to the SSN system; the introduction of SSN v3 in 2014/15. These actions place limits upon the level of additional changes that will be desirable or feasible in the immediate future. This has also been highlighted both by MS and the Industry in the consultations.

Continuation of existing initiatives can improve utilisation through training and awareness raising, leading also to better usage of the data. However, a continuation of soft measures cannot effectively address perceived barriers related to accommodating the wider use (non-VTMIS functions) and therefore the risk of continued under-utilisation and duplication. Furthermore, but perhaps less urgently, a policy of continuation cannot adequately address the operational issues, or deal with changes in governance or issues related to compliance with the Directive.

Thus: Policy Option 1 is considered efficient, but only effective in relation to SO1 (improved utilisation). It has limited effect in relation to SO2, extended utilisation, and does not deal with SO3, compliance of the Directive.

Recast of Directive (PO3)

A full recast of the Directive can address all of the specific objectives. It would provide the possibility of restructuring the legal provisions, better reflect the actual broadening to users,

the juxtaposition with the RFD, and allow a better alignment of articles. A recast would furthermore make it possible to tackle issues of compliance, and allow the inclusion of tighter sanctions.

However, this option would not take into consideration the above concerns expressed by MS and Industry in the Consultations or the actual limits upon the level of additional changes on top of what is already needed for the implementation in relation to the reporting formalities directive and therefore feasible. A situation should be avoided where there is an 'overburdening', as that could lead to the opposite effect; delay in overall implementation and therefore operations. It is also highly probable that any proposal for a recast should be informed by the experience of implementing RFD.

Thus: Policy Option 3 is considered effective for achieving all objectives, but the timing is sub-optimal. In terms of efficiency, Option 3 will not achieve the objectives at the lowest cost. Many of the objectives can be achieved in less time by the more minimal approach (PO2). Option 3 is not optimal at this juncture but needs to be retained and considered in a step wise approach within a combined approach (PO4) in which some Option 3 measures be reconsidered post 2015.

Amendment of Directive (PO2)

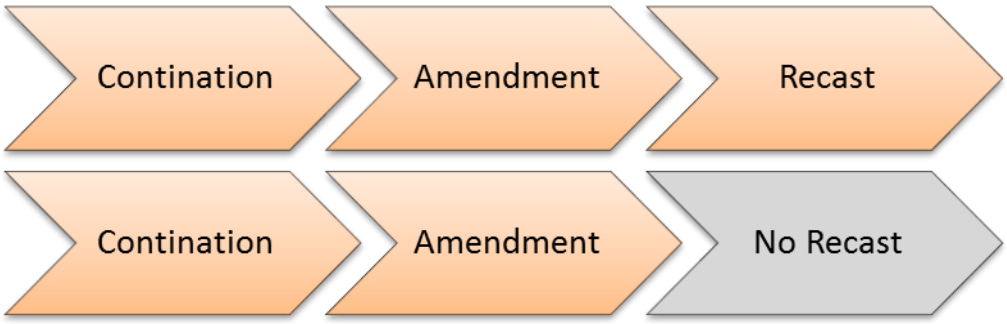
An amendment, implementing measure amending the technical annex, of the Directive therefore appears to be the most effective method for addressing the objectives without interfering with, rather supporting, the implementation process of the national single windows and the linking with the SSN system. It would be a measured step in providing clarity and legal certainty and therefore reduce the risk that any perceived data usage barriers within SSN inhibit its broader use and the ambitions to avoid duplication and reduce the costs of reporting to authorities. At the same time it supports the natural evolution of the system, harnessing experiences gained in operating and using it, for the enhanced efficiency of maritime safety as well as monitoring maritime traffic and maritime transport, hence leading to a marked improvement at a moderate cost. It would be an efficient way to build on the investment already made in providing a better return on that investment and in taking into consideration the main outcome of the consultations.

Thus: Policy Option 2 is considered effective for achieving most of the current objectives and it can also be considered the most efficient, and importantly it can be launched without interfering with the RFD process. It does not preclude nor impede a later recast. Option 2 needs to be retained and considered in a step wise approach within a combined approach (PO4)**.**

Combination of Options (PO4)
Between 2014 and 2023, a combination of options is feasible. Following the previous logic, two sub-options still exist.

Continuation of existing practices, as established by the Directive is part of all options, and is expected to yield benefits, especially in the area of improving data utilisation and data quality. Amendment is now carried forward as the readily applicable instrument to assist in legal certainty as well as the clarification of perceived data access and data usage barriers, arising through the RFD process.

Table 7-5: PO4: Combination of measures – two remaining sub-options



The deferment of the recast decision allows for a more targeted policy intervention already at this juncture, and can be seen as paving the way for further steps within the 2014-2023 timescale. Thus, Policy Option 4 is considering a step wise approach within a combined approach.

7.1 Comparison of Policy Options

The present section provides the comparison of the policy options according to their degree of effectiveness, efficiency and coherence. The parameter of effectiveness evaluates the capability of the policy to achieve the objectives to eliminate the problems. The degree of efficiency, on the other hand,

evaluates the amount of resources required for each policy option to achieve the objectives. Finally coherence is related to the ability to provide a sustainable solution without contradicting the overarching objectives of the EU policies.

The impacts of options 1 to 3 are summarised below in terms of effectiveness, efficiency and coherence. Option 4 (combination) would be a combination of options 2 and 3, involving first an amendment (implementing measure) to the Directive and a subsequent recast, building further on the experience in operating the system and services as well as the important lining to the national single windows, taking a more holistic approach to maritime surveillance in general and in relation to the overall transport and maritime transport policy objectives.

7.2 *Effectiveness*

The effectiveness of the policies under consideration is based upon the ability of the different options to allow the Directive to be harnessed more effectively by (i) maritime safety functions and (ii) other functions related to maritime transport and traffic.

Option 1 (baseline) does contain initiatives which contribute to a limited extent towards some of the objectives, but when all the intended objectives are considered, option 1 is not an effective solution. Option 1 contributes to better utilisation of the SSN, but would only have limited effect on broadening the usage of the integrated systems. It would not contribute to clarifying the legal provisions or improving the governance structure to better reflect the current system and technological developments.

Option 2 adds to the benefits in option 1 by permitting the early adoption of amendments that harness technological developments and enables integrated maritime services and an enriched maritime picture with SSN at the core (integrated maritime picture). It also allows for better and wider utilization of the SSN system. The changes in the Annex of the Directive would allow for legal certainty contributing to the better effectiveness of the SSN and better data quality, within a shorter timescale than option 3. There would be inclusion of all the different technological developments under one governance

structure to allow better coordination and utilisation of the SSN system.

Option 3 goes further towards achieving all the objectives effectively, since it involves changes to the legal text, allowing a deeper re-structuring of the Directive. In addition to that of Option 2, all remaining issues of legal clarity could be removed. The Governance could be further aligned and consider the potential growing number of users and user needs. There is however a risk that a full recast have a negative impact on the process of implementing the RFD and the NSW.

7.3 *Efficiency*

Efficiency evaluates the effectiveness of each policy option compared to the cost related to its implementation. Generally speaking the efficiency of the policies under consideration mirrors the degree of their effectiveness.

Option 1 is considered moderate, as the baseline. There are minor cost increases related to further training and awareness programmes, but not all of the objectives in particular the scope for wider utilisation and its governance are realised, and therefore greater return on historical investment, is limited.

Option 3 is considered efficient, in the sense that it achieves all of the objectives at a high level, but it also involves higher costs, particularly administrative costs.

Option 2 is considered most efficient as it achieves all of the objectives, although some of these to a lesser degree than option 3. At the same time, the cost of achieving the objectives are much lower than for option 3, specially relating to the administrative cost of the legislative process and implementation cost in the later stage.

Option 2 allows for a shorter timescale for its realisation helping in the realisation of objectives related to safety and maritime transport and maritime traffic as well as other EC legislation, which is in turn expected to yield benefits in terms of removing duplication for companies reporting information.

Option 2 is therefore considered efficient, because it is likely to involve lower costs and less uncertainty, and it can be

implemented in less time. Furthermore it paves the way for a later step (recast, building on further operational experience) after 2015, when there would be lower risks of interference with other directly related initiatives.

Overall this points ultimately towards a step wise approach and therefore towards option 4.

7.4 *Coherence*

Concerning the coherence of the analysed policy options with general EU objectives, this initiative must be put in the context of the Maritime transport Strategy[1] and the Transport White Paper[2].

The above are important steps and achievements in realizing, in concrete action and measures, the policy aims in relation to maritime surveillance and efficiency of safe maritime traffic and maritime transport, in the 2009 maritime transport policy until 2018 "to make SSN the core system" and the concrete aim for trade facilitation, through NSWs, as presented in the Communication on Establishing the European maritime transport space without barriers. The 2011 Transport White paper is drawing all together in "securing inter-modal connections, allowing for an integrated transport chain to facilitate the movement of persons and goods across the Union and beyond", using the existing tools and platforms in a cost efficient way.

Focus should naturally also be on the core maritime safety, security and environmental implications. Better data quality, regular use of the data, greater compliance with reporting requirements, clearer rules for procedures in case of incidents, and the ability to integrate data streams all contribute towards the EC's safety objectives for the maritime area. Co-operation on information sharing and the integrated maritime services with SSN at the core, allows for enhanced maritime awareness and as such positively contributes to the operational aspects of mitigating accidents from happening in the first place (traffic monitoring) and when they happen allow for as early and as targeted but at the same time coordinated intervention as

[1] COM(2009) 8 final
[2] COM(2011) 144 final

possible, reducing the effects of incidents and accidents and by saving lives. The system may also be deployed so that it yields direct benefits in terms of greater security and protection against piracy and terrorist threats, supporting the protection of EU interests in critical areas.

By contributing to improved safety, and especially through their potential to help reduce the risk of serious maritime spillages, the policy options are consistent with environmental goals.

In relation to other EU policies of the maritime sector, while option 2 contributes to the implementation of the Reporting Formalities Directive as it will not interfere with the process, there is a risk that a full recast (option 3) might have a negative impact upon the achievement of the same.

Option 4, the step wise approach, also does not interfere but allows a better coherence with the overall objectives in the Transport White Paper, as with these technological developments and the implementation of the NSW, the role of the SSN system is brought to a completely different level. While maritime vessel monitoring was the starting point, the developments allows moving towards an interconnected system of national authorities that will work in a harmonized manner to facilitate not only safety but also maritime transport and traffic and beyond; the system is moving towards the next generation Union maritime information and exchange system.

8 Conclusions – Preferred Options

The impact assessment on the selected measures and policy options was undertaken with the objective of providing evidence on the advantages and disadvantages of each measure and related policy options by assessing the potential impacts.

8.1 *Policy options and measures*

Four policy options have been defined:

1. Baseline: continued implementation (no policy change) and promotion of best practices, exchange of experience and technical support, i.e. continuation of all on-going actions.

2. Amendment: amendment of the Directive by comitology and adjustment of the Governance structure. Amendment consists of seven new measures, including changes to the technical annex harnessing the experience gained in operating the SSN system and the technological advancements made enabling integrated maritime services, revisions of governance structure via the HLSG, the launch of a pilot study to serve EUROSTAT statistical requirements, as well as the launch of training initiatives.

3. Full recast and restructuring of the Directive, involving twelve new measures ranging from a name change for the Directive, a new Title for Integrated Maritime services, and several measures to clarify procedures and tightening enforcement.

4. A combination of options 2 and 3, involving first, the amendment of the Directive, and second, a later recast of the Directive, made with the benefit of the experience gained from the operational link between the SSN and NSW.

8.2 *Outcome*

Option 1 is considered too ineffective, as it is only able to address a few aspects of the problem definition, related to familiarity with the system. As such it might be able to improve usage somewhat, but it does not allow the full potential of the system to be reached.

Option 3 is, in principle, the most effective in terms of achieving the objectives, but it is not considered advantageous by stakeholders to place a full revision inside the critical path of the RFD process. Therefore and in relation to other EU policies of the maritime sector, while option 2 contributes to the implementation of the Reporting Formalities Directive, there is a risk that a full recast (option 3) might have a negative impact upon the achievement of other EC legislation concerning reporting formalities and the national single windows.

Option 2 provides efficiency and simplicity in approach to achieve many of the objectives, with relatively small additional investments, mainly adjustment costs for EC/EMSA and MS authorities, and without interfering in the RFD implementing process.

So far the Directive has followed a stepwise approach. Its design has allowed for this. This Impact assessment analysis suggests that this should be continued.

The outcome is therefore to recommend Option 4, with Policy Option 2 the first step, followed by Policy Option 3.

The first step (option 2) involves a low cost approach to provide extra benefits and improve utilisation, without interfering with the important ongoing work to implement the national single windows as required by the reporting formalities and to ensure the interlinking between the NSW and the SSN system. This would respect the main outcome of the consultations without jeopardising achieving the objectives. The development has so far much built on experience in using and operating a system and this approach would then continue also benefitting from the experience of the functioning of the NSW in the SSN system. As such this paves the way for the next step and might even support the functioning of the Reporting Formalities Directive.

The second step would be to consider adding the measures indicated in option 3, however a more holistic approach might be called for taking into consideration other relevant Union law that are or could rely on the SSN system, thereby yielding further utilisation, return on investment and avoiding duplication of systems.

Annex 1: IA Roadmap Problems and Drivers

The following problem definition was the starting point[1] within this study and the further development of the problem definition described in the original roadmap document. The original need to update the existing SSN system arose from the following problems which to certain extent are inter-related:

i. The first problem identified was a **suboptimal use of the SSN system,** by consequence hindering the realisation of a higher return on the investments made both at EU and national level.

Two main reasons have been identified:

First, there is an untapped potential of SSN both in improving:

- the supply side of information by better integration of information provided by different existing tools (such as LRIT, CleanSeaNet, S-AIS, THETIS) and,
- the demand side by opening the SSN system so that it could exchange information with other EU systems and allow access on a more permanent basis to other maritime user groups.

The second reason reflects the main conclusion from the horizontal analysis, which indicates a lack of data quality and verification. There is an untapped potential both in improving the current information quality and verification process.

Safety and security threats faced by Member States in the EU maritime domain would require an enhanced trans-national and trans-sectoral approach to ensure that data is available instantly to the relevant authority for their specific purpose.

ii. The second problem relates to **the need to avoid duplication, overlaps and data inconsistencies of different systems** and resulting inefficiencies in terms of effort, cost and quality. Both at national level and at EU level,

[1] Later adapted, following consultation.

authorities responsible for maritime safety and security (incl. vessel traffic management, search and rescue), accident and disaster response, marine pollution, border control, customs, fisheries control, defense as well as law enforcement (the different users) could make more and better use of the 'core' information related to a vessel and its cargo and movements provided in the SSN system.

For example: i) the Reporting Formalities Directive ; (ii) the new Directive on Port State Control and the link SSN/THETIS (including providing incident reports to THETIS such as port and pilot reports or other relevant incidents for PSC officers) , (iii) the use of LRIT, (iv) the need to ensure that the establishment of any other monitoring system as required by a number of maritime safety legislation (e.g. Port Reception Facilities, Penal Sanctions etc.) and (iv) for new initiatives for example: EUROSUR and the goals of the integration of maritime surveillance (the Common Information Sharing Environment), could be incorporated or made fully compatible, ensuring synergies.

Access to various functionalities or services to be granted to the same user, with regards to technological advancements in this field, requiring a new integrated framework (decisional and technical) which deals with such demands and developments in an efficient way (e.g. need for a single sign-on access and access rights management, inclusion of new data streams etc.)

In addition to the suboptimal use of the system, if this situation is not addressed it may also lead to the development of ad-hoc and different strategies for each user. This will create a clear risk of duplication of resources, funds and efforts but also of possible data and information inconsistencies, and inefficiencies ultimately resulting in reducing the value of the service offered to the different administrations within the MS. This in turn may then impact on the policy goals (e.g. further enhanced maritime safety, border control etc.).

iii. The next problem relates to **implementation issues and the possible need for clarification of certain operational provisions** in the current Directive in particular in relation to the accommodation of ships in need of assistance (including places of refuge) and the corresponding exchange of

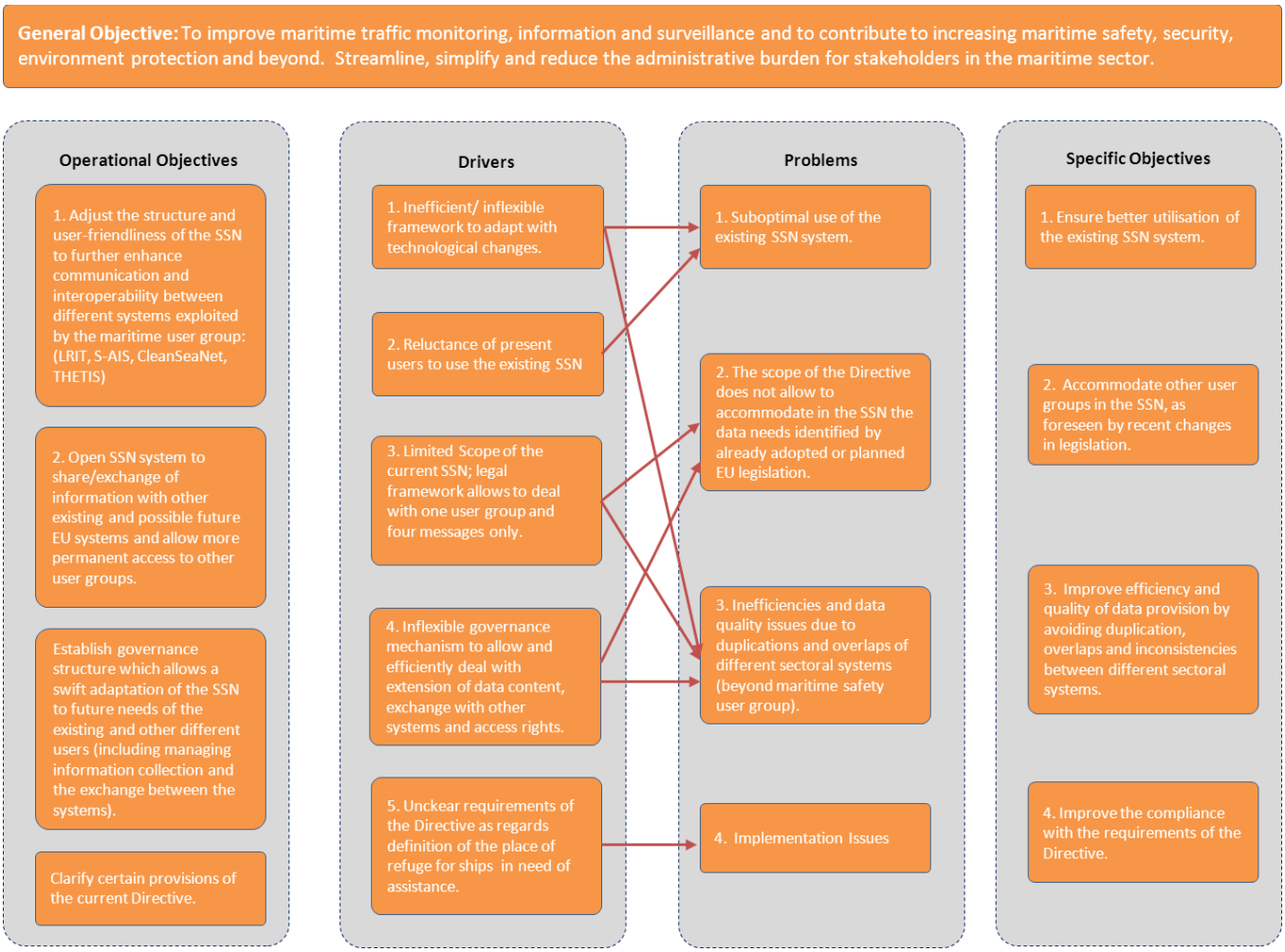
information. The ex-post evaluations indicate that there are some weak areas in the implementation and practical application of the Directive and, the recent MSC Flaminia event shows that the use of SSN for distributing incident reports to Member States on the planned route may need to be reinforced and promoted to avoid parallel channels of communication. Furthermore, the questions raised about the state of the cargo, instant access to the manifest and how to ascertain the accuracy of cargo declarations, may need to be addressed.

iv. Closely linked to the above is the issue of integration of maritime information systems and **the required technical, legal and governance framework.** The future structure should be clearer in the type of systems covered, definitions, data protection rules, and how their data access rights are interlinked and managed. The existing structure builds on many ad hoc solutions and projects, but there is a certain 'tension' and 'lack of clarity' in its management and this creates grey-areas which in turn hamper the further development and use of the system. There is therefore a need to explore interoperability and synergies (including standardisation issues) between these systems both centralised and de-centralised, and linked regional reporting systems, thus paving the way for enhanced services.

If the aforementioned problems are not taken into account, the risk of duplication and overlap (effort, cost, quality) will increase. It is clear that if all systems and policies keep on developing independently, this will lead to the uncoordinated accumulation of systems, each one exclusively used for a specific purpose. The consequence would be an inefficient use of resources, duplication of efforts, high costs, confusion and lack of data quality which all lead to sub-optimal services and in turn lead to the risk of gaps in the respective areas with consequences for the effectiveness of the policy (e.g. safety related decision taken with the support of vessel traffic monitoring and information systems). Therefore, if the above problems are not addressed, objectives and measures in a number of policies, both in relation to the maritime user community and other users, will either not be fully met or will not be done in a cost effective manner. The potential of simplification and reduced administrative burden will thus not be exploited.

The figure below depicts the initial analysis of the problem definition, identifying the drivers and consequences of the problems. As the Impact Assessment process, as set out in the guidelines, is iterative this preliminary analysis may be updated in the course of the study.

Figure 0-1: RoadMap Problem Definition (now updated)



Annex 2: Consultation Analysis

Stakeholder groups

Three main categories of VTMIS stakeholders can be identified:

- The VTMIS community, i.e. national competent authorities responsible for implementing the VTMIS Directive.
- Industry stakeholders, predominantly from the ports, forwarders, shipping lines and shipping agents.
- Other public sector stakeholders, involved in surveillance of maritime transport and traffic.

Amongst these stakeholders, all parties share a common interest in maritime safety, and also in the effective use of operational information without duplication. However, their roles and access rights differ. The information flow is from business to government, with SSN providing the capability for sharing information amongst Member States.

Methodology followed

In 2013 a series of consultation events were organised.

Date	Event
15 May	Place of Refuge Group Meeting in Lisbon
7 June	Stakeholder Conference, Lisbon
18 June	Meeting of the eMS
19 June	High Level Steering Group
20 June	Dedicated consultation with members of HLSG
27 June	Industry consultation with representatives of European seaports, ship-owners, shipping associations, tanker owners and oil carriers.

A problems and issues document was circulated in advance, followed by a series of questionnaires.

A common format was used for all stages of the consultation, in which issues were discussed according to five broad headings:

1. Sub-optimal use of SSN – either because of barriers to access, problems related to data quality, or duplicated reporting.

2. Implementation Issues – related to aspects such as the requirement to publish information about operational contacts and ships which have been exempted.
3. Opening up SSN to a wider set of users.
4. Harnessing existing and future legal and technical developments.
5. Integration and governance.

Stakeholder Conference

In Lisbon, at EMSA's headquarters, a stakeholder conference was organised on the 7th June, concerning "The Union Vessel Traffic Monitoring and Information System".

DG-MOVE and EMSA introduced the consultation by setting out the technical and political context, and explaining the current challenges.

What has started as an initiative to gather information on ship positions in order to prevent maritime disasters had now matured into a fully operational system. The challenge now was how to make better use of the system. Europe is facing an economic crisis, and a new series of e-Maritime initiatives are being introduced to reduce transactions costs within the Single Market, as a means of stimulating growth and maritime transport.

Many Member States are currently setting up national Single Windows. After the 1st June 2015 this will be the only option, and there must be a way for Member States to share information.

Meanwhile EMSA has developed IMDatE, a system by which different data streams can be combined into a single interface, and thus substantially raising the potential for the monitoring of vessel traffic within a much broader range of uses, with SSN at the core.

Together, these developments alter the context for the VTMIS Directive in a way that could not have been envisaged in 2002.

In the afternoon session, the participants were asked directly to exchange views on the five broad categories of issues.

a) Sub-Optimal Use

Some participants felt that SSN was still a one-way system. Industry provides information to the authorities. Potential users such as ports have access issues and the format is not convenient.

One MS asked that the information be made available for the port and the ship. "That is real two-way." Access issues were recognised, also quality issues in relation to data for hazardous materials.

Others pointed towards organisational culture as the root of the problem. Through data sharing some feel that they are giving away their competence and that is difficult to incorporate into a regulation.

We need to take a step back and decide what we want to achieve, otherwise we shall get suboptimal use.

b) Implementation Issues

In this context, the main topic discussed was the treatment of exemptions – ships on regular scheduled services which are exempted from reporting pre-arrival and HAZMAT information. Some asked for exemptions to be registered for all to see. Others saw it as a bilateral issue between two states.

c) Opening up to other user communities

On this issue, some participants saw nothing wrong with the current scope. Information should only be available for the main user group. We should not lose focus, and risk making the situation more complicated.

Others disagreed. We are not losing focus if we reuse what is already there. Duplication is the consequence of not opening up. Even if the safety community does not see a need for opening up, other authorities do.

d) Existing and new legislative and technical developments.

Some felt that because technology evolves naturally, the Directive should not mention technology. Task orientation requires an open view towards use of technology. Adding technologies permitted greater scope for tailoring solutions to needs. However it was also argued that more information may

be superficial. Can we measure if it results in greater safety and efficiency?

e) Integration and Governance

Participants commented on the IMDatE presentation, stating that it was useful to have a second level of integration. Each domain could develop optimised tools for specific tasks. However, governance requirements might be different for different sectors.

Direct Consultation – Stakeholder Conference

A first set of questionnaires were circulated to participants of the stakeholder conference, allowing more time for consideration of the issues discussed at the conference. The format follows the same five point structure.

Sample Size
It is important to note that the consultation has taken place with a small number of national experts, and with industry associations. The results shown below are based upon a small number of detailed responses. The results need to be interpreted in the wider context of the full set of consultations. They are indicative of the sentiments expressed.

Responses to the questionnaire meant for the conference were received from 12 Member State authorities, and one transport industry association. Responses were free-form, but they can be summarised as follows:

Issue: Sub-optimal use

Question: What are the main reasons for the sub-optimal use of the EC VTMIS?

Respondents cited the following reasons (non-exhaustive):

- Lack of access.
- Lack of user-friendliness.
- Unreliability of certain information.
- Adequate national systems.
- Administrative burden for data providers.
- Lack of resources in MS.
- Implementation still incomplete.
- Lack of training.
- Focus on data gathering (not dissemination)

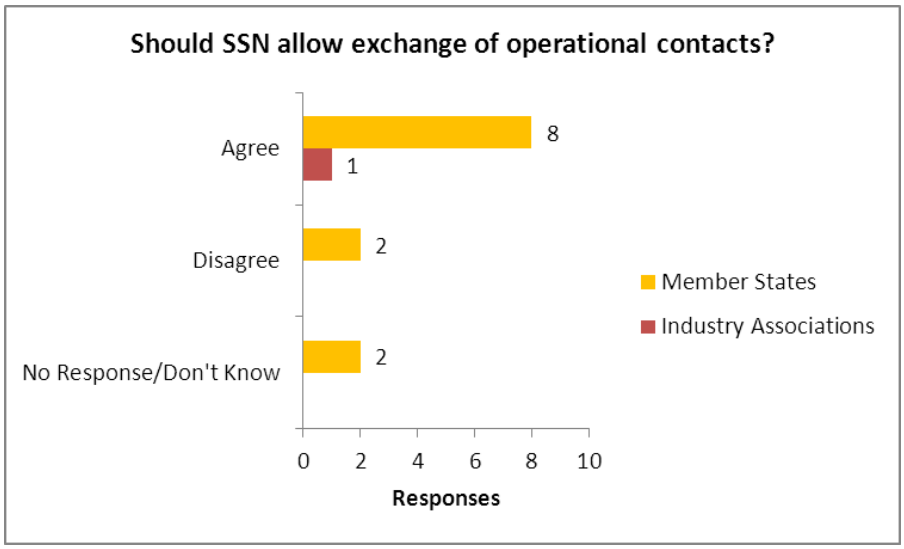
Issue: Implementation Issues - Clarification

Question: Do you believe that the role of SSN as a tool to exchange vessel traffic monitoring information should be clarified to include:

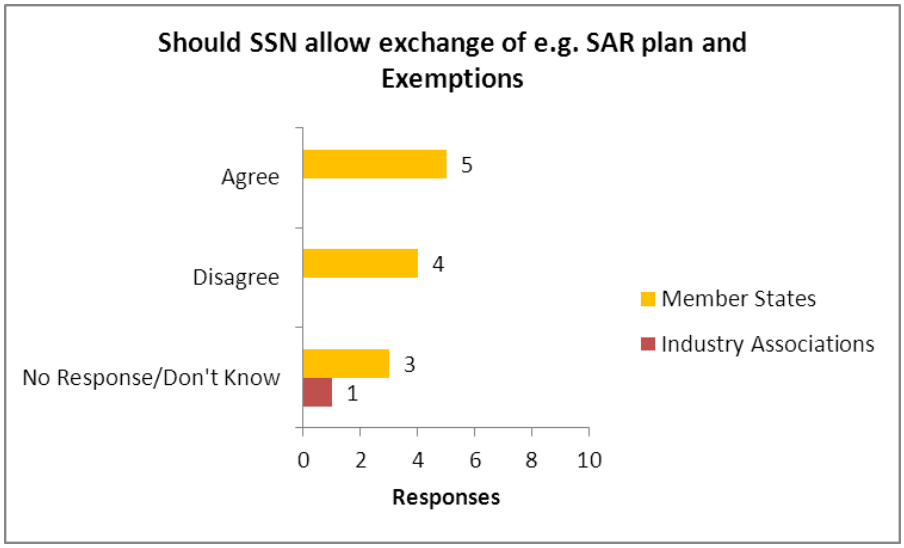
a. Operational contacts (e.g. place of refuge authorities, ports, coastal stations) referred to in the VTMIS Directive? and/or expanded to include:

b. Further operational information (e.g. SAR cooperation plan, exemptions)?

Q: Do you believe that the role of SSN as a tool to exchange vessel traffic monitoring information should be clarified to include operational contacts (e.g. place of refuge authorities, ports, coastal stations) referred to in the VTMIS Directive?



Q: Do you believe that the role of SSN as a tool to exchange vessel traffic monitoring information should be expanded to include further operational information (e.g. SAR cooperation plan, exemptions)?

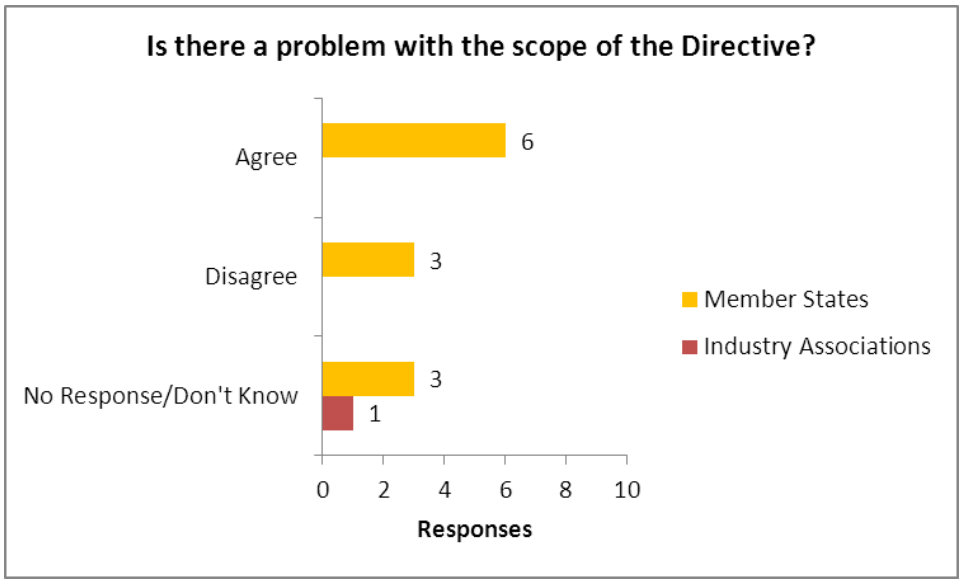


Issue: Opening up to other user communities.

Question:

a. In your view, is there a problem with the present scope of the VTMIS Directive?
b. In your view could an opening up of the VTMIS Directive and the current SafeSeaNet system to other user communities have positive benefits and impacts at national level?
c. Would you favour the additional possibility to allow industry (e.g. ships owners) and public access to certain specific data and information in a securely regulated manner?

Q: In your view, is there a problem with the present scope of the VTMIS Directive?



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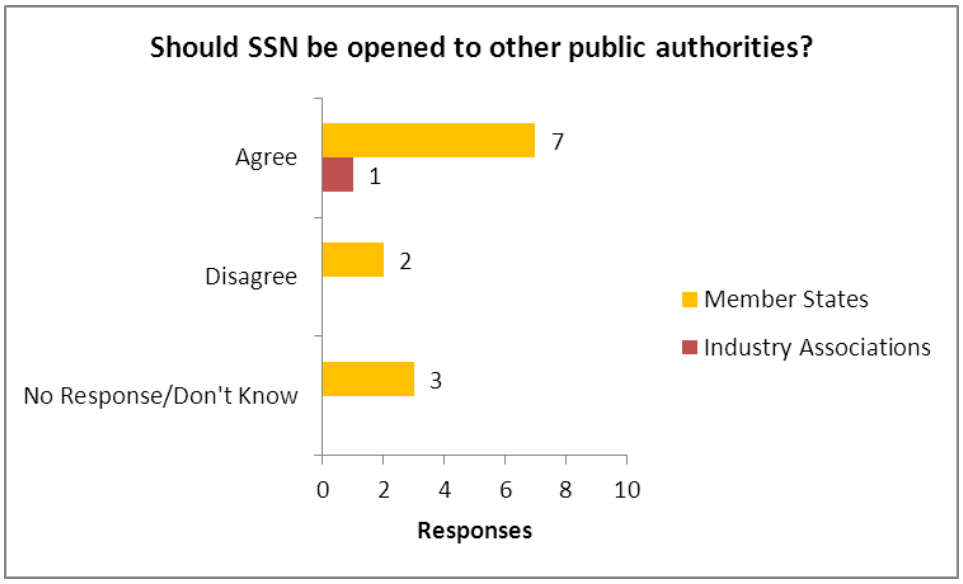
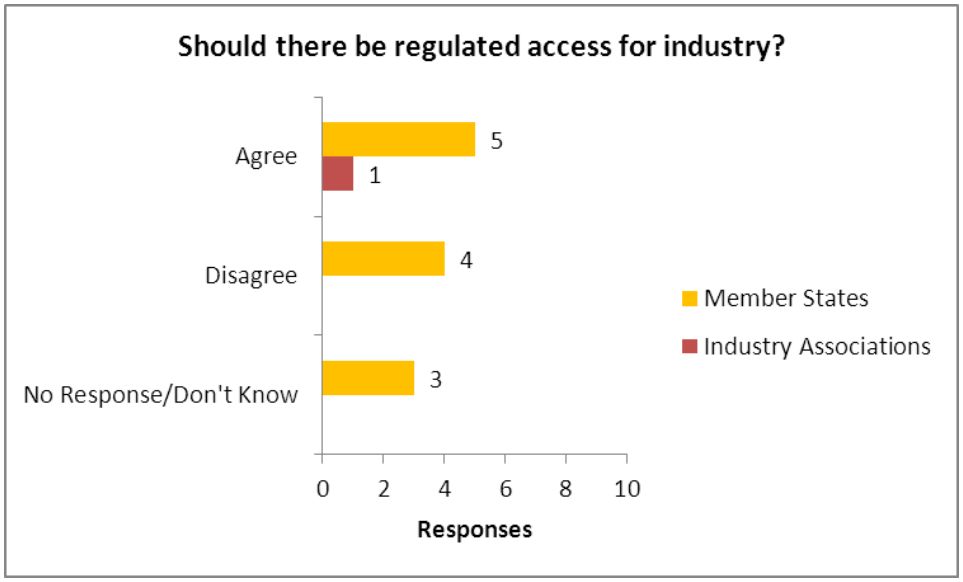


Q: Would you favour the additional possibility to allow industry (e.g. ships owners) and public access to certain specific data and information in a securely regulated manner?



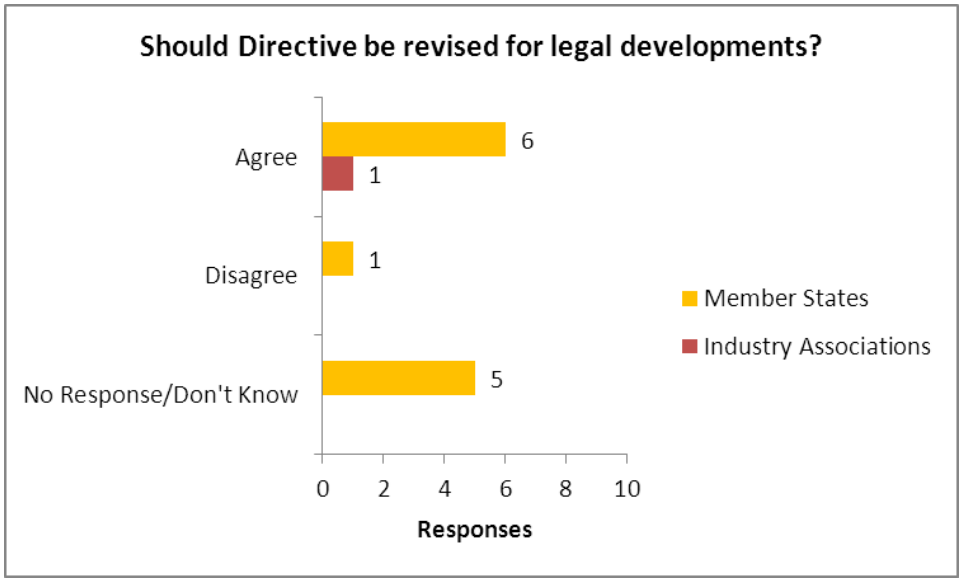
Considering the three parts to this question, it is noted that different respondents interpret the first part differently. Some state that the scope of the Directive is adequate, but also call for opening up for other user groups. Others find issues with the scope, but do not see value in opening up SSN. Overall there is an implication here that the scope of the Directive in terms of who can access SSN is not interpreted the same way by all.

Issue: Harnessing existing and future legal and technical developments

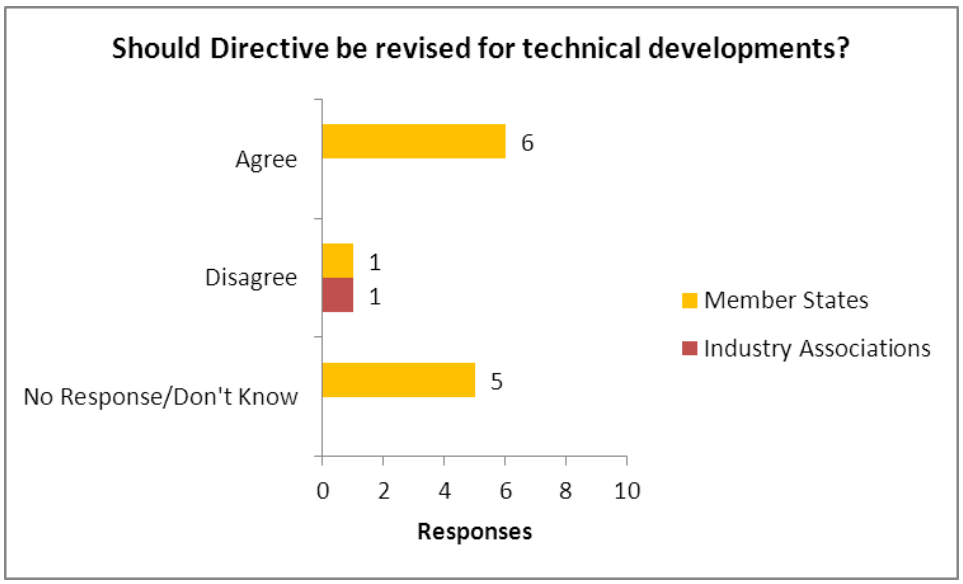
Question: Do you believe the VTMIS Directive should be revised to:

a) allow reference for the inclusion of already existing and future related legislation?
b) allow the inclusion of both new and evolving related systems and technologies?

Q: Do you believe the VTMIS Directive should be revised to allow reference for the inclusion of already existing and future related legislation?



Q: Do you believe the VTMIS Directive should be revised to allow the inclusion of both new and evolving related systems and technologies?

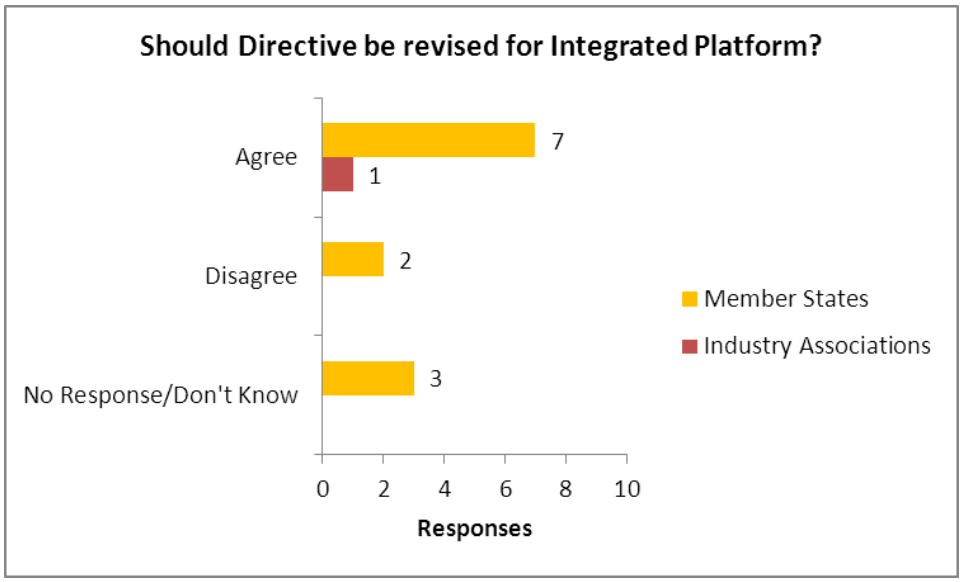


Most generally agree that legal and technical developments need to be reflected, but this is typically qualified support. They are not clear what is meant by future legal developments,

and they would need to be convinced of the benefits. They are also keen to stress that a revised Directive should be "future-proofed" to avoid this situation in future.

Issue: Integration and governance

Question: Do you believe that the VTMIS Directive and SSN should be revised to administer and regulate an integrated maritime platform (combining and leveraging on the benefits of the existing maritime information systems) providing enhanced services to the VTMIS community and other maritime related sectors?



Although the question tends to stress the governance aspects of an integrated maritime platform, the responses tend to focus on the technical advantages, and the positive responses tend to be qualified by requirements such as demonstration of added value.

Direct Consultation – HLSG

After the HLSG meeting (Brussels 20 June), a new questionnaire with more detailed questions was formulated. The subject matter was similar to the first (7 June, Lisbon Conference) questionnaire, so some MSs did not respond a second time. Only five responses were collected, so we have listed key points rather than counting the answer categories.

The structure follows the previous format with five main groups of issues.

Issue: Sub-optimal use

Question:
a. What would you suggest to be amended within the VTMIS Directive to possibly increase the operational use of SafeSeaNet?

- Usage is not really sub-optimal – data is already in national systems.
- No changes required – problem originates from lack of user requirements at the beginning.
- Incorporate other user functions.
- Linkage with FAL.
- Rephrasing of Article 14c – make it clear that data can be requested for day to day business.

b. How can we ensure that the SSN reports (including the HAZMAT) are accurate and available on time? How could the shipping industry offer the transparency and accuracy regarding the cargo they carry to avoid such doubts and/or delays?

- Directive is clear enough.
- Sanctions for companies filing errors.
- Working group to investigate.
- Instruction and training.
- EC to inform shipping companies of their responsibility.

c. Do you believe that the Directive should regulate the re-use of the data available in SSN? If yes, in which areas?

- Most believe that re-use is a way to improve accuracy and reduce burden.
- MRS should be able to request data in advance.
- FAL makes it necessary.
- Need thorough review of reporting procedures.

Issue: Implementation

a. Do you believe that SafeSeaNet should be used for sharing information on places of refuge? Could such use support MSs in fulfilling their obligations in relation to Article 20a.4 of the Directive?

- No - contacts in IMO GSIS should not be repeated.
- No – over-regulation will result.
- Yes – information is useful, but shipping companies cannot access SSN.
- Possibly – but not much added value.

b. Should the VTMIS Directive be amended to expand the role of SSN as a tool to exchange additional operational information (e.g. SAR cooperation plan)?

- No – only relevant bilaterally.
- No – sufficient tools exist.

Issue: Opening to other user groups

a. Do you believe that the VTMIS Directive should allow SSN to be open to:
the non-VTMIS functions? Industry? Public? Please provide arguments for each of your replies.

Non-VTMIS	Industry	Public	Comments
Yes	Yes	No	
Yes	Yes		What is need for public access?
No	No	No	
Yes	No	No	Commercial data available for industry and public. (Ports are considered authorities)

			Should be looked into.

b. What, in your opinion, should be the scope (consultation, exchange of existing SSN information, input etc.) of the opening of the VTMIS Directive to non-VTMIS functions? Industry? Public?

- Authorities should have full access
- Ports, ship owners, ships' agents should have access.
- Customs, defence, border control, fisheries, ports, researchers.

c. What, in your opinion, should be the conditions for use/access to the SSN for: - non-VTMIS functions? Industry?

- Should follow confidentiality rules.
- Shipping lines should be able to access data about themselves.
- Ensure security of data.
- Access rights set by HLSG.

d. Do you believe that SafeSeaNet should be used for statistical purposes (e.g. supporting EUROSTAT statistical publications)?

- Yes, if possible.
- Is there compelling need?
- No, statistics should be analysed first by maritime authorities.
- Yes, if added value can be demonstrated.
- Yes.
- Yes, if more efficient than current means – no new obligations.

Issue: Harnessing existing and future legislation and technology.

a. Do you believe that references should be included in the Directive in relation to the already existing and relevant legislation (e.g. PSC, Port Reception Facilities, Reporting Formalities Directive etc.)?

b. Do you believe that the VTMIS Directive should be revised in order to accommodate relevant evolving systems and technologies (e.g. CleanSeaNet, S-AIS, LRIT, VMS)?

- All respondents answer positively, with some caveats.

Additional remarks are:

- Directive should allow for technical evolution.
- SSN should be only electronic motorway for exchanging maritime data.
- SSN should offer comprehensive legal framework.
- Expansion should be demand driven.

Issue: Integration and Governance

a. Do you believe that the VTMIS Directive should be revised to reflect the need for an interoperable platform, combining and leveraging on the benefits of the existing maritime information systems and emerging technologies, for providing a VTMIS user with added value maritime services?

- No. Should be user driven.
- Hard to say at this stage.
- Yes.
- Yes.
- Could be helpful, but is revision necessary?

b. Do you believe that the rationalisation of existing databases and registries together with the integration of maritime information data (from existing maritime information systems and emerging technologies) through an interoperable and standardised environment will: - facilitate the provision of an improved service to the VTMIS community? (i.e. one web environment for accessing all the information a user is entitled to, a standardised machine to machine interface flexible enough to support the expressed needs, a vessel database accessible to all entitled users, etc.) - assist in reducing costs at national and EU level?

- No. Majority of users only need national data.
- Yes.
- Yes.
- Could be helpful in reducing costs.

c. Do you believe that the VTMIS Directive should be revised to include the governance principles associated to the integration? (e.g. a governance body like the SSN HLSG administering and regulating the provision of integrated maritime services including, inter-alia access rights management and information security of cross border data exchange within the remit agreed by the competent bodies responsible for the other systems like the LRIT NCA group, CSN group etc.)?

- Yes
- Yes.
- A body like HLSG could be supported.

- Yes.
- HLSG should have revised (broader) role.

d. Would you be interested in a service offered by an integrated maritime platform (combining and leveraging on the benefits of the existing maritime information systems and data through a securely and regulated access) providing the integration of many sources of data to facilitate the provision of enhanced services (e.g. fleet tracking service, information service on port calls etc.)?

- An enhanced data request mechanism to SSN will be sufficient.
- Yes.
- Yes.
- Might be helpful

General Issues

a) Where do you see the strengths and weaknesses in the current system?

Strengths	**Weaknesses**
	System only gathers data. No operational need.
SSN is at core of maritime monitoring.	Focus on reporting, not operational use.
SSN covers all EU/EUA	Lack of flexibility
Real time info and reports accessible quickly.	SSN does not cover high seas/ approaches.
Direct link with THETIS	Communication procedures between MS are not described, when an accident occurs.

b) Do you see any other areas where there may be a need for changes or clarification in the VTMIS Directive?

- Article 2.2.c has no connection with content of Directive.
- Annex 1 could be reduced to IMO reference.
- Distinguish vessels calling at EU ports or just transiting.

Consultation with Industry

Ranking of Issues

How important do you rank the issues below:
Answer 1-5 (non-issue to very important)

a. Lack of access to SSN data
b. Range and scope of information found in SSN
c. Accuracy of information in SSN
d. SSN data quality
e. Extent of reporting burden

Issue	Comments
A. Lack of Access	(Without access, difficult to evaluate other issues.) Ranked Low to medium. Ports have limited but improving access. Seafarers do not need access information currently being stored.
B. Range and Scope of Information	It depends.
C. Accuracy	Ranked medium to high. Quality of data needs to be ensured.
D. Data quality	As above.
E. Reporting burden	Ranked highest. No additional burden should be placed.

Issue: Sub-optimal use

a. Would you use the information available in SafeSeaNet should you have access to it? If yes, for which purpose?

- Difficult to judge, since access is currently limited.
- Yes, if reliability can be ensured.
- Data can complement existing port systems, or add value for ports where a community system is not currently viable.
- Care is needed to avoid anti-competitive practices.

b. How could the information provided by industry (e.g. ports, ship-owner, agents) be better ensured and further improved (data quality) in cooperation with the national authorities?

- Harmonisation of reporting in 2010/65 may improve reporting standards.
- Most accurate arrival data resides in ports – propose 'pull' system.
- Reliance on a single system may lead to confusion.

c. Have you identified duplicated reporting? If yes, which areas are affected? Could SSN be used to address this issue?

- Many reports require HazMat information over and above that
  already required. SSN could be used for this.
- Duplication is a fact of life.
- Duplicated reporting is a consequence of the different stakeholders involved in the handling of vessels.

Issue: Implementation

Would you be interested in having access through SSN to information such as:

- Operational contacts (e.g. competent authorities, place of refuge authorities, ports, coastal stations) referred to in the VTMIS Directive?

- Further operational information (e.g. exemptions etc.)?

- Access to operational contacts could be useful.
- Contact information is useful, but not via SSN.

Issue: Opening up

a. Would you be interested in the opening up of the VTMIS Directive for the industry to have access to, in a securely regulated manner, the SafeSeaNet system? If yes, which industry sector do you belong to? Which SSN information would you like to access? –Ship positioning (AIS, MRS etc.) –Hazmat (dangerous and polluting goods) –Pre-arrival, arrival, and departure –Other information (e.g. incident reports).

- Certain information needs to be controlled. Data that is available in open source could be in open area.
- Present scope needs to be maintained.
- Difficult to serve B2B and B2G in one system.
- Position data is already available openly.
- Hazmat and incident reports should be confidential.

b. For which purpose would you need such access?

- Care is needed re competition issues.

c. Do you foresee requirements (operational or legal) that justify the request for accessing SSN data?

- Difficult to judge. How to decide "need to know" basis?

d. What are the benefits you foresee in accessing SSN data?

- Statistical analysis of casualty data.
- Ability to access all relevant data in one system reduces reporting burden.

e. Do you foresee a need or have experience in using commercial products for accessing data that SSN can supply (e.g. AIS, Pre-arrival, arrival, departure etc.)? If yes, do you have cost estimations for accessing such commercial products?

- No opinions offered.

f. Would you be in favour of granting public access to certain specific data and information provided by ports, ship owners, agents in a securely regulated manner? If yes which ones (e.g. pre-arrival, arrival, departure information)?

- There is commercially sensitive data which should remain confidential.
- Some information could be published.
- Should demonstrate need.
- What is definition of 'securely regulated'?

Issue: New Legislation and Technology

Do you believe the VTMIS Directive should be revised to:

a. refer to any other specific EU legislative instrument which is applicable to your sector. If yes which one(s)?

- 2010/65 is main priority. Should not change 2002/59 until reporting formalities are implemented.
- Should not use vessel monitoring directive outside main scope. E.g. emissions monitoring.

b. allow the inclusion of both current and new systems and technologies to allow for other sources of data to be exchanged in SafeSeaNet?

- New systems and technologies should be incorporated.
- Agree in principle with integration.
- But, need careful evaluation.
- Directive should allow for technological developments.

Issue: Integration and Governance

Would you be interested in a service offered by an integrated maritime platform (combining and leveraging on the benefits of the existing maritime information systems and data through a securely and regulated access) providing the integration of many sources of data to facilitate the provision of enhanced services (e.g. fleet tracking service, information service on port calls etc.)?

- May be beneficial.
- Single source would be helpful.
- Unlikely to be used for fleet tracking.

General Questions

a. Do you see any other areas where there may be a need for changes or clarification in the VTMIS Directive or to SafeSeaNet itself?

- Information concerning vessel draft should be included.
- Ensure higher quality of data.

b. Where do you see the strengths and weaknesses in the current system?

- Limited access is a weakness.
- Combining variety of data sources for tracking ships is a strength.
- Reliability of HAZMAT data is a weakness.

c. Would industry have other information they believe could be useful to complement what is available? Would they be willing to share?

- Doubtful for commercially sensitive information.
- Could be used in a positive way for reporting of pollution by ships.

d. How do you see the future development of the maritime monitoring systems (e.g. VTMIS and Reporting Formalities Directive (2010/65/EC))?

- Safer maritime environment.
- Implement 2010/65 first.
- Reduce administrative burden.

Annex 3: Legal Analysis

Introduction

During consultation and discussions it has become evident that there are some perceptions relating to the provisions of the VTMIS Directive and the manner in which SSN is regulated within that Directive. This arises now, in part, because of the implications of the Reporting Formalities Directive, which foresees a high degree of information sharing as the means to reduce administrative burdens for shipping lines. SafeSeaNet is positioned to be the "(only) electronic motorway for exchanging maritime information between the MS and other end-users[1]." And yet, it is seen by a significant number as a dedicated system for the maritime safety community, in which information is exchanged subject to strict limitations. For many consultees, the implementation of the reporting formalities directive is currently the priority, but to what extent is this impeded while there is still a lack of clarity over information sharing within the VTMIS Directive.

Before analysing the VTMIS Directive itself, it is necessary to understand the principles set out under the Reporting Formalities Directive.

I. Reporting Formalities Directive

Directive 2010/65/EU of the European Parliament and of the Council of 20 October 2010 on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC Text with EEA relevance.

Preamble

In the preamble, Whereas paragraph 2 explains the objectives to facilitate maritime transport, to reduce administrative burdens and to simply and harmonise reporting formalities to the greatest extent possible. Paragraph 5 introduces the objective of deeper cooperation between authorities, and lists examples such as:

[1] Comment made by MS during consultation.

- Customs
- Border control
- Public health, and
- Transport authorities

They are set the objective of making the most efficient use of electronic information exchanges in order to foster a European maritime transport space without barriers.

Paragraph 10 mentions SafeSeaNet, and makes clear that this is the system to be used for exchanging data between authorities. Paragraph 26 then stresses the need to protect commercial and personal data. "Appropriate access control systems" are declared as the means by which to achieve data protection.

References are made to Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data and Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data.

Whereas:
(2) For the facilitation of maritime transport and in order to reduce the administrative burdens for shipping companies, the reporting formalities required by legal acts of the Union and by Member States need to be simplified and harmonised to the greatest extent possible. However, this Directive should be without prejudice to the nature and content of the information required, and should not introduce any additional reporting requirements for ships not already under such obligation according to legislation applicable in Member States. It should deal solely with how the information procedures can be simplified and harmonised, and how the information could be gathered more effectively.

(5) Member States should deepen the cooperation between the competent authorities, such as their *customs, border control, public health and transport authorities* in order to continue to simplify and harmonise reporting formalities within the Union and *make the most efficient use of electronic data transmission and information exchange systems*, with a view to the, as far

as possible, *simultaneous elimination of barriers to maritime transport and the achievement of a European maritime transport space without barriers*.

(10) The SafeSeaNet systems established at national and Union level should facilitate the reception, exchange and distribution of information between the information systems of Member States on maritime activity. To facilitate maritime transport and to reduce the administrative burdens for maritime transport, the SafeSeaNet system should be interoperable with other systems of the Union for reporting formalities. The SafeSeaNet system should be used for additional exchange of information for the facilitation of maritime transport. Reporting formalities regarding information for solely national purposes should not need to be introduced in the SafeSeaNet system.

(26) Access to SafeSeaNet and to other electronic systems should be regulated in order to protect commercial and confidential information and without prejudice to the applicable law on the protection of commercial data and, in respect of personal data, Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data [13] and to Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data [14]. The Member States and the Union institutions and bodies should pay particular attention to the need to protect commercial and confidential information through appropriate access control systems.

Reporting Formalities Directive

A clear reference to SafeSeaNet and VTMIS Directive 2002/59/EC is made in Definition (e) within Article 2. SafeSeaNet is defined to be "the Union maritime exchange system". The definition is not qualified with any limitations related to the data being exchanged, nor the technical or organisational origins of such data, nor the access rights. SafeSeaNet is "the", not "a", designated exchange system for (Whereas 10) the facilitation of *the reception, exchange and*

distribution of information between the information systems of Member States on maritime activity.

Article 2 – Definitions, p4.
(e) "SafeSeaNet" means the Union maritime information exchange system as defined in Directive 2002/59/EC;

In Article 5, the deadline for implementing an electronic regime for reporting formalities is set as the 1st June 2015. Member States have raised the need to achieve this transition consistently during consultation. Article 5 goes on to describe the concept of the single window, how shipping lines will be able to report information once and rely upon that information being disseminated between "various" competent authorities, linked via SafeSeaNet.

Article 5. 1. P4, Electronic transmission of data
1. Member States shall accept the fulfilment of reporting formalities in electronic format and their transmission via a single window as soon as possible and in any case no later than *1 June 2015.*

This *single window, linking SafeSeaNet, e-Customs and other electronic systems*, shall be the place where, in accordance with this Directive, all information is reported once and made available to various competent authorities and the Member States.

Articles 6.1 and 6.3 elaborate these points. The data should be made available and relevant parts shared via SafeSeaNet. A further reference is made to 2002/59/EC. Certain information arising from listed Customs regulations appear exempted, but the information should be made available on request.

Article 6.1. p4, Exchange of Data
1. Member States shall ensure that information received in accordance with the reporting formalities provided in a legal act of the Union is made available in their national SafeSeaNet systems and shall make relevant parts of such information available to other Member States via the SafeSeaNet system. Unless otherwise provided by a Member State, this shall not apply to information received pursuant to Regulation (EEC) No 2913/92, Regulation (EEC) No 2454/93, Regulation (EC) No 562/2006 and Regulation (EC) No 450/2008.

Article 6.3. p5
3. The underlying digital format of the messages to be used within national SafeSeaNet systems in accordance with paragraph 1 shall be established in accordance with Article 22a of *Directive 2002/59/EC.*

In Article 8, member States are required to ensure confidentiality of data.

Article 8.1. p5, Confidentiality
1. Member States shall, in accordance with the applicable legal acts of the Union or national legislation, take the necessary measures to *ensure the confidentiality* of commercial and other confidential information exchanged in accordance with this Directive.

Article 15 reveals a further, possible extension of the Directive to cover electronic reporting by inland waterway transport. It implies that further technical and user-related changes, extending the active community beyond maritime transport are being considered. The need for compatibility between River Information services (RIS) and the (maritime) data referred to in this Directive suggests a possibility that the information might be exchanged within SafeSeaNet.

Article 15, Report

The Commission shall report to the European Parliament and the Council, by 19 November 2013, on the functioning of this Directive, including on the:

(a) possibility of extending the simplification introduced by this Directive to cover inland waterway transport;
(b) compatibility of the River Information Services with the electronic data transmission process referred to in this Directive;
(c) progress towards harmonisation and coordination of reporting formalities that has been achieved under Article 3;
(d) feasibility of avoiding or simplifying formalities for ships that have called at a port in a third country or free zone;
(e) available data concerning ship traffic/movement within the Union, and/or calling at third country ports or in free zones.

The report shall, if appropriate, be accompanied by a legislative proposal.

Annex of Directive 2010/65/EU

The annex of the Reporting Formalities Directive sets out the scope, according to the legal acts to be included. From this it is possible to see which user communities are covered.

They are:

1 Ship notifications – VTMIS Community.
2 Border checks – Border Control.
3 Dangerous and polluting goods – VTMIS Community, Environment.
4 Waste and residues – Environment.
5 Security Information – Law enforcement.
6 Entry declaration – Customs.

Of the user communities being considered within this study, only defence and fisheries are excluded from this set. Defence is covered by a different legal base. Fisheries are covered by the same legal base, but are not mentioned in 2010/65/EU.

List of Reporting Formalities Referred to in this Directive.

A. Reporting formalities resulting from legal acts of the Union

This category of reporting formalities includes the information which shall be provided in accordance with the following provisions:

1. Notification for **ships arriving in and departing** from ports of the Member States
Article 4 of Directive **2002/59/EC** of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system (OJ L 208, 5.8.2002, p. 10).

2. **Border checks** on persons
Article 7 of Regulation (EC) No 562/2006 of the European Parliament and of the Council of 15 March 2006 establishing a Community Code on the rules governing the movement of

persons across borders (Schengen Borders Code) (OJ L 105, 13.4.2006, p. 1).

3. Notification of **dangerous or polluting goods** carried on board
Article 13 of Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system.

4. Notification of **waste and residues**
Article 6 of Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues (OJ L 332, 28.12.2000, p. 81).

5. Notification of **security information**
Article 6 of Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security (OJ L 129, 29.4.2004, p. 6).

Until the adoption of a harmonised form at international level, the form set out in the Appendix to this Annex shall be used for the transmission of information required under Article 6 of Regulation (EC) No 725/2004. The form can be transmitted electronically.

6. Entry summary declaration
Article 36a of Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community **Customs** Code (OJ L 302, 19.10.1992, p. 1) and Article 87 of Regulation (EC) No 450/2008 of the European Parliament and of the Council of 23 April 2008 laying down the Community Customs Code (Modernised Customs Code) (OJ L 145, 4.6.2008, p. 1).

Conclusions

Directive 2010/65/EU provides a comprehensive picture in which different functions within the national authorities are exchanging data (1) between functions and (2) 'relevant parts' between Member States. Clearly SafeSeaNet is the designated channel for the latter exchange to take place, and data protection is to be implemented via secure access controls.

Within this picture, the goals of simplifying and reducing administrative burdens for shipping lines are clearly stated. Achieving this by 1st June 2015 is the priority.

II. VTMIS Directive

Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC

As demonstrated above, the Reporting Formalities Directive refers to a broad community of authorities interacting within a harmonised data exchange, SafeSeaNet. However, the VTMIS Directive is the legal basis for SafeSeaNet, and is the main subject for analysis within this study. We consider, in the main, those elements which relate to the broadening use of SafeSeaNet, as required in order to facilitate the broader aims of the Reporting Formalities Directive and in the establishment and use of the national single windows.

Currently the Directive is perceived to serve mainly the VTMIS community (maritime Safety, port and maritime security and, environmental protection) with more emphasis upon safety than upon the efficiency of maritime traffic and maritime transport. This seems to stem from the fact that the system, SSN, is regulated in that Directive but does not consider the general concept and architecture of SSN, which is to be the system established for exchange of information in an electronic format in accordance with Community legislation, and hence not limited to the VTMIS users only.

There are different pieces of other Community legislation which refer, directly or indirectly, to the exchange of information between SSN and the other maritime applications such as the link of the National Single Window with SSN by the Reporting Formalities Directive (RFD) 2010/65/EU, the SSN/THETIS interface by Directive 2009/16/EC on Port State Control and, the SSN/CleanSeaNet interface by Directive 2005/35/EC on Ship Source Pollution, and Directive 2000/59/EC on port reception facilities, to avoid duplication of maritime information and monitoring systems.

Directive 2003/98/EC on the "Re-use of Public Sector Information" encourages EU Member States to make as much public sector information available for re-use as possible.

Article 1 sets out the purpose of the Directive. It implies a two-stage process. First it must establish a vessel traffic monitoring system in the Community, and second, there is a stated objective that once established, the system should, enhance (1) the safety and (2) efficiency of maritime traffic and maritime transport. From this statement, it is possible to link the technical implementation of the vessel traffic monitoring system to the achievement of greater maritime safety, traffic, transport and efficiency. Being efficient means "working productively with minimum wasted effort or expense[1]". While the safety objective may be taken for granted in this context, the efficiency objective is striking. It demonstrates consistency and compatibility with the Reporting Formalities Directive. Reducing administrative burdens by simplifying reporting practices through the reuse of information allows shipping lines to work productively with minimum wasted effort or expense. By sharing information at national level it supports the possibility of deepening cooperation between different functions in the maritime domain producing efficiency gains and at the same time the possibility of sharing or exchanging relevant information across borders, for similar efficiency gains in other Member States. Hence a reduction of administrative burden arises also for the administrations involved.

Article 1, Purpose

The 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.

Member States shall monitor and take all necessary and appropriate measures to ensure that the masters, operators or agents of ships, as well as shippers or owners of dangerous or polluting goods carried on board such ships, comply with the requirements under this Directive.

[1] Oxford English Dictionary.

The first reference to SafeSeaNet is made in Article 3, as a definition. Here it is clearly stated that 'SafeSeaNet' is "the" Community maritime information exchange system. Therefore it is considered to be the single and central platform upon which relevant information is to be shared. It is not defined in terms of the data being exchanged, but as the exchange itself. As such this is wholly consistent with Article 2 of 2010/65/EC.

Article 3, Definitions
(s) '*SafeSeaNet' means* the Community maritime information *exchange system* developed by the Commission in cooperation with the Member States to ensure the implementation of Community legislation;

Title I, Ship Reporting and Monitoring sets out the protocols and technical requirements for monitoring ship movements. Title II, Notification of Dangerous or Polluting Goods on board ship (HAZMAT), sets out requirements for the declaration of hazardous materials (HAZMAT) to the authorities. Within the specific context of notifying authorities regarding hazardous material, Article 14 then refers to the computerised exchange of data between Member States. The most straightforward interpretation of this article is that it refers to data being exchanged electronically between Member States concerning hazardous materials.

Member States are required to configure their national systems so that they are collectively compatible, so that requests for information by one Member State to another regarding hazardous materials can be fulfilled quickly.

Article 14(c) appears to set a barrier against information sharing, such that information exchanges are limited to uses related to those listed (maritime safety, security, or protection of maritime environment). However, such an interpretation would conflict with the objective of developing SafeSeaNet as the central data exchange for a broad range of compatible information sources and applications related to both safety and efficiency. So, instead it would be more consistent to interpret this as a requirement that certain priority information should be accessible without delay. The context is clearly the specific sub-domain of hazardous materials, and not SafeSeaNet access rights in general.

Article 14, Computerised exchange of data between Member States

Member States shall cooperate to ensure the interconnection and interoperability of the national systems used to manage the information indicated in Annex I.

Communication systems set up pursuant to the first subparagraph must display the following features:

(a) data exchange must be electronic and enable messages notified in accordance with Article 13 to be received and processed;

(b) the system must allow information to be transmitted 24 hours a day;

(c) upon request, through SafeSeaNet, *and if needed for the purpose of maritime safety or security or the protection of the maritime environment*, Member States shall be able to send information on the ship and the dangerous or polluting goods on board to the national and local competent authorities of another Member State *without delay*.

Title III then covers incidents and accidents at sea, including requirements for coastal stations to communicate information to other member States. In Articles 16 and 20a, Member States are required to communicate actively and to share information. Simultaneously they are bound by an obligation of confidentiality.

Article 16, Transmission of information concerning certain ships

2. Coastal stations holding relevant information on the ships referred to in paragraph 1 shall communicate it to the coastal stations concerned in the other Member States located along the planned route of the ship.

3. Member States shall ensure that the information communicated to them under paragraph 2 is transmitted to the relevant port authorities and/or any other authority designated by the Member State. Within the limits of their available staff

capacity, Member States shall carry out any appropriate inspection or verification in their ports either on their own initiative or at the request of another Member State, without prejudice to any port State control obligation. They shall inform all Member States concerned of the results of the action they take.

Article 20a, Plans for the accommodation of ships in need of assistance

3. *Member States shall publish* the name and *contact address* of the authority or authorities referred to in Article 20(1) and of the authorities appointed for receiving and handling alerts.

Member States shall communicate on request the relevant information concerning plans to neighbouring Member States.

In implementing the procedures provided for in the plans for accommodating ships in need of assistance, *Member States shall ensure that relevant information is made available* to the parties involved in the operations.

If requested by Member States, those receiving information in accordance with the second and third subparagraphs shall be bound by an obligation of confidentiality.

Title IV sets out accompanying measures. Within these, Article 22a, SafeSeaNet, details the requirements placed on Member States to establish their national systems. Paragraph 1 is to establish the information management systems. Paragraph 2 then refers to the "conditions laid down in Article 14". At face value, this implies that the national systems should be compatible with each other, so that they can support rapid exchange of information. It could also be interpreted to mean that the apparent limitation in 14c applies in general to all information being processed. However, paragraphs 3 and 4 then make it clear that Article 22a refers specifically to the need for interoperability, and there is a reference to Annex III for an elaboration of the operational management of SafeSeaNet, including the setting of access rights.

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 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*.
4. Without prejudice to paragraph 3, where operating under intra-Community agreements or in the framework of cross-border interregional or transnational projects within the Community, Member States shall ensure that information systems or networks comply with the requirements of this Directive and are *compatible with and connected to SafeSeaNet*.

While Article 22a provides for the establishment of interconnected national systems, Article 23 goes further by outlining areas for further cooperation and development. It gives insight into the future intentions for SafeSeaNet. Sub-paragraph (a) calls for ship and cargo information use to be optimised. Then (b) requires developments and enhancements allowing reports to become harmonised and streamlines, again echoing the objectives of 2010/65/EC. The need to obtain a "clearer view of traffic" is relevant in light of the HLSG and EMSA's integrated approach, combining data streams within a common architecture. This is underlined further in sub-paragraph (c). SafeSeaNet must, under the terms of the Directive be extended and updated according to developments in information technologies. Long range tracking systems are mentioned as part of this technical development process.

Article 23, Cooperation between Member States and the Commission

Member States and the Commission shall cooperate in attaining the following objectives:

(a) *making optimum use of the information* notified pursuant to this Directive, notably by developing appropriate telematic links between coastal stations and port authorities with a view to *exchanging data* relating to ships' movements, their estimated times of arrival in ports and their cargo;

(b) *developing and enhancing the effectiveness* of telematic links between the coastal stations of the Member States with a view to obtaining a *clearer picture of traffic*, improving the monitoring of ships in transit, and *harmonising and, as far as possible, streamlining the reports required from ships en route*;

(c) 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*. […] They shall also collaborate, within the regional or international bodies concerned, on developing *long-range identification* and tracking systems;

Finally, Article 24 deals with confidentiality. Member States are required to handle the data in confidence, and only in compliance with this directive (safety and efficiency). Annex III is mentioned as the reference for operational management of network security.

Article 24, Confidentiality of information

1. Member States shall, in accordance with Community or national legislation, *take the necessary measures to ensure the confidentiality of information* sent to them pursuant to this Directive, and shall *only use such information in compliance with this Directive*.

2. he Commission shall investigate possible network and information security problems and propose appropriate

amendments to Annex III for improving the security of the network.

Annex of Directive 2002/59/EC

Annex III, entitled "Electronic Messages and SafeSeaNet" contains four main sections:

1. General Concept and Architecture
2. Management, operation, development and maintenance of SafeSeaNet
3. Exchange of data through SafeSeaNet
4. Security and Access Rights

Part one of the annex makes a clear opening statement about SafeSeaNet. It is the exchange system for maritime information. It carries information for the purpose of:

- Maritime safety
- Port and maritime security
- Environmental protection
- Efficiency of maritime traffic (the movement of ships or the transport of goods[1]) and maritime transport[2]

It goes on to explain how the exchange is constructed with a network of national systems connected through a central node.

1. General concept and architecture

The Community maritime information and exchange system, SafeSeaNet, shall enable the receipt, storage, retrieval and exchange of information for the purpose of maritime safety, port and maritime security, marine environment protection and the efficiency of maritime traffic and maritime transport.

SafeSeaNet is a specialised system established to facilitate the exchange of information in an electronic format between Member States and to provide the Commission with the relevant information in accordance with Community legislation.

[1] Dictionary Definition: traffic - the movement of ships, trains or aircraft, or, the commercial transportation of goods or passengers. (OED)

[2] Dictionary Definition: transport – take or carry from one place to another by means of a vehicle, aircraft or ship.

It is composed of a network of national SafeSeaNet systems in Member States and a SafeSeaNet central system acting as a nodal point.

The SafeSeaNet network shall link all national SafeSeaNet systems and include the SafeSeaNet central system.

In part two of the annex, it sets out, amongst others, the principles of management (paragraph 2.2), in which the High level Steering Group (HLSG) is introduced. There are four stated aims for the HLSG, of which, the fourth is to approve the interface and functionalities control document (IFCD). It goes on to state that this ICFD, will contain the rules for access rights, security specifications and archiving of information. The HLSG will have the responsibility to develop and maintain this document, thereby making clear that access rights may change without legislation.

2.Management, operation, development and maintenance of SafeSeaNet

2.2.Principles of management

The Commission shall establish a high-level steering group, which shall adopt its rules of procedure, composed of representatives of the Member States and of the Commission to:

- make recommendations to improve the effectiveness and security of SafeSeaNet,
- provide appropriate guidance for the development of SafeSeaNet,
- assist the Commission in reviewing the performance of SafeSeaNet,
- *approve the interface and functionalities control document referred to in point 2.3, and any amendments thereto*.

2.3. Interface and functionalities control document and SafeSeaNet technical documentation

The Commission shall develop and maintain, in close cooperation with the Member States, *an interface and functionalities control document (IFCD)*.

The IFCD shall describe in detail the performance requirements and procedures applicable to the national and central elements

of SafeSeaNet designed to ensure compliance with the relevant Community legislation. The IFCD shall include rules for:
- access rights guidance for data quality management,
- security specifications for data transmission and exchange, and
- the archiving of information at national and central level.

Part three contains further statements underlining the efficiency objectives through the simplification of reporting. Data providers need to submit information only once.

3. Exchange of data through SafeSeaNet
The system shall use industry standards and be able to interact with public and private systems used to create, provide or receive information within SafeSeaNet.

The Commission and the Member States shall cooperate in order to examine the feasibility and development of functionalities that as far as possible will ensure that the data providers, including masters, owners, agents, operators, shippers and relevant authorities, need to submit information only once. Member States shall ensure that the information submitted is available for use in all relevant reporting, notification and VTMIS systems.

Finally, part four clarifies that access rights and security principles will be specified in the IFCD.

4. Security and access rights
The central and the national SafeSeaNet systems shall comply with the requirements of this Directive concerning confidentiality of information, as well as with the security principles and specifications described in the IFCD, in particular as regards access rights.

Member States shall identify all users to which a role and a set of access rights is attributed in compliance with the IFCD.

Conclusions

Regarding Directive 2002/59/EC (VTMIS Directive) and, Directive 2010/65/EC (Reporting Formalities)

The VTMIS Directive includes the aim for using the system for reducing the administrative burden and for simplification. This purpose is included in Annex III both under the general concept and architecture and in the chapter on exchange of data through SafeSeaNet. In particular,

> "*the Commission and the Member States shall cooperate in order to examine the feasibility and development of functionalities that as far as possible will ensure that the data providers {…} need to submit information only once*."

This is coupled to the requirement that electronic messages exchanged in accordance with this directive and relevant Community legislation shall be distributed through SafeSeaNet.

The facilitation aspects are then more regulated in detail in Directive 2010/65/EC which states the intention of reducing administrative burden for shipping companies by harmonising and simplifying reporting requirements.

It is made clear in the annex of 2010/65/EC that it refers to vessel tracking (safety), border controls, environment (waste and pollution), customs and security (law enforcement). Thus, from the target set of non-VTMIS authorities, only fisheries and defence are not referred to.

SafeSeaNet is designated as the system by which the reporting formalities information will be exchanged. SafeSeaNet is defined in RFD as "the Union maritime information exchange system as defined in Directive 2002/59/EC".

Shipping lines will report via national single windows, to be operational by 1 June 2015. This single window, "linking SafeSeaNet, e-Customs and other electronic systems, shall be the place where, in accordance with this Directive, all information is reported once and made available to various competent authorities and the Member States". It is therefore stated that information is reported once by the ship via the single window, and then shared, in circumstances where the information needs to be shared.

Thus 2010/65/EC envisages SafeSeaNet as the information exchange which allows maritime information to be shared between authorities and MSs, with the purpose of reducing administrative burden for shipping lines.

Directive 2002/59/EC sets out two intentions. The first is to establish the SafeSeaNet data exchange, and the second which follows logically, is that SafeSeaNet should be used to enhance not only the important aspects of maritime safety but also, as an integral part, the efficiency of maritime traffic and maritime transport. Establishing SafeSeaNet as the central information exchange is a technical pre-requisite. Enhancing safety and efficiency is consistent with the purpose of the VTMIS Directive, intended for SafeSeaNet, but also in relation to other Community Legislation.

Furthermore, SafeSeaNet is defined as the Community maritime information exchange system developed by the Commission in cooperation with the Member States to ensure the implementation of Community legislation. Complemented with Article 22a.3, Annex III Point 31, states that:

> *'Electronic messages exchanged in accordance with this Directive and relevant Community legislation shall be distributed through SafeSeaNet. To this end, Member States shall develop and maintain the necessary interfaces for automatic transmission of data by electronic means to the SafeSeaNet.*'

This would allow for the facilitation of traffic and transport without losing any safety aims in the process. For it all to connect, and become interoperable, the relevant format must be that used for fulfilling reporting obligations in accordance with the VTMIS Directive and therefore as established for SSN.

This is a prerequisite for the logic behind the requirement that all required information is reported once and made available to various competent authorities and the Member States and as a consequence the NSW and SSN must be interoperable, accessible and compatible.

[1] Exchange of data through SafeSeaNet

This is the interlinking between the two pieces of legislation and it is also where the intention for the use of VTMIS and SSN not only for maritime safety, security and environmental protection aspects (VTMIS users) but also for maritime transport and maritime traffic purposes (VTMIS and non-VTMIS), as required by other Community legislation becomes clear.

Possible limitations to data sharing could be construed in relation to Article 14, and in the reference to Article 14 in Article 22a.

Article 14 implies that Member States may only exchange information with each other, if the data is needed "*for the purpose of maritime safety or security or the protection of the maritime environment*". This could be interpreted as a limitation. However, the main thrust of Article 14 is that national systems should be compatible, so that priority data needed for operational purposes are exchanged quickly. This must also be seen in the context of the operational parts of the VTMIS Directive in Title III 'Notification of dangerous goods on board ships (HAZMAT)' which are related to the safety and environmental protection purposes for the VTMIS Directive as part of the safety policy and *acquis*.

In the wider context it would not be consistent if a system designated as the central exchange for all kinds of relevant data was restricted to a single use. It would then also not be consistent with the possibility, as already stipulated, to use SSN not only for the VTMIS Directive purposes but also in accordance with purposes of relevant other Community Legislation.

Annex III makes clear how access rights are determined and how SafeSeaNet is to be managed. The responsibility of the HLSG to maintain the IFCD control document indicates that access rights are not static, but should be used to allow the system to evolve, in such a way as to address the central objectives.

Article 23c goes on to stipulate that MS and EC shall co-operate to extend the cover and update SSN to take into account

experience in the operation and developments in ICT. Technical progress is therefore intended.

Issues of clarity arise as a result of the changing context for the VTMIS Directive and other related Community legislation. It was originally set up to establish the technical basis of SafeSeaNet, as a maritime data exchange. Originally, only a limited set of data streams and a limited number of user functions were anticipated, as well as a limited range of uses. However, SafeSeaNet is not bound by these limitations, as it also clearly relates to (should be used for) other relevant Union legislation. Access restrictions have always been applied but these are delegated to the HLSG to handle.

The VTMIS Directive allows for extension and evolution of SafeSeaNet, and the Reporting Formalities Directive requires it, also setting out which communities require access to SafeSeaNet. Perceived barriers in Articles 14 and 22a depend on an interpretation in which SafeSeaNet belongs to maritime safety (VTMIS) users only. 2010/65/EC makes it clear that this is not so. A logical consequence is that opening up (so that the system can serve both VTMIS and non-VTMIS users) is already foreseen and can be managed under the existing system of access rights. This would not conflict with the purpose of the Directive, Article 1 and Annex III, meaning that the purpose is for enhancing (a) safety and (b) efficiency of maritime transport and maritime traffic. Unless SafeSeaNet is opened up, the implementation of aforementioned Community legislation cannot be ensured.

Considering the above, it can be seen how SafeSeaNet is positioned as the information exchange which allows maritime information to be shared between authorities and Member States, with the aim of reducing administrative burden for shipping lines.

Annex 4: Identification of Impacts

Economic Impacts

Economic impacts	Intervention scenario		
	Expected impact	Stakeholders affected	Description
Functioning of the internal market and competition			
What impact (positive or negative) does the option have on the free movement of goods, services, capital and workers?	Indirect Positive for movement of goods.		Linkage of SSN to reporting Formalities Directive has potential for reducing administrative barriers at EU border crossings
Will it lead to a reduction in consumer choice, higher prices due to less competition, the creation of barriers for new suppliers and service providers, the facilitation of anti-competitive behaviour or emergence of monopolies, market segmentation, etc?	No relevant impact		
Competitiveness, trade and investment flows			
What impact does the option have on the global competitive position of EU firms? Does it impact productivity?	No relevant impact		

What impact does the option have on trade barriers?	No relevant impact		
Does it provoke cross-border investment flows (including relocation of economic activity)?	No relevant impact		
Operating costs and conduct of business/Small and Medium Enterprises			
Will it impose additional adjustment, compliance or transaction costs on businesses?	Positive and negative	Shipping companies and agents	Measures to improve accuracy of data imply changes in procedures (adjustment/compliance) for companies filing reports. Measures to reduce duplication and broaden user group to include industry have potential to reduce costs.
How does the option affect the cost or availability of essential inputs (raw materials, machinery, labour, energy, etc.)?	No relevant impact		
Does it affect access to finance?	No relevant impact		
Does it impact on the investment cycle?	No relevant impact		
Will it entail the withdrawal of certain products from the market? Is the marketing of products limited or prohibited?	No relevant impact		
Will it entail stricter regulation of the conduct of a particular business?	No relevant impact		
Will it lead to new or the closing down of businesses?	No relevant impact		

Are some products or businesses treated differently from others in a comparable situation?	No relevant impact		
Administrative burdens on businesses			
Does it affect the nature of information obligations placed on businesses (for example, the type of data required, reporting frequency, the complexity of submission process)?	Positive and negative	Shipping companies and agents	Measures to improve accuracy of data imply changes in procedures (adjustment/compliance) for companies filing reports. Measures to reduce duplication and broaden user group to include industry have potential to reduce costs.
What is the impact of these burdens on SMEs in particular?	Positive	Shipping companies and agents	Through more streamlined reporting, the net effect on SMEs such as shipping companies and their agents will be positive.
Public authorities			
Does the option have budgetary consequences for public authorities at different levels of government (national, regional, local), both immediately and in the long run?	Short-term direct negative, longer term indirect positive		In short term, changes to the SSN system are likely to result in adjustment costs for public administrations. Longer term the ability to use SSN within a more holistic approach to reporting and dissemination of data within maritime sector reduces cost for public administrations.

Does it bring additional governmental administrative burden?	Positive		Measures are aimed at removing inconsistencies and anomalies in existing legislation, and at harnessing new and existing legislation in related areas.
Does the option require the creation of new or restructuring of existing public authorities?	Negative		Option 2 and 3 require changes in SSN governance.
Property rights			
Are property rights affected (land, movable property, tangible/intangible assets)? Is acquisition, sale or use of property rights limited?	No relevant impact		
Or will there be a complete loss of property?	No relevant impact		
Innovation and research			
Does the option stimulate or hinder research and development?	Positive	non-VTMIS Community	Improved accuracy and extended data contribute to research and development.
Does it promote greater productivity/resource efficiency?	No relevant impact		
Does it facilitate the introduction and dissemination of new production methods, technologies and products?	No relevant impact		
Does it affect intellectual property rights (patents, trademarks, copyright, other know-how rights)?	No relevant impact		

Does it promote or limit academic or industrial research?	No relevant impact		
Consumers and households			
Does the option affect the prices consumers pay?	No relevant impact		
Does it impact on consumers' ability to benefit from the internal market?	No relevant impact		
Does it have an impact on the quality and availability of the goods/services they buy, on consumer choice and confidence? (cf. in particular non-existing and incomplete markets – see Annex 8)	No relevant impact		
Does it affect consumer information and protection?	No relevant impact		
Does it have significant consequences for the financial situation of individuals / households, both immediately and in the long run?	No relevant impact		
Does it affect the economic protection of the family and of children?	No relevant impact		
Specific regions or sectors			
Does the option have significant effects on certain sectors?	Positive	Shipping companies, agents and ports.	Measures promote better usage of and wider access to data regarding maritime sector.
Will it have a specific impact on certain regions, for instance in terms of jobs created or lost?	Positive		Reduction in shipping accidents affects coastal MS

Is there a single Member State, region or sector which is disproportionately affected (so-called "outlier" impact)?	No relevant impact		
Third countries and international relations			
How does the option affect trade or investment flows between the EU and third countries? How does it affect EU trade policy and its international obligations, including in the WTO?	No relevant impact		
Does the option affect specific groups (foreign and domestic businesses and consumers) and if so in what way?	No relevant impact		
Does the option concern an area in which international standards, common regulatory approaches or international regulatory dialogues exist?	No relevant impact		
Does it affect EU foreign policy and EU/EC development policy?	No relevant impact		
What are the impacts on third countries with which the EU has preferential trade arrangements?	No relevant impact		
Does it affect developing countries at different stages of development (least developed and other low-income and middle income countries) in a different manner?	No relevant impact		
Does the option impose adjustment costs on developing countries?	No relevant impact		

Does the option affect goods or services that are produced or consumed by developing countries?	No relevant impact		
Macroeconomic environment			
Does it have overall consequences of the option for economic growth and employment?	Small indirect positive	All	SSN contributes to ability to reduce costs and delays encountered in ports for intra-EU flows by facilitating cargo tracking.
How does the option contribute to improving the conditions for investment and the proper functioning of markets?	No relevant impact		
Does the option have direct impacts on macro-economic stabilisation?	No relevant impact		

Social Impacts

Social impact	Intervention scenario		
	Expected impact	Stakeholders affected	Description
Employment and labour markets			
Does the option facilitate new job creation?	No relevant impact		
Does it lead directly or indirectly to a loss of jobs?	No relevant impact		
Does it have specific negative consequences for particular professions, groups of workers, or self-employed persons?	No relevant impact		

Does it affect particular age groups?	No relevant impact		
Does it affect the demand for labour?	No relevant impact		
Does it have an impact on the functioning of the labour market?	No relevant impact		
Does it have an impact on the reconciliation between private, family and professional life?	No relevant impact		
Standards and rights related to job quality			
Does the option impact on job quality?	Indirect positive	Industry - Shipping - Deck officers	Through the reduction of duplicated reporting, senior officers can devote more time to their primary role.
Does the option affect the access of workers or job-seekers to vocational or continuous training?	No relevant impact		
Will it affect workers' health, safety and dignity?	Positive	Ships'crews	Reduction in accidents through availability of improved and integrated data.
Does the option directly or indirectly affect workers' existing rights and obligations, in particular as regards information and consultation within their undertaking and protection against dismissal?	No relevant impact		
Does it affect the protection of young people at work?	No relevant impact		
Does it directly or indirectly affect employers' existing rights and obligations?	No relevant impact		

Does it bring about minimum employment standards across the EU?	No relevant impact		
Does the option facilitate or restrict restructuring, adaptation to change and the use of technological innovations in the workplace?	No relevant impact		
Social inclusion and protection of particular groups			
Does the option affect access to the labour market or transitions into/out of the labour market?	No relevant impact		
Does it lead directly or indirectly to greater equality or inequality?	No relevant impact		
Does it affect equal access to services and goods?	No relevant impact		
Does it affect access to placement services or to services of general economic interest?	No relevant impact		
Does the option make the public better informed about a particular issue?	No relevant impact		
Does the option affect specific groups of individuals (for example the most vulnerable or the most at risk of poverty, children, women, elderly, the disabled, unemployed or ethnic, linguistic and religious minorities, asylum seekers), firms or other organisations (for example churches) or localities more than others? , firms, localities more than others?	No relevant impact		

Does the option significantly affect third country nationals?	No relevant impact		
Gender equality, equality treatment and opportunities, non –discrimination.			
Does the option affect the principle of non-discrimination, equal treatment and equal opportunities for all?	No relevant impact		
Does the option have a different impact on women and men?	No relevant impact		
Does the option promote equality between women and men?	No relevant impact		
Does the option entail any different treatment of groups or individuals directly on grounds of sex, racial or ethnic origin, religion or belief, disability, age, and sexual orientation? Or could it lead to indirect discrimination?	No relevant impact		
Individuals, private and family life, personal data			
Does the option impose additional administrative requirements on individuals or increase administrative complexity?	No relevant impact		
Does the option affect the privacy, of individuals (including their home and communications)?	No relevant impact		
Does it affect the right to liberty of individuals?	No relevant impact		
Does it affect their right to move freely within the EU?	No relevant impact		

Does it affect family life or the legal, economic or social protection of the family?	No relevant impact		
Does it affect the rights of the child?	No relevant impact		
Does the option involve the processing of personal data or the concerned individual's right of access to personal data?	No relevant impact		
Governance, participation, good administration, access to justice, media and ethics			
Does the option affect the involvement of stakeholders in issues of governance as provided for in the Treaty and the new governance approach?	No relevant impact		
Are all actors and stakeholders treated on an equal footing, with due respect for their diversity? Does the option impact on cultural and linguistic diversity?	No relevant impact		
Does it affect the autonomy of the social partners in the areas for which they are competent? Does it, for example, affect the right of collective bargaining at any level or the right to take collective action?	No relevant impact		
Does the implementation of the proposed measures affect public institutions and administrations, for example in regard to their responsibilities?	No relevant impact		

Will the option affect the individual's rights and relations with the public administration?	No relevant impact		
Does it affect the individual's access to justice?	No relevant impact		
Does it foresee the right to an effective remedy before a tribunal?	No relevant impact		
Does the option make the public better informed about a particular issue? Does it affect the public's access to information?	No relevant impact		
Does the option affect political parties or civic organisations?	No relevant impact		
Does the option affect the media, media pluralism and freedom of expression?	No relevant impact		
Does the option raise (bio) ethical issues (cloning, use of human body or its parts for financial gain, genetic research/testing, use of genetic information)?	No relevant impact		
Public health and safety			
Does the option affect the health and safety of individuals/populations, including life expectancy, mortality and morbidity, through impacts on the socio-economic environment (working environment, income, education, occupation, nutrition)?	No relevant impact		

Does the option increase or decrease the likelihood of health risks due to substances harmful to the natural environment?	Positive	Public	Reduction of accidents at sea, and reduction in risk of spillage of hazardouse materials.
Does it affect health due to changes in the amount of noise, air, water or soil quality?	Positive	Public	Reduction of accidents at sea, and reduction in risk of spillage of hazardouse materials.
Will it affect health due to changes energy use and/or waste disposal?	No relevant impact		
Does the option affect lifestyle-related determinants of health such as diet, physical activity or use of tobacco, alcohol, or drugs?	No relevant impact		
Are there specific effects on particular risk groups (determined by age, gender, disability, social group, mobility, region, etc.)?	No relevant impact		
Crime, Terrorism and Security			
Does the option improve or hinder security, crime or terrorism?	Positive	Non-VTMIS Community - Law enforcement, anti piracy	Sharing of information with law enforcement has potential to improve maritime security.
Does the option affect the criminal's chances of detection or his/her potential gain from the crime?	No relevant impact		
Is the option likely to increase the number of criminal acts?	No relevant impact		
Does it affect law enforcement capacity?	Positive	Non-VTMIS Community - Law enforcement, anti piracy	Sharing of information with law enforcement has potential to improve maritime security.
Will it have an impact on security interests?	No relevant impact		

Will it have an impact on the right to liberty and security, right to fair trial and the right of defence?	No relevant impact		
Does it affect the rights of victims of crime and witnesses?	No relevant impact		
Access to and effects on social protection, health and educational systems			
Does the option have an impact on services in terms of quality/access for all?	No relevant impact		
Does it have an effect on the education and mobility of workers (health, education, etc.)?	No relevant impact		
Does the option affect the access of individuals to public/private education or vocational and continuing training?	No relevant impact		
Does it affect the cross-border provision of services, referrals across borders and co-operation in border regions?	No relevant impact		
Does the option affect the financing / organisation / access to social, health and care services?	No relevant impact		
Does it affect universities and academic freedom / self-governance?	No relevant impact		
Culture			
Does the proposal have an impact on the preservation of cultural heritage?	No relevant impact		
Does the proposal have an impact on cultural diversity?	No relevant impact		

Does the proposal have an impact on citizens' participation in cultural manifestations, or their access to cultural resources?	No relevant impact		
Social impacts in third countries			
Does the option have a social impact on third countries that would be relevant for overarching EU policies, such as development policy?	No relevant impact		
Does it affect international obligations and commitments of the EU arising from e.g. the ACP-EC Partnership Agreement or the Millennium Development Goals?	No relevant impact		
Does it increase poverty in developing countries or have an impact on income of the poorest populations?	No relevant impact		

Environmental Impacts

Environmental impacts	Intervention scenario		
	Expected impact	Stakeholders affected	Description
The climate			
Does the option affect the emission of greenhouse gases (e.g. carbon dioxide, methane etc) into the atmosphere?	Indirect Positive Impact	Non-VTMIS Authorities e.g. DG-CLIMA.	Ability to monitor vessel activity is needed in context of monitoring emissions from ships.

Does the option affect the emission of ozone-depleting substances (CFCs, HCFCs etc)?	No relevant impact		
Does the option affect our ability to adapt to climate change?	No relevant impact		
Transport and the use of energy			
Does the option affect the energy intensity of the economy?	No relevant impact		
Does the option affect the fuel mix (between coal, gas, nuclear, renewables etc) used in energy production?	No relevant impact		
Will it increase or decrease the demand for transport (passenger or freight), or influence its modal split?	Indirect Positive Impact	Industry - shipping lines.	Through Reporting Formalities Directive there is potential for reducing administrative costs associated with maritime transport.
Does it increase or decrease vehicle emissions?	No relevant impact		
Will the option increase/decrease energy and fuel needs/consumption?	No relevant impact		
Air quality			
Does the option have an effect on emissions of acidifying, eutrophying, photochemical or harmful air pollutants that might affect human health, damage crops or buildings or lead to deterioration in the environment (soil or rivers etc)?	No relevant impact		

Biodiversity, flora, fauna and landscapes			
Does the option reduce the number of species/varieties/races in any area (i.e. reduce biological diversity) or increase the range of species (e.g. by promoting conservation)?	No relevant impact		
Does it affect protected or endangered species or their habitats or ecologically sensitive areas?	No relevant impact		
Does it split the landscape into smaller areas or in other ways affect migration routes, ecological corridors or buffer zones?	No relevant impact		
Does the option affect the scenic value of protected landscape?	No relevant impact		
Water quality and resources			
Does the option decrease or increase the quality or quantity of freshwater and groundwater?	No relevant impact		
Does it raise or lower the quality of waters in coastal and marine areas (e.g. through discharges of sewage, nutrients, oil, heavy metals, and other pollutants)?	Positive	VTMIS Community	Reduction of maritime accidents would reduce pollution of coastal waters and martine areas
Does it affect drinking water resources?	No relevant impact		

Soil quality or resources			
Does the option affect the acidification, contamination or salinity of soil, and soil erosion rates?	No relevant impact		
Does it lead to loss of available soil (e.g. through building or construction works) or increase the amount of usable soil (e.g. through land decontamination)?	No relevant impact		
Land use			
Does the option have the effect of bringing new areas of land ('greenfields') into use for the first time?	No relevant impact		
Does it affect land designated as sensitive for ecological reasons? Does it lead to a change in land use (for example, the divide between rural and urban, or change in type of agriculture)?	No relevant impact		
Renewable or non-renewable resources			
Does the option affect the use of renewable resources (fish, etc.) and lead to their use being faster than they can regenerate?	No relevant impact		
Does it reduce or increase use of non-renewable resources (groundwater, minerals, etc.)?	No relevant impact		

The environmental consequences of firms and consumers			
Does the option lead to more sustainable production and consumption?	No relevant impact		
Does the option change the relative prices of environmental friendly and unfriendly products?	No relevant impact		
Does the option promote or restrict environmentally un/friendly goods and services through changes in the rules on capital investments, loans, insurance services etc?	No relevant impact		
Will it lead to businesses becoming more or less polluting through changes in the way in which they operate?	No relevant impact		
Waste production / generation / recycling			
Does the option affect waste production (solid, urban, agricultural, industrial, mining, radioactive or toxic waste) or how waste is treated, disposed of or recycled?	No relevant impact		
The likelihood or scale of environmental risks			
Does the option affect the likelihood or prevention of fire, explosions, breakdowns, accidents and accidental emissions?	Positive	VTMIS Community	Improved access and quality of real-time maritime data reduces the risk of accidents.

Does it affect the risk of unauthorised or unintentional dissemination of environmentally alien or genetically modified organisms?	No relevant impact		
Does the option have an impact on health of animals?	No relevant impact		
Does the option affect animal welfare (i.e. humane treatment of animals)?	No relevant impact		
Does the option affect the safety of food and feed?	No relevant impact		
International environmental impacts			
Does the option have an impact on the environment in third countries that would be relevant for overarching EU policies, such as development policy?	No relevant impact		

Annex 5: Economic Impacts

The types of obligations posed by the VTMIS Directive and the associated costs are grouped in the following categories:

Requirements for the shipping industry

The Directive requires the shipping companies to send specific reports to the Member State authorities and organize the related procedures. Moreover the Directive requires ships to be fitted with specific equipment for traffic monitoring purposes. The types of requirements are presented in more detail below:

Reporting requirements

The shipping industry (masters, agents or operators) send to the Member States authorities the following reports:

- Ships' masters or agents on their behalf report on arrival and departure of ships at ports and the dangerous and polluting goods (Hazmat) carried on board (according to Articles 4 and 13).
- Ships' masters report to the Mandatory Reporting Systems (MRS) in accordance to Article 5 and VTS as required by Article 8.
- Ships involved in incidents or accidents at sea have to send specific reports to the coastal stations as per Article 17 of the Directive.

Infrastructure requirements

The shipping companies and especially the big ones, develop their own information systems to support the reporting process as follows:

- It is quite often the big shipping companies to develop their own information systems to comply with their reporting requirements and connect to the National SSN systems (passing on necessary data e.g. Hazmat). Similarly some ports develop their own information systems to receive the reports from the shipping industry and report to the National SSN systems.

- Additionally, in case of exemptions, Article 15 requires the shipping companies to set up information systems for supporting the exemptions monitoring mechanism. The company has to ensure that the information required by the competent authorities is transferred in electronic format (24 hours a day, without delay). In practice, this requires building an interface with National SSN system and establishing the related procedures.

Equipment requirements

Ships falling under the scope of the VTMIS Directive have to be fitted with specific ship monitoring equipment as follows:

- The Articles 6 and 6a of the VTMIS Directive require the fitting of certain type of ships with AIS equipment.
- The Article 6b of the VTMIS Directive requires the fitting of certain type of ships with LRIT equipment.

Administrative requirements, training, consultation, awareness

Although the Directive does not specify such type of actions, the shipping industry needs to invest resources in training, consultations and awareness campaigns to comply with the VTMIS Directive. In particular the shipping industry needs to:

- Get acquainted with the requirements of the VTMIS directive and participate in consultations with the national administrations and often with the EU services. For example, the Industry representatives actively participate in the consultations related to the Hazmat reporting and provide feedback. The ship agents invest time in the necessary training/education on reporting requirements.
- Apply exemptions mechanism for specific ships and services from reporting obligations. Certain procedures need to be set up for the exempted services for providing the necessary information to the National Competent Authorities, upon their request.

Although we assume the above mentioned administrative actions are performed by the Industry the detailed figures quantifying costs are not available.

Costs for the shipping industry

The costs estimation per each type of requirements is presented below:

Costs related to reporting requirements
The costs of paragraph 3.1.a; are operational costs related mainly to the reporting obligations set by the Directive and other local regulations (e.g. port regulations). Based on the calculations a rough estimate of the total yearly costs is estimated to €48,000,000.

Methodology: Based on informal consultations, it was assumed that the ship representative (agent) charges around €50 for reporting formalities linked with a ship's arrival/departure. This cost has been multiplied by the 78,883 ship calls (as reported in SSN in July 2013) and multiplied by 12 months.

Note: The above mentioned costs would have existed even if the Directive was not in-force because local port regulations require ships to notify their arrivals/departures.

Costs related to Infrastructure requirements
The infrastructure costs of par. 3.1.b are difficult to calculate and vary between the Member States. The shipping industry including ports made serious investments to develop their information systems which among others, serves the purposes of the VTMIS Directive. A draft estimate of the VTMIS related cost is around €25,000,000.

Methodology: Based on the information received from MS in response to the 'cost questionnaire' the average cost of integrating port systems with National SafeSeaNet system is estimated on €1,000,000 per MS . This figure was multiplied by 25 coastal MS (this includes Croatia and EFTA participating coastal countries).

Costs related to ship equipment requirements
The costs of par. 3.1.c for the specific equipment (only for the EU-flag ships SOLAS and Fishing) are estimated at around €60,000,000 without any maintenance and service costs.

Methodology: The number of EU-Flag SOLAS ships (8676 based on the EMSA's data base) was multiplied by an average cost of the AIS ship-borne equipment (around €2,500) and the cost of the LRIT equipment/the adoption of an existing Inmarsat-C equipment to LRIT standards (around €1,9002).

The number of EU-flag fishing vessels - 8566 (source: DG MARE – Fleet Register), which according to the Directive are obliged to carry AIS Class-A transmitter on board, was multiplied by an average cost of the equipment.
The above figures exclude specific installation and maintenance costs, which may vary.

Costs related to administrative, training, consultation, awareness requirements

There are not any reliable figures to estimate the costs of par. 3.1.d and they have not been calculated for the purpose of this exercise. It was only assumed in terms of scale, that they may reach up to half of the Member States administrative costs, because of the cooperative nature of the National SafeSeaNet systems (i.e. information passed from business to the government).

Requirements for the Member States

The maritime Administrations of the Member States have developed and equipped their national SSN systems with the appropriate IT infrastructure for receiving, processing and forwarding the information required by the Directive 2002/59/EC. The requirements for the Member States can be grouped into the following types:

Infrastructure requirements
The VTMIS Directive includes requirements for the Member States to develop ICT infrastructure as described below:

- The existing VTS, MRS, MRCCs and Pollution prevention centres (which are in place at each Member State due to their international obligations or own national policies), were connected/interfaced with the national SSN system to ensure the processing and distribution of the relevant information e.g. on incidents or accidents at sea. The

VTMIS directive includes relevant provisions such as those related to the compliance of ships with VTS (Article 8), monitoring of ships in MRS (Article 5) and transmission of the information on ships posing the potential risk (Article 16).

- Member States set up the relevant infrastructure (shore-based AIS) for receiving and storing the AIS information transmitted from the ship borne AIS due to Article 9 of the Directive.
- Member States implemented the relevant ICT solutions to set-up the telematics links between the already existing local competent authorities, create and maintain communication infrastructure, make sure that information required by the Directive is provided electronically. They created the National SSN systems fulfilling the obligations of Articles 14 and 22, 22a.

Reporting requirements

The core of the VTMIS Directive requirements is the exchange of information between Member States. In particular Member States need to ensure:

- that the SSN National systems are linked and interfaced with the existing authorities and ports so that the relevant information is available to other Member States as required by Article 14,
- the monitoring of the proper operation of the national traffic monitoring systems as required by Articles 1, 4 and 13,
- the compliance with all reporting requirements e.g. those linked with actual times of ships arrivals and departures as required by the PSC Directive or the Incidents and Accident reporting as required by Articles 16 and 17 of the VTMIS Directive,
- that the relevant information is made available upon request to other Member States.

Administrative requirements (training, consultation, awareness)

The Directive includes requirements about the VTS staffing levels and skills. In addition the proper functioning of SafeSeaNet requires administrative activities for the Member States to ensure the proper functioning of their SafeSeaNet application and continuous consultations and meetings with

EMSA and Commission to achieve the proper supervision of the SafeSeaNet system. In particular:

- the Directive obliges Member States to take certain administrative tasks at national level such as the assignment of roles to the competent authorities (e.g. for granting the accommodation for the ships in need of assistance/ place of Refuge) and the setting up of the communication procedures.
- Article 9 requires the manning the VTS and MRSs with the properly qualified personnel. Member States have to make sure that the VTS are manned with the properly qualified staff.
- Regular consultation with the industry and Commission/EMSA is required by the Annex III of the Directive which sets the SSN High Level Steering Group. Additionally there are other groups and meetings dealing with the technical and operational aspects of the VTMIS, SafeSeaNet, LRIT or the integrated systems.

Related costs for the Member States

The costs estimation per each type of requirements is presented below:

Costs related to infrastructure requirements
The creation of the National SSN Systems is currently estimated at around €30,000,000. This figure represents the estimated value of investment on creating all telematics links with Local Competent Authorities and with other Member States (via the SSN Central Node), excluding the staffing and maintenance of the National SSN systems.

Methodology: Based on the MS responses to the 'cost questionnaire' an average cost of a SSN National system is calculated on €1,200,000. This figure has been multiplied by 25 Member States.

Additionally, the expenditures on the AIS infrastructure without considering the maintenance and service costs, are estimated at €73,000,000.

Methodology: Based on the Member States responses to the 'cost questionnaire' an average price of implementing a single AIS base station is around €100,000 (EMSA's initial calculation was €20,000 but did not include the construction costs, which are reflected in the responses from MS). This average cost was multiplied by 727 AIS base stations currently operating around EU.

Important infrastructure elements of the VTMIS directive are the coastal stations (VTS, MRS, RCC etc) which require heavy investments from the Member States. The cost of these stations is estimated on more than €1,000,000,000 (a figure of 300 main VTS-es and MRS-es in EU, was multiplied by an estimated cost of an VTS infrastructure estimated on €3,000,000) and was invested by the Member States in the framework of their international obligations or their own national policies, often before the adoption of the VTMIS directive. The cost of these investments was not considered in the framework of this exercise.

Costs related to reporting requirements

The costs of par. 3.3.b have not been calculated because most of them are associated with the operations of the National Competent Authorities, their 24/7 contact points or Local Competent Authorities and their staff. Note: this section may be amended upon reception of more detailed information from the Member States in response to the 'cost questionnaire'.

Costs related to administrative requirements - (training, consultation, awareness)

The costs of par. 3.3.c are estimated at €4,000,000 for all maritime Administrations.

Methodology: Based on the EMSA's experience, administrative costs of a project may cover around 4% of the overall investments; however the detailed calculations are not available.

Requirements for EMSA and EU Commission

The Directive the Commission is responsible for the management and development at policy level of the central SafeSeaNet system and for the oversight of the SafeSeaNet system, in cooperation with Member States. EMSA in cooperation with the Member States and the Commission is responsible for its technical implementation. The requirements are summarized as follows:

Infrastructure requirements
The VTMIS Directive includes requirements for the Commission/EMSA to develop ICT infrastructure as described below:

- The central SafeSeaNet system acts as the central/nodal point enabling the exchange of information between the national SSN systems. The development of the Central SafeSeaNet covered the required aspects defined as per requirements of the Annex III par. 2.3 of the Directive.
- Article 6.2 of the VTMIS Directive provides the legal basis for the development of the EU LRIT Data Centre. EMSA developed and operates the EU LRIT DC in accordance with the Council Resolutions of 2 October 2007 and 9 December 2008.

Administrative requirements (training, consultation, awareness)
The Directive includes certain administrative related requirements for the Commission/EMSA such as:

- To ensure the supervision of the SafeSeaNet system EMSA and the Commission are in regular contact with the Member States for the technical and operational consultations and to provide an adequate training.
- The National SSN systems are subject to the regular monitoring visits for evaluating the functioning and effectiveness of the National SSN Systems. Such components are the responsibility of the Commission, in close cooperation with the MSs, and are administered by EMSA on their behalf.

Costs for the Commission/EMSA

The costs estimation per each type of requirements is presented below:

Costs related to infrastructure requirements
The overall expenditures on the infrastructure of the SSN Central System and the LRIT CDC are estimated at €16,000,000.

Methodology: This cost is based on the EMSA's expenditures. The following elements were considered:

- Central SSN System application development and maintenance
- Hosting of the SSN Central System
- LRIT application development and maintenance

Costs related to administrative requirements (training, consultation, awareness)
The overall costs related to the administrative tasks of EMSA and the Commission are estimated at €900,000 Euros. The average annual cost equals 150,000 Euros and has been obtained from the EMSA's expenditures on: SSN WS, Trainings, WGs, VTMIS Directive inspection visits , LRIT meetings and trainings-between 2007 -2013 (Total: 900,000€)

Methodology: This costs is based on EMSA's expenditures and includes SSN WS, Trainings, WG and the VTMIS Directive inspection visits and LRIT meetings and trainings.

Other requirements and associated costs
The VTMIS Directive includes additional requirements not directly linked with the traffic monitoring such as:

- Article 10 requires specific ships (over 3,000 GT) calling at EU ports to be fitted with the Voyage Data Recorders (VDR).
- Article 11 requires Member States to comply with the provisions of the IMO Code for the investigation of marine casualties and incidents when conducting any

marine casualty or incident investigation involving a ship referred to in this Directive.

- Article 18 requires Member States to take certain measures in the event of exceptionally bad weather or sea conditions causing a serious threat of pollution of their shipping areas or coastal zones, or of the shipping areas or coastal zones of other States, or that the safety of human life is in danger.

The cost related only to the VDR equipment for the EU-flag ships is estimated at around €390,000,000.

Methodology: The number of EU-flag SOLAS ships (8676 based on the EMSA's data base) has been multiplied by an average cost of the VDR equipment which is around €45,000 Euro. Note: the cost of installing is excluded. It can be three times higher than the equipment cost, depending on the number of interconnected on-board sensors.

Analysis of the VTMIS requirements and costs

In the following tables, the costs borne by the shipping industry, Member States and the European Commission/EMSA are summarized, based on information prepared by EMSA.

Table 0-1: VTMIS Costs borne by Shipping Industry

Shipping Industry		Development	Annual Cost
Reporting			47,329,800
Infrastructure		25,000,000	
Equipment		59,589,400	
Administrative			
	Total	84,589,400	47,329,800

Table 0-2: VTMIS Costs borne by Member States

Member States		Development	Annual Cost
Reporting		n/a	n/a
Infrastructure			
	National SSN	30,000,000	
	AIS Infrastructure	72,700,000	
Equipment			
Administrative			4,000,000
	Total	102,700,000	4,000,000

Table 0-3: VTMIS Costs borne by European Commission/EMSA

Commission/EMSA		Development	Annual Cost
Reporting			
Infrastructure		16,000,000	
Equipment			
Administrative			150,000*
	Total	16,900,000	150,000

*the average annual cost has been obtained from the EMSA's expenditures on: SSN WS, Trainings, WGs, VTMIS Directive inspection visits, LRIT meetings and trainings - between 2007 -2013 (Total: 900,000€)

Table 0-4: Total VTMIS Costs

Total		Development	Annual Cost
Reporting		-	47,329,800
Infrastructure		143,700,000	-
Equipment		59,589,400	-
Administrative		-	4,150,000
	Total	203,289,400	51,479,800

IA Consultation with MS regarding Investment Costs of SSN

During IA consultation additional figures have been provided by Member States, covering their cumulative costs. These cover the period 2003 to 2012 in which the national SafeSeaNet systems have been developed.

Table 0-5: National SafeSeaNet Costs

	Annual Ship Arrivals (000s)	Cumulative MS VTMIS Costs (€m)
Member State 1	61.4	5.100
Member State 2	7.5	2.676
Member State3	6.0	1.200
Member State4	3.8	0.178
Member State5	38.1	5.300
Member State6	95.8	0.971
Member State7	4.9	0.116
Member State8	3.0	0.987
Member State9	155.0	10.726
TOTAL (9 MS)	375.4	27.254
Other EU28 (estimated)	573.6	71.73
Total	949.0	98.988

Source: IA Questionnaire

Annex 6: Roadmap Options

Roadmap Policy options

Policy options will be better defined and established in the light of this study and based on the legal requirements and policy commitments. In 2009, the Commission set up a "SafeSeaNet High Level Steering Group" composed of Member State representatives to examine and guide the policy for the further development of the EU vessel traffic monitoring system. At a technical level, this group is supported by a permanent expert group[1] set up by the European Maritime Safety Agency. Without prejudging the work of these groups and the conclusions to be drawn by the planned impact assessment study, the following options can be identified at a very **preliminary** stage:

Option (a): No policy change – the baseline scenario:
The existing legislative framework will continue to apply without any substantial change. Where possible, the Commission would provide guidance on how to accommodate requirements arising from other legal instruments (cf. Directive on port formalities) and policy commitments (Integrated Maritime Surveillance). Technical advice could be provided regarding technological developments in the field of vessel traffic monitoring.

Option (b): Soft law - Promotion of best practices, exchange of experiences and technical support:
The Commission could promote enhanced voluntary coordination between EU maritime transport administrations. New working groups and monitoring committees could be created. EMSA could devote more resources to technical seminars and awareness campaigns. EMSA could provide further support, services and training to the Maritime Transport Administrations. Continuation of current pilot projects with other user communities on an ad hoc basis.

Option (c): Abrogation of the Directive

Option (d): amendment of the Directive

1 Similar expert groups are set-up by EMSA to manage the LRIT, CSN and IMDatE issues.

Option (d1): 'minimum' - A limited modification of Directive 2002/59 to address maritime transport requirements in the narrow sense, taking into account the technological advancements to serve the current maritime user group only:

The existing legislative framework will be modified in order to meet current information and technological advancements (see for example the inclusion of data from the LRIT, CSN and S-AIS systems): adjustments and clarification of the governance structure.

Option (d2): 'Medium' - A modification of Directive 2002/59 to address maritime transport requirements, taking into account the existing exchange of information and the technological advancements to serve other user communities other than the current maritime user communities, based on an assessment of on-going pilot projects only:

The existing legislative framework to be modified in order to:

- Make explicit reference (in Annex I) to the information to be sent to SSN for incident reports referred to in Art 16 and 17.
- Refer to the information sent through SSN to the Port State Control Information System THETIS and CleanSeaNet.
- Meet current technological advancements in the field (LRIT, CSN and S-AIS) as well as the requirements established by other EU legal instruments (e.g. Directive on reporting formalities) enabling communication within and between existing systems to reinforce certain provisions linked to maritime safety and prevention of pollution by ships: changes in the governance structure.

Option (d3): 'Maximum' - A modification of Directive 2002/59 to address maritime transport requirements, taking into account the technological advancements to serve all current and potential future user groups, based on cross-sectoral EU Policy developments:

The existing legislative framework will be modified in order to meet current and future technological advancements in the field as well as the requirements established by other EU legal

instruments. It shall also entail a review considering sectorial maritime information requirements (see for example IMP, CISE, and EUROSUR), including the integrated maritime surveillance policy goals, where relevant, and enabling communication within and between different user group systems: reorganisation of the governance structures.

Option (d4): a combination of some, or some aspects, of the above options.

All the above options will be analysed and compared and where possible and appropriate, a preferred option will be presented. For all options it is key to consider any duplication of systems and information (or rather reduction in or avoidance of duplication as far as possible) which may lead to higher administrative and infrastructure costs. It shall also consider the possible simplification (reduction in administrative burden) on the shipping community.

Annex 7: Implementation Projects

Detailed descriptions:

No.	Name	Description
SSN developments		
1.	SSN V.2	Directive 2009/16 for Port State Control (PSC) requires MSs to provide information, through SafeSeaNet (SSN), to the PSC information system THETIS. The technical solution was agreed during the SSN workshop 11 to provide such information is the PortPlus message which allows providing the 72h and 24h pre-arrival, Arrival and Departure information mandatory to provide to THETIS. Hazmat information is also be provided through this message. The MSs are required to provide the necessary information to THETIS, through SafeSeaNet from the 1st January 2011.
	AIS data streaming to SSN	The SSN streaming interface is used to provide AIS data under a specific format with higher frequency to the SSN central system. MSs can be connected directly to SSN central or through Regional AIS servers: • Mediterranean Regional AIS server (MARES): RS is maintained by Italy. Operational region – Mediterranean Sea. RS interconnects 11 MSs and three 3rd countries, and supports AIS data exchange for the specific regional projects. • North Atlantic Regional AIS server: RS is maintained by Norway. Operational region – North Atlantic. RS interconnects 2 MSs and supports S-AIS data submission to SSN. • HELCOM Regional AIS server: RS is maintained by Denmark. Operational region – Baltic Sea. It interconnects 8 MSs and one 3rd country. • North Sea Regional AIS server: RS is maintained by Denmark. Operational region – North Sea. RS interconnects 7 MSs

No.	Name	Description
SSN developments		
	Improving Hazmat reporting to SafeSeaNet	The objective is to "develop and propose measures for improving the Hazmat reporting in SSN taking into account existing specifications of the SSN system and the findings of the EMSA survey on Hazmat reporting". The establishment of a dedicated working group (WG) was proposed during SSN Workshop 19 and approved by SSN HLSG 9 meeting. To improve Hazmat reporting, the following actions were proposed: • to draft a guidelines document and • to develop and maintain a reference database at central level for Hazmat products that might be notified in accordance with Directive 2002/59/EC
	Improved Incident Report	The main outcomes of the Incident Reporting Working Group were: • Incident Report (IR) guidelines (providing information and advice to SSN users on the method for reporting incidents in SafeSeaNet). • New XML protocol for Incident Report. These changes have been implemented in December 2013 in production environment.
	SSN Graphical Interface (SSN GI)	According to the IFCD Chapter 2, the central SSN Web browser-based mechanism offers the Graphical Interface (GI) which uses geographical information system technology to provide access to ship positions enriched with additional data from the central SSN system. A refurbishment of the SSN GI was launched to ensure better system performances (increased speed) and increase user satisfaction (improved ergonomics of the web application). This new GI has been deployed in production environment in December 2013.

No.	Name	Description
SSN developments		
	MRS reporting	To maximise the benefits from MRS information, the establishment of a dedicated working group on MRS was proposed at SSN18 (18 October 2012). SSN HLSG 8 (December 2012) approved the proposal and the following tasks: • The drafting of MRS reporting related business rules and dedicated guidelines for MRS notifications. • Assessment of the possibility of phasing out the phone/fax reporting option. • The development of a new MRS notification. • The set-up of an XML request/response mechanism which is able to distinguish between AIS and MRS details. At SSN 20 (November, 2013) EMSA presented the progress achieved by the MRS WG. It included the relevant business rules for obtaining enhanced MRS data exchange via SSN, the changes to the XML messaging structure as well as a time plan proposing these changes to be done along with SSN V3 developments (by June, 2015). The SSN group validated the MRS proposal which will be submitted to the SSN HLSG 10 in January 2013.
	Reference Vessel Database (RVD)	At the HLSG 7 meeting (July 2012), the HLSG mandated the formation of a correspondence sub-working group to examine data storage and access policy proposals for a RVD to be hosted at EMSA as a common service for all EMSA applications. The process was finalised at the end of October 2012. The most relevant principles are: • The ship data sources proposed to be used for validation purposes are the following: SSN vessel database, EU LRIT ship database, THETIS ship database and commercial source databases; • The RVD information will be made available to the MSs, who may use it for cross-checking with data stored within their national vessel databases; • The possibility of including additional ship particulars to those used as the main references (i.e. IMO, MMSI, Name, Call Sign), such as deadweight, type, length, width, year of build/keel laid, gross tonnage, net tonnage, etc., could be considered.

No.	Name	Description
SSN developments		
	SSN XML enhancements	At HLSG 6 (Brussels, 13 December 2011), Ireland submitted a document on the "enhancement of the SSN XML functionalities" with the objective to develop an automatic XML based mechanism to provide information held in the central SSN to the Member States' own information systems. The HSLG 7 tasked EMSA to assess the feasibility of enhancing the SSN XML interface by: • Facilitating use of the SSN receipt message through adding additional information. • Automatically "pushing" voyage related information when ships enter predefined areas. At SSN HLSG 9, EMSA provided an analysis in relation to the proposal, and it was agreed to continue to work on the technical specifications for the implementation of the voyage 'push mechanism'. The completed proposal will be submitted for approval at HLSG 11.
	SSN V.3	Following the adoption of the Directive 2010/65/EU Member States shall accept the fulfilment of reporting formalities in electronic format, and their transmission via a single window, no later than 1 June 2015. To comply with these requirements and for the exchange of information between MSs, the structure and procedures of the existing SSN should be amended for the additional messages: • Notification of waste and residues (Article 6 of Directive 2000/59/EC); • Notification of security information (Article 6 of Regulation (EC) No 725/2004). This will have an impact on both the IFCD document and the SSN mandatory documentation (SSN System Interface Guide and the Member State Commissioning Test Plan).
	Reporting and Exchanging of Information on Exemptions	The 20th SSN Workshop (6 November 2013) agreed to include in the SSN central system a functionality whereby Member States may report exemptions granted in accordance with Article 15 of Directive 2002/59/EC (as amended). This proposal will be submitted with SSN V3 requirements to the SSN HLSG 10 for approval.
	SSN security study	On 17 November 2009, the Commission (DG MOVE) invited EMSA to conduct a study with the objective of identifying technologies and security techniques and indicating possible network and information security risks/problems that could affect the EU-wide SafeSeaNet (SSN) network. The study evaluated the current status of the implementation of SSN and proposed a baseline for security functions based on best practice and security standards. It allowed to establish an actualise SSN security policy as define in IFCD Chapter 7.

SSN related pilot projects		
	Blue Belt pilot project	The initiative to launch a Blue Belt pilot project was announced at the informal Transport meeting (16 September 2010) and endorsed at the Transport, Telecommunications and Energy (TTE) Council meeting on 2 December 2010. For the pilot project, participation had been agreed with the following Member States: BE, UK, CY, NL, FI, PT, DK. DG MOVE and TAXUD were involved, as well as other organisations, such as European Community Ship-owners' Associations (ECSA) and the World Shipping Council (WSC). The purpose of the project was to promote and to facilitate Short Sea Shipping in the European Union by reducing the administrative burden for intra-Community trade. For this purpose, information from SSN on ships' voyages were provided to custom authorities.
	SSN/VMS pilot project	The objective of the pilot project was to investigate the interactions between the two systems: the SSN and the fisheries monitoring sector, with the aim to explore the potential synergies which could result from the exchange of VMS and AIS data via SSN. The project outcomes indicated that the correlation of VMS and AIS data can increase operational capabilities, and in particular, the ability to monitor fishing activities and/or violation of restricted fishing areas.
	SSN/radar data exchange	The main objective of the pilot project was to test the potential for the exchange of radar-based data (VTS and non-VTS) between the participating MSs, thereby assessing the practicality and value of cross-frontier exchanges, and testing the various options for exchange of radar data through SSN and in particular the message content and format. The main outcomes of the pilot project were that: • the exchange of radar data through SSN is possible and can enable the exchange of all types of ship position data ("cooperative" targets monitored through AIS and "non-cooperative" though radar) and • can increase the benefits deriving from the data correlation and use of existing SSN mechanisms and functions.
	SSN proxy pilot project	At SafeSeaNet WS12 (Lisbon, 21/22 October 2009) MSs agreed to set up a pilot project in order to test the use of the so-called SSN Proxy application to receive AIS enriched data by the participant MS. The pilot project objectives were to demonstrate the usability/effectiveness of SSN data streamed to MSs through the proxy application, and to evaluate the conditions for making the SSN proxy application to become a distribution tool to stream data to the MSs.

SSN related pilot projects		
	EU/RF cooperation	In 2008, the Ministry of Transport of the Russian Federation (MTRF) and DG MOVE set up a technical consultation process to investigate the possibility of exchanging information between SafeSeaNet (SSN) and the Russian Federation system (MoPe). This resulted in the set-up of a pilot project, the main objective of which was to connect MoPe with SSN in order to enable the exchange of maritime information (AIS, Port and Hazmat notifications) between the Baltic Member States, Norway and the Russian Federation. Required technical implementations were made by the RF and EMSA. Once the agreement will been signed by the Commission and the RF, it is possible to launch the first phase of the pilot project.
	EU/Morocco cooperation	At HLSG 7 (Brussels 4 July 2012), it was agreed to launch a pilot project with Morocco, with the participation of a limited number of Member States. The proposed phases of the pilot project are: • Phase 1: exchange AIS data; • Phase 2: exchange of ship pre-arrival and Hazmat information; • Phase 3: exchange of MRS data (this option needs to be further assessed by Morocco, the Member States and the HLSG). The launch of phase 1 is technically feasible in a short term.
	Access to SafeSeaNet data for the BE-AWARE Project	The Bonn Agreement secretariat made a formal request to the SSN HLSG to obtain selected types of SSN notifications sent during 2011 by Bonn agreement members Belgium, Denmark, France, Germany, Ireland, Norway, the Netherlands, Sweden and the United Kingdom. The SSN High Level Steering Group (SSN HLSG) agreed that the requested information should be supplied to the Bonn agreement for use in the project, and formalised its acceptance via written procedure. As a follow up of the approval of the HLSG in the form of a written procedure, a Memorandum of Understanding (MoU) has been signed between EMSA and the BA.

SSN related pilot projects		
	Ship emissions pilot project	On the basis of the authorisation given at the HLSG 6 meeting (December 2011) for the use of SSN AIS data in the assessment of ship air emissions, EMSA has signed a Memorandum of Understanding with the Finnish Meteorological Institute (FMI) in March 2012 regarding the usage of SSN AIS data for the year 2011 and for the whole EU sea-area to make a general estimate of shipping's air emissions in European waters based on a set of pollutants (CO2, CO, NOx, SOx, PM2.5). The project outcome provides an overview of the ship air emissions and distribution by ship type or sea area and according to emissions components (SOx, NOx, CO, CO2 and PM2.5).
	Non-VTMIS users granted access to SafeSeaNet	The extension of access to SafeSeaNet for certain categories of institutional users on a pilot basis was agreed at the SSN HLSG 3. At HLSG 6 (13 December 2011), it was decided to continue the pilot project until the end of 2012. It was also agreed that, by the end of 2012, EMSA should analyse the technical impact of the pilot project and provide the HLSG its findings, on the basis of which a decision will be taken on whether or not to continue providing access. Evaluation of the SSN pilot projects for non-VTMIS users was presented by EMSA at SSN HLSG 9 (June, 2013). It was decided to continue the project with the current conditions.
	Coastal station and place of refuge information (STMID)	Following the discussion at HLSG 9 (June 2013) on the work being undertaken on places of refuge, EMSA was tasked to re-activate the Shore-based Traffic Monitoring and Information Database (STMID). In addition, EMSA was also requested to assess how the information would be distributed to the Member States authorities concerned, through a new SSN STMID service. The purpose is to re-use and update of the information gathered initially in 2006 and improve the effectiveness of SSN. This service would allow Member States to provide/update information on their competent authorities, as required by Directive 2002/59/EC, including the places of refuges related information and list of contact points as required by Article 20a.3, and share this information with other Member States.

Integrated Maritime Services via the IMDatE		
	IMDatE	The Integrated Maritime Data Exchange platform (IMDatE) provides an interoperable data exchange platform which brings together the existing EMSA monitoring and tracking systems that are used for maritime safety, security and protection of the marine environment (SafeSeaNet, CleanSeaNet, the EU Long Range Identification and Tracking Cooperative Data Centre [EU LRIT CDC] and THETIS) as well as other external systems (e.g. satellite AIS). IMDatE is not a new, stand-alone system developed as an additional pillar of the EMSA portfolio of services and it does not aim to replace any of the existing EMSA systems. The guiding principle of IMDatE is the re-use as much as possible of modules and services/interfaces already developed within the existing systems and to develop a Service Oriented Architecture which is able to provide a fast, flexible and configurable exchange of data between systems; always in accordance with the data access rights associated to each system and/or user. The platform, with SSN at its core, is built to systematically collect and fuse ship position reports, perform correlation with the ship detected targets from satellite imagery or coastal radar and aggregate available ship information from the EMSA applications and databases, to provide a complete maritime picture. In addition to the live traffic picture it provides analysis tools to assess in detail vessel tracks or specific events associated to one or more vessels. The platform has an in-built, automated, monitoring engine that alerts the user to specific vessel behaviour or events, such as exit or entry to sensitive areas, at-sea encounters between vessels, sudden change of port of call or even deviation from expected track. In addition, the IMDatE is also able to ingest and process 3rd party data/information in accordance with their associated data access rights and either fuse or display this data separately, as required. A new and important module of the IMDatE is the SAT-AIS data processing capability. This module is able to process Satellite-AIS information from different providers and then distribute the data either as an individual stream or as part of the integrated track.

Integrated Maritime Services via the IMDatE		
	Integrated Maritime Services	A number of operational services have been implemented and are offered via the IMDatE the platform. While the focus of all EMSA's operational systems is to fulfil the requirements as set by the users, it does not divide its users within pre-defined user communities. It is the notion of function which is recognised and within this context EMSA's services cover a number of functions which fall within the following pre-defined user communities: Border Control, Customs, Defence, Fisheries Control, Law Enforcement, Marine Environment, and Maritime Safety and Security. More specifically via IMDatE EMSA provides the following integrated maritime operational services: Anti-piracy support for merchant fleet monitoring, Border Control Surveillance support, and Fisheries campaign monitoring.
	Anti-piracy support	Anti-piracy support for merchant fleet monitoring for the EU Naval Force (EU-NAVFOR), where EMSA provides a 24/7 basis customised interface allowing for a comprehensive maritime picture of vessels in Indian Ocean and crossing areas of risk. Sources of ship position are from EU and non EU LRIT data, voluntary reporting position data, ship borne AIS data from naval units, Satellite-AIS data and piracy risk indexes.
	Border Control Surveillance support for FRONTEX	Border Control Surveillance support for FRONTEX, where EMSA is developing an interface in accordance with specific requirements of Frontex for the provision of the most up-to-date maritime domain awareness picture, focusing on the detection and reporting of non-cooperative targets. The system integrates data provided by SSN, LRIT, satellite vessel detections service (VDS), high resolution radar and optical satellite images.
	Fisheries campaign monitoring for the European Fisheries Control Agency (EFCA	Fisheries campaign monitoring for the European Fisheries Control Agency (EFCA), where EMSA cooperates in the monitoring of the joint deployment plan (JDP) for Bluefin Tuna (BFT) and North Atlantic Fisheries Organisation (NAFO), and North Sea – Western Waters (NS) fisheries campaigns. EMSA provides EFCA operators with access to an integrated data stream which includes VMS data, VTMIS data provided by EMSA (including SSN AIS, LRIT, and other sources), Satellite-AIS data and Visual sightings, positions of inspections carried out on board fishing vessels, and satellite imagery (optical and radar).

Integrated Maritime Services via the IMDatE		
	Pilot Service to volunteer Member States	In addition the IMDatE platform provides a Pilot Service to a number of volunteer Member States (currently 10). This service provides users from the Member States a number of operational services, inter-alia: • A single screen combining all data; • Integrated ship tracking, including the correlation among different data sources; • Availability of a global satellite-AIS data stream; • Availability of information from the different EMSA applications; • Automated Behaviour Monitoring; • System-to-system interfaces. In addition to this the following elements are also addressed: • How MS specific tracking data sources may be combined in this maritime picture; • Promoting the sharing of maritime data sets among different organisations and MS, always considering the relevant data access rights; • Ability to overlay user specific layers and relevant operational information.

Annex 8: Evaluation of SSN Pilot Projects for non-VTMIS users.

Abridged Meeting Document: Evaluation of the SSN pilot projects for non-VTMIS users (Agenda item 6.1), 9the SafeSeaNet High Level Steering Group, Brussels, 19 June 2013.

Overview

The HLSG 3 (2-3 June 2010) agreed to extend access to SSN for certain categories of non-VTMIS institutional users (i.e. users not falling under the framework of Directive 2002/59/EC, the VTMIS Directive). It was agreed that access would be granted on a pilot basis, and given the following conditions: for a limited period up to one (1) year; through the SSN web interface (textual and the SSN Graphical Interface or SSN GI) only; on a need to know; and for a limited number of identified users.

The analysis is based on the questionnaire feedback provided by pilot project participants, their evaluation together with the evaluation of the pilot project from EMSA's perspective (based on participation of new users, analysis of the SSN technical limitations, administrative impact, usability and availability of the system and the pilot project costs).

Participants

The following requests to grant access to SSN to non-VTMIS users have been made by Member States National Competent Authorities (NCAs) to EMSA:

- **Cyprus**: Two requests were made by the Cypriot SSN NCA on behalf of the Department of Fisheries and Marine Research, and the Department of Customs and Excise.
- **Denmark**: One request was made by the Danish SSN NCA on behalf of the Danish Customs authority.
- **Greece**: Two requests were made by the Greek SSN NCA on behalf of the Ministry of Defence.
- **Italy**: Four requests were made by the Italian SSN NCA on behalf of the Italian Navy, the Ministry of Interior –Central Directorate for Immigration and Border Police, the Ministry of the Environment, Land and Protection, and the Italian Customs Agency and Monopoly.

- **Portugal**: Eleven requests were made by the Portuguese NCA on behalf of the Directorate-General for Fisheries and Aquaculture, the Portuguese Border Control authority, the Portuguese Coastal Control unit, the Portuguese Maritime Authority General (DGAM), and the Portuguese Maritime Captaincy.
- **Romania**: One request was made by the Romanian SSN NCA, on behalf of the County Inspectorate of Border Police Constanta.

These requests came from different categories of users who requested access SSN for purposes other than directly for maritime safety, port and maritime security, marine environment protection. These users belonged to different types of organisations: border control authorities, customs, defence, fisheries, law enforcement and pollution response authorities.

Technical impact
No impact to the normal operational use of SSN has been pointed to or detected. *The SSN infrastructure has proven to be very reliable and stable, and was not affected by the additional users*. It should be noted that for reasons independent of the pilot project, an extension of the computing capacity of SSN took place during the period of the pilot project execution.

During the execution of the pilot project, the SSN performance requirements were met, and the system was available more than 99% over that period, meeting the requirement in the IFCD for the VTMIS users.

Administrative impact
Within the framework of the pilot project, EMSA managed the creation of the new accounts on behalf of SSN NCAs which, from an administrative point of view, was a relatively easy task. *The administrative impact was manageable as the number of requests was limited.*

Financial impact
The pilot projects caused *no financial (or technical) impact to EMSA* since the existing SSN web application, developed for covering the needs of the VTMIS users, was reused. There were some limited costs related to the launching and maintenance of the procedures for granting access. *This cost is estimated as*

the equivalent of one week of work in total for all the associated administrative and technical actions.

The pilot access for the non-VTMIS users creates a possible licence issue related to the use of maritime charts. For the moment, the cost is covered by the EMSA budget for nautical charts licences purchase. However, should the number of SSN GI users increase significantly, this financial impact may need to be re-assessed.

Feedback from the non-VTMIS users: Replies to the Questionnaire

EMSA sent a questionnaire to the non-VTMIS users participating in the pilot project to collect their feedback on the use of SSN data during the pilot project, to evaluate possible strengths and weaknesses of the system, to assess the service and the possible improvements anticipated. The following initial information has been extracted from the answers:

- The survey represents a wide spectrum in terms of the sectors in which the respondents work (e.g. border control, customs, defence/navy, environmental protection, fisheries, security, police, and maritime law).
- *The non-VTMIS users are interested in data concerning their areas of responsibility (mainly AIS data and PortPlus data).* The various needs and purposes of requesting access to SSN were stated (such as the maritime safety, traffic monitoring, ships inspections, fisheries monitoring, support to SAR activities, maritime security and law enforcement).
- The majority of users have in place an institutional framework (legislation/regulations/ agreements) that support the request to access VTMIS data. These respondents reported using the SSN data "constantly", or "often" in accordance with their individual needs. The EU agencies used the SSN data less frequently than the Member States users. The participants also use other databases and systems for data cross-checking purposes.
- All respondents from MSs and two from the agencies indicated that access to SSN is beneficial to their work, and expressed their interest in further implementation of additional functionalities/services/databases and capabilities for SSN. A positive response to the possibility of using SSN

as a tool for operational support was given by the majority of respondents.
- Areas suggested to be further improved in SSN include: user-friendliness of the SSN web interface, increasing the data availability (e.g. more specific queries and databases), and a new access policy (access other than Web).
- There were no financial impact/costs for setting up or using the service described by non-VTMIS users.

Outcome and Indications

Based on the above evaluation the following conclusions can be drawn:

a. The pilot project demonstrated the interest of the EU bodies and MAOC-N in accessing SSN. However, the number of requests received from Member States was limited. This might be explained by the way the VTMIS Directive regulates the access rights (based on functions and not on user communities) and by limited awareness. It should be noted that some pilot project participants of the Member States who have requested access to SSN were in fact authorized VTMIS users, since they were performing some activities within the VTMIS function.

b. All the Member States participants and two of EU users indicated that maintaining access to SSN would be beneficial to their work and that SSN supports their operational needs.

c. The existing infrastructure of the SSN central system can effectively support a higher number of additional "non-VTMIS users" as web users.

d. The user-friendliness of the SSN web interface and the development of additional functionalities, services and databases could be areas for further improvement. Some EU bodies consider that processing of the SSN data at their premises or access to specific services should better serve their needs.

e. The administrative impact on EMSA is manageable given the rather limited number of pilot project users. There has been only some limited administrative cost (EMSA staff involvement, estimated to be equivalent to one working week) related to the launching and maintenance of the procedures for

granting access. From the participants' side there was no financial impact for setting up or using the service.

f. The pilot projects caused no technical impact to EMSA, since the existing SSN web application developed to cover the needs of the VTMIS users could effectively be reused. The web application was available more than 99% of the time over the entire period, meeting the same standards as those required for the VTMIS users.

Assessment

The pilot projects, as decided by HLSG 3, had the purpose to see how the system could manage more users, wider scope of activities and if there would be any obstacles, technical, cost or other, for such use and in the extension for allowing a more permanent solution (access).

On the basis of this evaluation indications are quite clear that:

- SSN can handle more 'needs' or 'users', without any need for technical adaptations or at extra costs.

- Non-VTMIS users involved from the MSs (covering the whole range of functions and users) all indicate that they have benefitted from the system and services provided. None have had any technical problems or costs.

- EU/International institutions: two indicated their interest in continuing accessing SSN, one institution indicated that it is not interested in continuing the service, and two institutions expressed their interests in more customised service.

In conclusion, the evaluation of the pilot projects show that there are no administrative, technical or economical obstacles for the wider use of the system 'serving' also other 'functions' in the maritime domain, on a more permanent basis. However, the more detailed conditions under which this could be accepted has yet to be defined.