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Table of Contents

1.	Introduction / purpose of the document.....	5
2.	Definitions and Abbreviations	6
2.1	Definitions.....	6
2.2	Acronyms and Abbreviations.....	6
3.	Benefits of establishing a National Single Window.....	8
3.1	Benefits for authorities.....	8
3.2	Benefits for the shipping industry	8
4.	Legal framework	9
4.1	Directive 2010/65/EU	9
4.2	Reporting Formalities.....	9
4.3	Exchange of Information between Member States	10
5.	National Single Window Definition and Models	11
5.1	Definition	11
5.2	NSW Models	11
5.3	Legacy systems	12
6.	Key actions in establishing a National Single Window.....	14
6.1	Political will	14
6.2	Strong Lead Organisation	14
6.3	Co-operation between Government and Industry	14
6.4	Establishment of Clear Boundaries and Objectives.....	15
6.5	User Friendliness and Accessibility.....	15
6.6	Legally-enabling environment.....	15
6.7	International Standards and Recommendations	16
6.8	Identification of Possible Obstacles	16
6.9	Financial Model	17
6.10	Technical Assistance	17
6.11	Promotion and Marketing	17
7.	Roles and Responsibilities.....	18
7.1	Data Providers	18
7.2	NSW authority	18
7.3	Relevant authorities	19
8.	Data elements to be provided to the NSW	21
8.1	Identification of data elements.....	21
8.2	Inclusion in the NSWs elements	21
8.3	Technical definition of data elements	22
9.	Business Process.....	23

9.1	Notification.....	23
9.2	Ship clearance	23
9.3	General information sequence.....	24
9.4	Receipt	25
9.5	Cancellation	25
9.6	Acknowledgement	25
10.	NSW features	26
10.1	General principles	26
10.2	User interface	28
10.3	System interface.....	29
11.	General requirements	31
11.1	Data storage	31
11.2	Availability	31
11.3	Security	31
11.4	Personal data protection	31
11.5	Classification of the information	31
	Annex 1: Ships to which the Directive applies.....	33
	Annex 2: Options for dealing with cargo formalities in the NSW	36
	Annex 3: Best Practices	37

1. Introduction / purpose of the document

This document focuses on establishing a National Single Window (NSW) for maritime transport as required by Directive 2010/65/EU and provides guidance for a harmonised understanding and implementation of the NSW.

These guidelines do not lay down a definitive way in which a NSW should be constructed but rather gives a basic outline of the main issues that need to be considered, some of the available tools and standards, the steps to be taken for developing the NSW and specifications for elements to be harmonised in order to obtain maximum benefits from the installations. The Member States should see how these steps can be adapted to their local circumstances and the set-up of their public administrations.

This document is drafted using the following eMS documents as references:

Ref.	Title	Approval
1.	Single Window Definition – version 1.7	eMS 6, 4 Oct 2014
2.	Data Mapping Report – version 1.4	eMS 12, 1 Jul 2014
3.	Harmonised Business Rules – version 1.0	eMS 9, 18 Jun 2013
4.	Customs Business rules – version 1.0	eMS 9, 18 Jun 2013
5.	Border Control Business Rules – version 1.0	eMS 8, 20 Mar 2013
6.	Maritime Declaration of Health (MDH) Business rules – version 1.0	eMS 8, 20 Mar 2013
7.	General Maritime Business rules – version 1.1	eMS 7, 12 Dec 2012
8.	Security Business rules – version 1.1	eMS 5, 12 Jul 2012
9.	Waste Business rules – version 1.0	eMS 5, 12 Jul 2012

The development of the NSW should also take into consideration existing international recommendations, guidelines and standards, for example, the:

- UN/CEFACT Recommendation No. 33: Recommendation and Guidelines on Establishing a Single Window,
- ISO/PAS 28005-1 Ships and marine technology — Electronic port clearance (EPC) — Part 1: Message structures — Implementation of a maritime single window system, and
- IMO Guidelines for Setting up a Single Window System in Maritime Transport.

Chapters 1 to 7 of this document are of a general nature as they describe the background information, definitions, stakeholders and key actions in developing a NSW. Chapters 8 to 10 illustrate the content of the NSW and the various basic services that it may offer. The last Chapter provides general requirements necessary for building the NSW.

Recommendations regarding the layout and contents of the NSW user interface are provided in the NSW user interface layout document.

2. Definitions and Abbreviations

2.1 Definitions

For the purpose of this document, the definitions in Article 2 of Directive 2010/65/EU shall be applicable, as well as the following definitions and abbreviations:

Clearance: the accomplishment of formalities necessary to permit: a) goods to enter a country, to be exported or to be placed under another Customs procedure, b) persons to enter or leave the territory of a State, and c) a ship to enter or depart the territorial waters of a state or a port within the territory of a State. The scope of these guidelines take into consideration only ship clearance: which is the process undertaken by an authority for the purpose of determining if a ship may enter or leave a port of a Member State.

Data provider: a person and/or an organisation responsible for supplying information to the NSW,

National Single Window (NSW): is an environment for collection, dissemination and exchange of vessel reporting information with a structured and commonly defined data structure, rules and management of access rights, which are in accordance with relevant international, national and local legal requirements.

NSW authority: The competent authority or body designated by a Member State to implement the provisions of Directive 2010/65/EU and to oversee the setting up and operation of the NSW.

Relevant authority: A national or local authority which is involved in the clearance of ships arriving at or departing from a port or has legal rights to access the information collected by the NSW.

SafeSeaNet system (SSN system): This comprises both the national and central SSN systems as defined in the IFCD document.

2.2 Acronyms and Abbreviations

Directive 2000/59/EC	Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues
Directive 2002/59/EC	Directive 2002/59/EC on establishing the Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC, as amended
Directive 2009/16/EC	Directive 2009/16/EC on Port State Control (Recast)
Directive 2010/65/EU	Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC
Regulation (EC) 562/2006	Regulation (EC) No 562/2006 on the rules governing the movement of persons across borders (Schengen Borders Code)
Regulation (EC) 725/2004	Regulation (EC) 725/2004 on enhancing ship and port facility security
Regulation (EEC) 2913/92	Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code
Regulation (EU) 952/2013	Regulation (EU) No 952/2013 laying down the Union Customs Code
ECS	Export Control System (of Customs)

EC	European Commission
EDIFACT	Electronic Data Interchange For Administration, Commerce and Transport (of UN)
eMS	Expert group on Maritime administrative simplification and electronic information services (of EC)
ENS	Entry Summary Declaration
EU	European Union
FAL	IMO Convention on Facilitation of International Maritime Traffic, 1965, as amended
HAZMAT	Dangerous and Polluting Goods
ICS	Import Control System (of Customs)
IFCD	Interface and Functionalities Control Document (of SSN)
IHR	International Health Regulations (2005)
IMO	International Maritime Organisation
ISO	International Standards Organisation
MS	Member State (of EU and EEA)
NSW	National Single Window
PCS	Port Community System
PFSO	Port Facility Security Officer
PSO	Port Security Officer
PSW	Port Single Window
SBC	Schengen Borders Code
SSN (V3)	SafeSeaNet (version 3)
UCC	Union Customs Code
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
WCO	World Customs Organisation
XML	eXtensible Markup Language

3. Benefits of establishing a National Single Window

The NSW can simplify and facilitate to a considerable extent the process of providing and sharing the necessary information to fulfil regulatory requirements for both authorities and the shipping industry. The use of such a system can result in improved efficiency and effectiveness of official controls and can reduce costs for both authorities and industry due to better use and re-use of resources.

3.1 Benefits for authorities

The NSW can improve the processes of the authorities and may lead to a better organisation of existing governmental procedures, while at the same time promoting a more open and simplified approach to the way in which authorities operate and communicate with industry. For example, as the shipping industry will submit electronically all the required information, which is automatically made available to all authorities entitled to have this information, more effective systems can be employed by the authorities to carry out quicker and more accurate validations. This should also result in better co-ordination and co-operation between the authorities involved in ship clearance procedures.

Risk management techniques for control and enforcement purposes can also be enhanced through the NSW system that collects all data in a systematic way, resulting in more secure and efficient procedures.

The use of a NSW, with its legal and procedural rules, may reduce errors and increase compliance. In addition, the collection and co-ordination of the required information, through a NSW should reduce the use of both human and financial resources, enabling authorities to re-deploy resources previously used for administrative tasks to other areas.

In summary the benefits to authorities are:

- more effective and efficient deployment of resources;
- correct (and often increased) revenue yield;
- improved compliance;
- enhanced security;
- increased integrity and transparency.

3.2 Benefits for the shipping industry

The main benefit for the shipping industry is that they will have a single point for the submission of all required information to all authorities involved in ship clearance procedures. Furthermore, the use of NSWs facilitates the provision of up-to-date information to the industry.

As the NSW enables authorities to process submitted information, both faster and more accurately, ships should benefit from faster clearance and release times, enabling a faster turnaround in ports. In addition, the improved transparency and increased predictability can further reduce the potential for corrupt behaviour from both the public and private sector.

Harmonised NSWs can introduce savings for the industry on the technical implementation as the developed user applications can be re-used in each Member State with minor software tailoring.

Therefore, the main benefits for the shipping industry are:

- cutting costs through reducing delays;
- faster turnaround times;
- more effective and efficient deployment of resources;
- increased transparency;
- savings in the costs for implementing reporting tools.

4. Legal framework

4.1 Directive 2010/65/EU

The legal framework for these Guidelines is 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.

Article 1(1) clearly defines the purpose of this Directive which is “to simplify and harmonise the administrative procedures applied to maritime transport by making the electronic transmission of information standard and by rationalising reporting formalities”.

Article 1(2) of the Directive states that the Directive shall apply to the reporting formalities applicable for ships arriving in and departing from ports situated in the Member States. It also states that it shall not apply to ships exempted from reporting formalities. The Directive defines a ship as “any seagoing ship or craft”. Recital 2 clarifies that “this Directive.....should not introduce any additional reporting requirements for ships not already under such obligation according to legislation applicable in Member States”.

The Directive does not establish any new reporting formalities nor does it repeal any existing reporting obligations set out in the other legal acts of the Union. In other words the ships which are obliged to report the information mentioned in Directive 2010/65/EU are those mentioned in a legal act of the Union (Part A), Member State legislation in respect of notifications mentioned in the FAL Convention and the IHR (Part B) and national legal requirements (Part C). Likewise, ships exempted from submitting a notification under the applicable legal provisions are not obliged to report under Directive 2010/65/EU.

Annex 1 to this guideline provides a summary of the reporting formalities, the ships which are required to submit the reporting formality in terms of the legislation, the exemptions which may be given by the Member States in terms of the same legislation and the relevant Business Rules.

Article 2 of the Directive defines the electronic transmission of data as “the process of transmitting information that has been encoded digitally, using a revisable structured format which can be used directly for storage and processing by computers”. Therefore, the submission of information on paper or in ‘pdf’ files attached in e-mails will not be allowed after 1 June 2015.

4.2 Reporting Formalities

The reporting formalities are defined as the “information set out in the Annex which, in accordance with the legislation applicable in a Member State, must be provided for administrative and procedural purposes when a ship arrives in or departs from a port in that Member State.” The Annex to the Directive classifies these reporting formalities in three categories as follows:

- Part A – The six reporting formalities identified in this section have their legal basis in five Legal acts of the Union;
- Part B – Eight notifications required in terms of two International legal instruments: the International Maritime Organisation Convention on the Facilitation of International Maritime Traffic (FAL) 1965 and the International Health Regulations (IHR) 2005; and
- Part C – other formalities required from ships in terms of the national legislation of the Member States.

Each Member State should take measures to ensure that the reporting formalities are requested in a harmonised and coordinated manner within that Member State.

Data elements identified in the legal acts of the Union are mandatory and hence shall be included in the harmonised message. As regards to the data elements required in terms of part B and C

have to be analysed by the authorities in the Member States to ensure that only essential data elements will be requested.

4.3 Exchange of Information between Member States

Directive 2002/59/EC, as amended, defines SSN as the Union maritime information exchange system developed by the Commission in cooperation with the Member States to ensure the implementation of Community legislation. Moreover, the revised Annex III of Directive 2002/59/EC identifies various Union legal acts for which SSN should be used to exchange information and provides that SSN should support the facilitation and establishment of the European Maritime Transport Space without Barriers. Hence, the scope of SSN covers not only maritime safety, security and pollution prevention but also maritime efficiency and facilitation of maritime traffic.

Directive 2010/65/EU clarifies further that Member States shall ensure that information requested by legal acts of the Union, mentioned in part A of its Annex, is made available in their national SSN systems and shall make relevant parts¹ of such information available to other Member States via central SSN. Article 6 specifies that this exchange does not apply, unless otherwise provided by a Member State, to cargo and border control information. Therefore, this Article allows Member States to use SSN to exchange cargo and border control information if there is a need to exchange this information. The cargo and border control information shall be exchanged through other EU systems (such as the e-Customs for the cargo), if such a possibility is provided for in an EU legal act.

The development of alternative exchange mechanisms for the same purpose will only lead to a multitude of parallel systems, additional administrative burdens and the commitment of additional technical, operational and financial resources undermining the objective of simplification of administrative procedures and rationalisation of resources.

The direct link between Member States should only be used to exchange data for purposes other than those covered in Directive 2002/59/EC and Directive 2010/65/EU.

¹ To-date the relevant parts of the legal acts refer to the following information:

- a) Port call information: Article 4 of Directive 2002/59/EC as amended.
- b) Hazmat information: Articles 4 and 13 of Directive 2002/59/EC as amended.
- c) Security information: Article 6 of Regulation (EC) 725/2004.
- d) Waste and cargo residues information: Article 6 of Directive 2000/59/EC.

5. National Single Window Definition and Models

5.1 Definition

The development of a NSW is the main requirement for the implementation of Directive 2010/65/EU. In summary the NSW should:

- capture information submitted electronically by data providers;
- distribute or give access to information to different authorities (such as Maritime, Ports, Customs, Security, Waste, Health, Border Control);
- share information with other national systems through interoperable systems;
- make relevant information available in SSN for exchange with other Member States.

The conceptual regional model for achieving this objective is depicted in Figure 1 below:

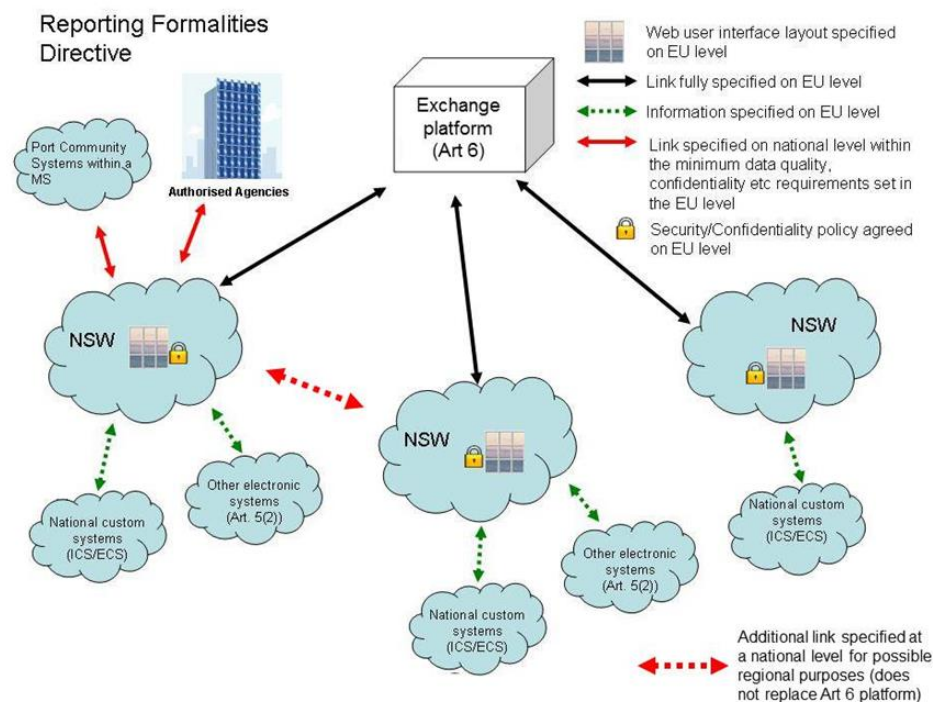


Figure 1: Conceptual Model

This Conceptual Model illustrates that the NSW consists of an environment whereby ship data providers can submit information electronically either through a user interface or a system-to-system interface. Port Community Systems could be included as part of this environment as long as they respect the same requirements of the NSW with respect to the services delivered to comply with Directive 2010/65/EU.

The business processes used by the shipping industry for submitting notifications, updating data in the notifications and receiving receipt and acknowledgement messages from the relevant authorities concerned via the NSWs should be harmonised at EU level.

5.2 NSW Models

The general NSW configuration is shown in the figure below. This figure illustrates the information flows which take place within the NSW, covering:

- a) the submission of information by the shipping industry (e.g. ship master, operator or agent) and the receipt of decisions from authorities;

- b) the distribution of the received information to the authorities and the submission of their decisions to the shipping industry; and
- c) the exchange of relevant information between Member States via the SafeSeaNet system.

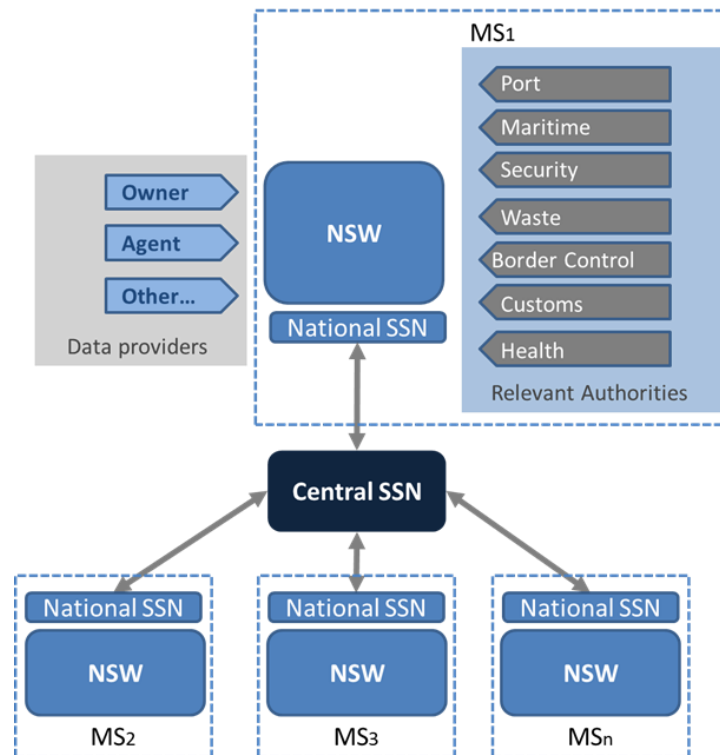


Figure 2: System Configuration

Within this general system configuration there are many possible ways of how to define the architecture of a NSW as each Member State will have its own unique requirements and conditions. The national architecture will, for example, depend on:

- whether the NSW has to be linked to other authorities systems or authorities will only access information through a NSW user interface;
- whether the national SSN system will form part of the NSW solution or it will continue to be a separate system but linked on a system-to-system basis;
- which legacy systems will be included within the NSW environment.

5.3 Legacy systems

The introduction of the NSW will by necessity change some business processes. The purpose of the NSW is to simplify reporting formalities; however, the overall cost will be determined by the costs of necessary software and hardware investments as well as by the costs of changes to processes. Thus, to keep costs down, careful consideration should be given to which legacy systems, processes and information flows can be kept without unduly harming the overall objective of simplification. Therefore, it is important to review existing business processes and electronic systems for receiving, storing, verifying and exchanging ship notifications in order to:

- determine overall requirements, including specific requirements for additional systems development, interfaces, outlets and the possible development of interface systems to existing legacy systems for the proposed solutions;
- determine if existing systems will be able to handle increases in the volume and flow of data;
- examine issues related to the verification and validation of data.

However, in all cases the emphasis should be on the harmonization of processes and data models,

One of the main legacy systems is the SafeSeaNet system which already is used to exchange some of the information (port and HAZMAT) required to be available for exchange. Member States need to determine whether the NSW will integrate the national SSN functionalities or the national SSN component will continue to act as a separate system but will be linked electronically to the NSW. The national SSN system has to be upgraded to take into consideration the additional messages (waste and security) which should be made available for exchange. The harmonised XML messages used for exchanging information through the SSN systems and the technical standards have already been established and are included in the XML Reference Guide for SSN V3.

Another major legacy system is the Import Control System (ICS) which has been developed by the customs authorities to receive the ENS data lodged by trade and for the exchange of messages, containing results of risk assessments, between national customs administrations. Options for linking the NSW and the ICS to cater for the submission of cargo related data also need to be considered (options are presented in Annex 2).

Other legacy systems in a Member State are normally Port Community Systems (PCS) and Port Single Windows (PSW). These terms are sometimes used interchangeably while in other cases they are defined separately. A PSW is often seen as a single window system that provides local level information about a vessel, and cargo and persons onboard, to the authorities at port level. A PCS normally has a wider scope and is defined as a system which optimises, manages and automates port and logistics efficient processes through a single submission of data and connecting transport and logistics chains.

The integration between these systems and the NSW can create benefits for all stakeholders involved especially if their use avoids duplication of services and investment in technology. They can be involved in the NSW environment under the decentralised and mixed NSW models.

6. Key actions in establishing a National Single Window

The successful implementation of a NSW depends on certain pre-conditions and success factors that vary from Member State to Member State, as the situation in different Member States and areas of operation vary considerably.

6.1 Political will

Strong political will on the part of both government and industry to implement a NSW is crucial for its successful implementation. The governmental bodies need to adapt the legislation, to cater for the necessary financial and human resources and to set up an appropriate governance structure. While industry should also be ready to adapt their working practices and provide the necessary investments. This political will can only be achieved through a clear understanding of the objectives, implications, benefits and possible obstacles and risks in establishing and operating a NSW. The availability of resources to establish a NSW is often directly related to the level of political will and commitment to the project.

6.2 Strong Lead Organisation

Related to the need for political will is the requirement of a strong, resourceful and empowered lead organisation, either as an agency or governance structure, both to launch the project and see it through its various development stages. This organisation must have the appropriate political support, legal authority, human and financial resources, and links with the shipping industry.

6.3 Co-operation between Government and Industry

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.

The development of the NSW presents a good opportunity for authorities to co-operate to review existing formalities and processes to determine:

- the authorities and agencies that need to have access to the data in the NSW, with an active or passive role;
- to what extent it is possible to harmonise and simplify these requirements, procedures, information flows and data requirements;
- what data will be required, how it will be submitted, and in what format;
- who can submit the data;
- how the data should be shared amongst authorities and agencies and where it should be stored;
- how the data sent on a pre-arrival/departure basis could be used to improve risk assessments, one-stop-shop inspections, business processes and control procedures;
- liability responsibility when something goes wrong;
- the potential benefits of making better use of reference data in meeting legal requirements and in helping to reduce administrative burdens in the transmission of information.

Industry representatives should be invited to participate in the development of the NSW, from the initial development of the objectives, situational analysis, and project design through to implementation. The ultimate success of the NSW will depend on the involvement, commitment and readiness of all stakeholders.

6.4 Establishment of Clear Boundaries and Objectives

Establishing clearly defined goals and objectives for the NSW will help guide the project through its various development stages. These should be based on a careful analysis of the needs, aspirations and resources of the key stakeholders, and also on the existing infrastructure and current approaches to the submission of information to authorities.

Existing requirements, procedures, and processes for the submission of information should be examined in order to identify the needs of potential users, especially regarding the design of the eventual service and associated interfaces. In this regard it is important to take into consideration the Directive's objectives and the requirements, functionalities and content of the NSW which have been established by the eMS group in the approved business rules and Data Mapping Report, referred to in Chapter 1 and also quoted in other parts of this document.

6.5 User Friendliness and Accessibility

Accessibility and user friendliness are also key factors for the success of a NSW project. Comprehensive operating instructions and guidelines should be created for users. However, the most acceptable system is one which will allow users to use without having to spend hours reading manuals. Therefore, when designing interfaces it is important to take into consideration the users' goals, skills, preferences, and tendencies. Once these issues are known it is important to consider the following when designing a user interface:

- Keep it simple - avoiding unnecessary elements and using clear text for labels and messages.
- Be consistent - by using common items throughout the system, users feel more comfortable and are able to do things quicker.
- Be careful in page layout - consider the spatial relationships between items on the page and structure the page based on importance. Careful placement of items can help draw attention to the most important pieces of information and can aid visual scanning and readability. Attention towards particular fields can be made efficiently using fonts, color, light, contrast, and texture.
- Provide feedback – using clear user interface elements and warnings to inform users of location, next steps, changes in state, and errors can reduce frustration for users.
- Reduce burden – the ability for users to pre-fill information using databases or uploading of files will help users to be more efficient and avoid errors.

The shipping industry would benefit from a reduction of the administrative burden of reporting if the user interfaces and the message formats for system-to-system interfaces are harmonised at EU level.

Help Desk and user support services, including training, should be established. The Help Desk can be a useful means for collecting feedback information on areas of difficulty and bottlenecks in the system and this information can be a valuable tool in its further development.

National language requirements are often an obstacle to the simplification and harmonisation of maritime reporting. Member States should make all possible efforts to facilitate written and oral communication in maritime traffic, in accordance with international practice, with a view to finding common means of communication. Therefore, to facilitate the use of the NSW by ship operators it is important for Member States to use also the English language for the helpdesk, user manuals and the reporting formalities in the NSW. It may also be important to address the multilingual requirements in some Member States.

6.6 Legally-enabling environment

The legal basis for establishing the NSW is Directive 2010/65/EU; however, other related laws and legal restrictions must be identified and carefully analysed. For example, changes in legislation can sometimes be required in order to facilitate electronic data submission and exchange. Other legal

issues and restrictions concerning organisational arrangements for the operation of a NSW need to be examined. The following is an indicative list of legal issues to be considered:

- Has an appropriate organizational structure for the establishment and operation of a single window facility been chosen?
- Are proper identification, authentication and authorization procedures in place?
- When and how may data be shared and under what circumstances and with what organizations within the Government?
- Have proper data protection mechanisms been implemented?
- Are measures in place to ensure the accuracy and integrity of data? Who are the responsible actors?
- Are liability issues that may arise as a result of the NSW operation addressed?
- Are there mechanisms in place for dispute resolution?
- Have issues of intellectual property and database ownership been addressed?
- Are there any situations where competition issues may arise?

6.7 International Standards and Recommendations

The implementation of a NSW generally entails the harmonisation and alignment of the relevant documents and data sets. Directive 2010/65/EU provides that the shipping industry should be able to submit reporting formalities to a NSW in a standardised format and whenever practicable to build on international standards developed by the FAL Convention. The harmonisation, simplification and standardisation of all data are an essential requirement for smooth operation of the NSW. The harmonisation of data used by different participants in their legacy system can be one of the biggest challenges for NSW implementation.

These guidelines do not define any particular architecture for implementing a NSW but they point to different internationally recognized standards and best practices that are available and that can be utilized. In many cases the maritime industry still use the UN/EDIFACT standard, but the use of XML as format for electronic data exchange is on the increase. Chapter 8 refers to a mapping exercise taking into consideration different internationally used messages and standards - the WCO Data Model, ISO XML based 28005-1/2 standards and UN/EDIFACT. This will help to provide a common understanding of the data used in the different standards and will better assist in translating messages from one standard to the other. The latter functionality in a NSW will minimise the changes that will be required to existing systems, in particular, on the shipping industry's side.

6.8 Identification of Possible Obstacles

Any radical change to a process will encounter resistance. Therefore, it is possible that not all authorities and industry players may welcome the implementation of the NSW. In such cases, their specific concerns should be identified and addressed as early as possible in the project. Identified obstacles should be considered, taking into account the local situation and requirements.

Finding the best possible solution for implementing legislation is not always easy, in particular, by stakeholders who were not involved in its drafting. Interpreting and implementing Directive 2010/65/EU is no exception. It is well recognised that the Directive provides for the general approach but does not define clear steps of how it should be implemented and some of its provisions may lead to different interpretations. This notwithstanding it is not an option to postpone the implementation of the Directive because of its complexity. The challenge is to explain its obligations in a manner which are easily understood by all stakeholders and then finding the best possible way forward to implement it. These guidelines provide the basis for finding effective solutions in this regard. Cost can be another major obstacle but this must be balanced against future benefits as explained in Chapter 3.

Well planned training, awareness and communication strategies often reduce this resistance. Establishing a proper mechanism for keeping all stakeholders informed on project goals, objectives, targets, progress (and difficulties) creates trust and avoids the type of misunderstanding that can lead to the undoing of an otherwise good project. Personnel are often focused on their particular daily function. Therefore, the importance of their role in the entire concept should be stressed. Attempts should be made to re-focus manual tasks to new roles and responsibilities.

6.9 Financial Model

The success of the NSW will depend on to what degree the business model matches the users' expectations. There is a wide range of variants from which to choose, but some typical models are the following:

- Fully operated and funded by public authorities. No payment for using the system.
- Funded by commercial port companies with no direct pay for usage. This may make sense as a NSW can significantly simplify many port processes.
- Paid for by users as a fee per transaction. This assigns costs directly to the users of the system. This is mostly the case with port community systems operated by private companies.

The benefit of not charging usage fees is that it becomes more acceptable to the data providers. This may in turn give lower return on investments for the authorities. When non-paying options are implemented it is important that long-term funding is ensured before those options are implemented.

Within this context it is important to note that Recitals 8 and 15 of Directive 2010/65/EU highlight that Member States are encouraged to use economic incentives to promote the use of common electronic formats and to use EU funding opportunities for the development of electronic transmission of data.

6.10 Technical Assistance

Member States in the development of their NSW may consider and take advantage of the facility offered by Article 10.2.c of the EMSA Founding Regulation. This article states that EMSA may work with Member States to define technical assistance for the purposes defined in Article 2(3)(b) which include the development of technical solutions and the provision of technical assistance to build the necessary national capacity for the implementation of legal acts of the Union.

This possibility has been utilised by some Member States and the result is very positive. The technical assistance requested by Member States included the following tasks:

- a) Support during the preparatory phase to clearly explain the Directive's requirements to the stakeholders concerned – authorities and the shipping industry.
- b) Explore the options how the results of the NSW prototype (e.g. documentation and software modules) can be further developed and adapted to be re-used in a NSW solution.
- c) Provide feedback on the system design and technical specifications drawn up by the Member State on its compliance with Directive 2010/65/EU, including the exchange of information through SSN.
- d) Assistance in hosting the NSW prototype in the Member State.

6.11 Promotion and Marketing

Promotion and marketing of a NSW is very important and should involve representatives from all the key government and industry stakeholders in the system. A clear implementation timetable should be established and promoted. Marketing should clearly identify the benefits and cost savings as well as specific points relating to the increased efficiency derived from the implementation of the NSW.

7. Roles and Responsibilities

The stakeholders of the NSW are categorized into groups (as illustrated in Figure 2 in Chapter 5):

- Data providers
- NSW authority
- Relevant authorities.

7.1 Data Providers

Ship data providers have a very important function within the NSW since they are responsible to submit ship notifications and hence they are responsible to ensure that the information transmitted to the NSW is correct. They are also responsible to validate information received from other data providers and to update the information whenever they are aware that the initial submitted information is incorrect or incomplete, either because of errors or because circumstances have changed.

All the reporting formalities deal with information that concern details of the ship: its particulars, voyage, generated waste and the persons and cargo carried on board. The Directive states that “Member States shall ensure that the master or any other person duly authorised by the operator of the ship provides notification”. Therefore, the Directive does recognise that in many cases the reporting obligations may be carried out either by ship owners/operators or by agents authorised by the ship owners/operators.

The above is also in compliance with the FAL Convention which determines that formalities are “either signed by the master, the ship’s agent or some other person duly authorized by the master, or authenticated in a manner acceptable to the public authority concerned”.

Member States should when developing the NSW consider measures on how to facilitate reporting by ship data providers, particularly when using user interfaces. This can be done by allowing them to upload files, re-use data from previous port calls for the same ship or data submitted by other agents, links to database to retrieve reference data, and re-use data available in the SafeSeaNet systems.

7.2 NSW authority

The NSW authority’s role and responsibilities may vary from Member State to another depending on national legal, political and organisational issues. However, in general, it assumes the role of the lead agency.

As regards the operation of the NSW, the NSW authority is responsible to, and without prejudice to the relevant authorities:

- confirm to the data providers the receipt of the data;
- distribute or make available the data to the relevant authorities;
- provide the users (ship data providers and authorities) of the NSW with the appropriate user authentication, as defined in the Business Rules and which Member States have to respect;
- authorise and specify interface requirements for ship data providers who may transmit data to the NSW;
- define the mechanisms to ensure the credentials of the users and the non-repudiation and traceability of actions performed by the users;
- apply the data quality checks that need to be performed on the information received, as highlighted in Chapter 10.

7.3 Relevant authorities

Article 4 of the Directive states that the ship is to provide “the information required under the reporting formalities to the competent authority designated by that Member State”. Therefore, in general terms a competent authority refers to the agencies within a Member State which are responsible for the application and enforcement of laws and regulations of that Member State with respect to one or more of the reporting formalities contained in the Annex to Directive 2010/65/EU.

The relevant authorities described below are those authorities which require access to or directly receive the information that is transmitted via the NSW:

7.3.1 Port Authority

The Port Authority is the public authority or commercial body designated by the Member State to receive and distribute information reported pursuant to reporting formalities identified in Directive 2010/65/EU.

When the port authority is only responsible for the commercial management of the port, vessel traffic management and safety of navigation are often entrusted to a separate maritime authority. In some Member States the latter authority may besides being responsible to provide receive notifications in respect of a specific port, may also be responsible to receive notifications on an area basis, for ships entering the territorial waters of the Member State or for a geographical maritime area which will comprise a number of ports.

7.3.2 Security authority

Article 2.7 of Regulation (EC) 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security defines the ‘competent authority for maritime security’ as the “authority designated by a Member State to coordinate, implement and monitor the application of the security measures laid down in this Regulation in respect of ships and/or one or more port facilities. The competences of this authority may differ depending on the tasks assigned to it”. In terms of the Regulation, one of the functions of this authority is to require each ship intending to enter the port to provide in advance the Ship Pre-Arrival Security Information Form which is included as an Appendix to Directive 2010/65/EU. The Security business rules also highlight that besides the national authority there could also be a relevant authority at local level.

Other actors that will require access to the information provided via the NSW are the Port Facility Security Officer (PFSO) and the Port Security Officer (PSO). A PFSO is appointed in terms of the Regulation which highlights that a PFSO shall be designated for each port facility but the same officer may be so appointed for more than one port facility. In terms of Article 9 of Directive 2005/65/EU of the European Parliament and of the Council of 26 October 2005 on enhancing port security “A port security officer shall be approved by the Member State concerned for each port. Each port shall, where practicable, have a different port security officer, but may, if appropriate, share a security officer”.

7.3.3 Waste authority

Article 12(b) 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 requires Member States to “designate appropriate authorities or bodies for performing functions under this Directive”. This is the authority which is responsible for receiving the Waste Notification mentioned in Article 6 of the latter Directive.

7.3.4 Border control authority

Member States designate “competent authorities” which are responsible for border control tasks defined in 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).

The Schengen Borders Code (SBC) also includes the designation of border guards who are public officials assigned, in accordance with national law, to a border crossing point or along the border or the immediate vicinity of that border who carries out, in accordance with the SBC and national law, border control tasks. Therefore, the border guard can be considered as the border control competent authority at port level and who is responsible to receive the crew and passenger related information in respect of ship calls in a port.

7.3.5 Customs authority

Regulation (EEC) 2913/92 and Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (UCC) defines the customs authority. The customs authorities are "the customs administrations of the Member States responsible for applying the customs legislation and any other authorities empowered under national law to apply certain customs legislation". The Code also establishes that the mission of the Customs authorities is the responsibility for the "supervision of the Union's international trade, thereby contributing to fair and open trade, to the implementation of the external aspects of the internal market, of the common trade policy and of the other common Union policies having a bearing on trade, and to overall supply chain security".

The entry summary declaration is to be submitted to the Customs office of first entry which is the customs office designated by the customs authorities in accordance with the customs rules to which goods brought into the customs territory of the Union must be conveyed and at which they will be subject to appropriate risk-based security and safety controls.

7.3.6 Health authority

The International Health Regulations (2005) require each State Party to designate the authorities responsible for the implementation of health measures established by the Regulations. Such authorities may be established both at national level and at each designated point of entry in the territory of a state. The public health authority therefore refers to the relevant authority, at both local and national level, responsible for the receipt and processing of the Maritime Declaration of Health.

7.3.7 Others

The above mentioned authorities could only be considered as indicative. Depending on national legislation, the NSW authority may provide access to other authorities to the information that is transmitted via the NSW: information from a notification may be made available to more than one authority. Moreover, the identified authorities do not have to be distinct organisations. The same authority may act as a relevant authority for a number of the reporting formalities.

8. Data elements to be provided to the NSW

In defining data, care should be taken to ensure the integration of international standard data into existing legacy systems. This chapter identifies the data set of information to be provided by the shipping industry to the NSW when fulfilling the reporting formalities covered by Parts A and B of the Annex of Directive 2010/65/EU.

8.1 Identification of data elements

The list and mapping of data elements are provided in Annex 1 and 2, respectively, of the data mapping report.

For the identification of the data element, the EU legal acts were taken as a reference for the formalities of part A of the Annex of Directive 2010/65/EU, and the FAL Convention and the International Health Regulations for the formalities of part B. Relevant existing names and definitions from SSN were used when already available. For elements not already covered by SSN, the ISO 28005-2 standard and the WCO data model were used as a reference. When that was not possible, a specific definition was elaborated. For the purpose of presenting the data elements, data groups have been used. This represents a simple grouping of data elements which are in the same domain of content.

It should be noted that the Entry Summary Declaration (ENS) which is contained in Part A is not included in the data mapping report. To which system the ENS data is transmitted will depend on the NSW solution developed by the Member States, which may vary from having a solution which is integrated to one where different electronic systems – NSW and ICS – are interoperable. This should be achieved by implementing a solution defined by each Member State at national level, respecting EU legal requirements and technical specifications, and without imposing new IT related costs and/or administrative burdens for Trade. FAL form 2 – Cargo Declaration – is generally not used because it does not contain all cargo-related information required by authorities. Instead, several Member States use a cargo manifest, covering more data elements than FAL 2. Options which are being considered by Member States for dealing with cargo formalities, and which take the above into consideration, are contained in Annex 2.

Although the harmonisation of Part C “any relevant national legislation” is desirable, it cannot be done at this stage (deadline for implementation 2015). Nevertheless some data elements, which may be considered by Member States under part C, are provided for information in Annex 5 of the data mapping report. Data elements from notifications required in terms of Directive 2009/16/EC (Port State Control) have also been included as Part C requirements. These data elements are to be included in the NSW implementation on an optional basis if they are required as a reporting formality by the Member State.

8.2 Inclusion in the NSWs elements

Annex 2 of the data mapping report provides:

- a) Identification of data elements which are required by EU legal acts (part A) and supported by all NSW. Other data elements (parts B and C) are to be implemented in the NSW in accordance with the national legislation of each Member State.
- b) If supported by the NSW, their implementation should follow the harmonisation defined in this Annex (name, business and technical definition).
- c) Identification of elements which will be made available to other Member State through SSN.
- d) Recommendation on labels to be used when information is reported in a user interface.

Business rules applicable to individual data elements are provided in Annex 3 of the data mapping report.

8.3 Technical definition of data elements

The technical definitions of data elements are provided in Annex 3 of the data mapping report and have been defined based on ISO 28005, WCO, as well as SSN standards.

9. Business Process

The objective of the NSW is not only to collect data electronically. Data is collected to support the decision making process for allowing a ship to enter or leave a port of a Member State as well as to provide the authorities with information which may be required to support other clearance processes: related to persons and cargo carried on board ships.

This chapter describes the business processes of the NSW which supports the receipt of pre-arrival/departure notifications from data providers and the exchange of information with authorities and SSN.

9.1 Notification

The notification communicated by the data provider to the NSW contains information required to fulfil the reporting formalities and to request ship clearance to enter or leave a port. The NSW should allow a notification to be updated for the purpose of changing or adding information related to the port call.

In the case where the information is provided to the NSW by the data provider through a user-interface of the NSW, the forms may be pre-filled with information that the NSW may get from previous port calls (in the same port or in other ports) or other data sources (e.g. reference data repository). The data provider may then submit the information as-is or update it.

9.2 Ship clearance

The NSW should support the ship clearance applied at the arrival of the ship in port and at the departure of the ship from the port. The ship clearance can be a simple process where all information from all reporting formalities is sent from the data providers to the NSW in one step and one clearance acknowledgement is returned from the NSW when the ship has been cleared by the relevant authorities. This is illustrated in the figure below:

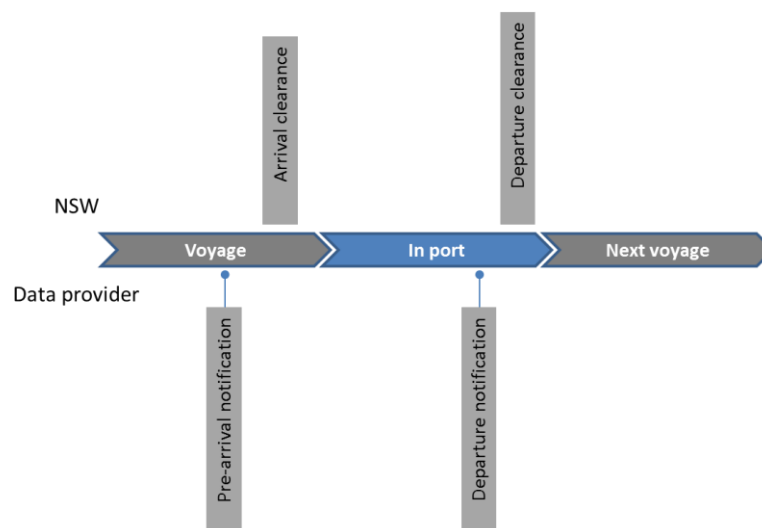


Figure 3: Example of a simple clearance process

The data provider may provide all necessary information at once in one unique notification or over a period of time in several notifications. Notifications may be sent by one or several data providers, each providing its part of information. In this latter case, each data provider would provide the information he/she is entitled (e.g. information on dangerous goods, security information, waste notification...). In this case, clearance should be provided by the NSW once all necessary information is provided as shown in Figure 4:

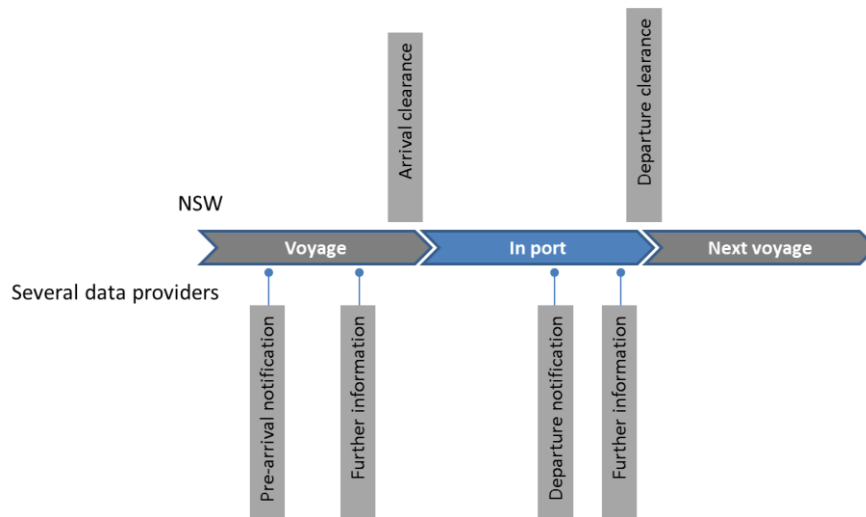


Figure 4: Example of a more complex clearance process

The NSW should serve as a two-way communication channel between authorities and data providers, where requests for more information and clearance decisions made by authorities can be communicated to the data providers through the NSW.

The ship clearance model adopted by the Member State and the authorities that will be involved in clearance decisions will depend on its legislation and administrative set-up. Three basic ship clearance models are the following:

- No clearance: No acknowledgement messages are sent by the NSW. Communication of the authorities' decisions is done outside of the NSW.
- Silent clearance: Acknowledgement messages are only communicated when the notification is rejected. The notification is considered by default as accepted once received by the NSW (with a positive receipt).
- Systematic clearance: Acknowledgment messages are always communicated to the ship data provider regardless of the decision taken by the authorities.

9.3 General information sequence

The general sequence of information between the data providers and the NSW is presented in Figure 5:

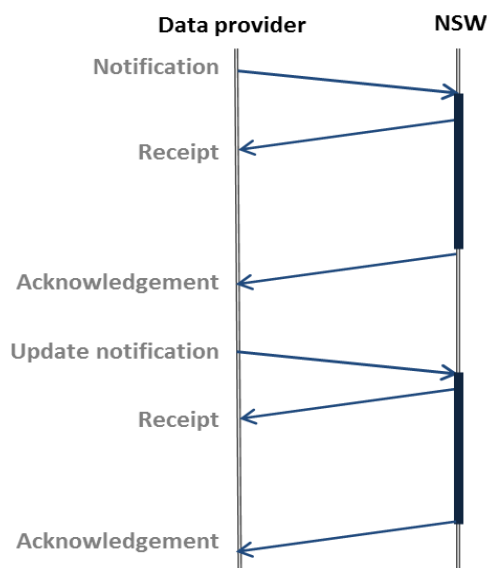


Figure 5: General information sequence

9.4 Receipt

Each time a data provider sends a notification to the NSW, the data provider receives a receipt message from the NSW. The receipt message will signify one of two cases:

- Positive receipt:** the information received from the data provider is free of syntax errors and sufficiently complete to be forwarded to some or all relevant authorities. As soon as the positive receipt is communicated to the data provider, the NSW forwards to the authorities the parts of the information which are relevant to each authority.
- Negative receipt:** the information from the data provider contained syntax errors, was incomplete as regards its structure or format, or contained information that cannot be processed by the NSW. The information will not be forwarded to the authorities and will not cause any further processing. The information needs to be corrected and resent.

9.5 Cancellation

Data provider can cancel previously submitted notifications regarding a port call. A cancellation that received a positive receipt will cease any further processing of the notification and all previously received acknowledgements, if any, will be considered as void. Any cancelled information should be forwarded to the relevant authorities.

9.6 Acknowledgement

An acknowledgement is communicated to the data providers when the notification is processed and a decision is made by one or more authorities involved, which can be:

- Approval:** the ship gets the clearance approval for arrival/departure. This may include information regarding other decisions from authorities (inspection of the ship, etc...).
- Denial:** the ship is not cleared to enter or leave a port. After a denial, a new ship clearance procedure is needed (restart of the whole process).
- Information needed:** this is when an authority did not get enough information in order to take its clearance decision. In this case, a new notification, with the missing information, is expected from the data providers.

The acknowledgment specifies which, if any, relevant authorities do not have enough information to process their approval or denial decision and, optionally, which information is missing or incorrect. The information sequence including the acknowledgement process is shown in Figure 6 below:

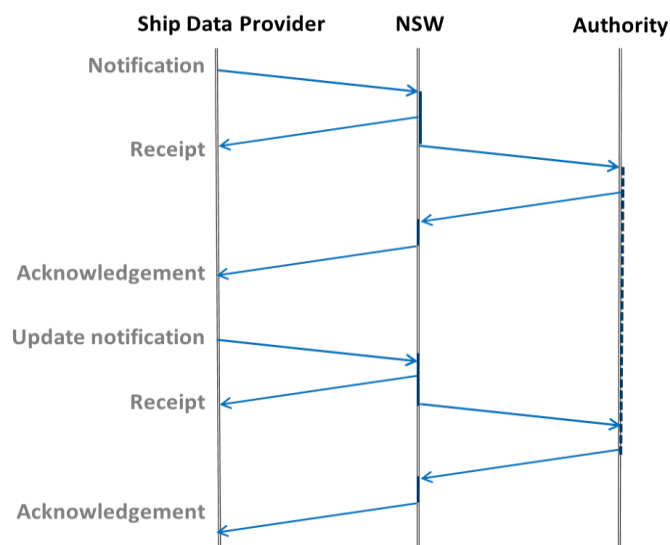


Figure 6: Information sequence including the acknowledgement process

10. NSW features

10.1 General principles

1. Interfaces to Ship Data Providers

Ship Data Providers may submit notifications (initial, updates, cancelations) and receive receipt and acknowledgment messages through a system-to-system interface or through a user interface. In addition, the NSW may provide notifications regarding receipt and acknowledgment messages by e-mail, for example, in order to facilitate communication with ships.

2. Port call identifier

The whole information flow (notifications, receipts, acknowledgments) related to a single ship port call must be associated to an identifier of the port call. The identifier must be unique for each ship call in the ports of the Member State and guaranteed by the NSW. In a user interface the unique identifier is generated by the NSW and requires no input by the reporting party. In a system-to-system interface the unique identifier is issued by the NSW in the receipt message sent at reception of the first notification and additional notifications for that port call must quote the same unique identifier. This unique identifier may be referred to differently in the different NSWs (e.g. 'VISITID' and 'Journal Number') depending on the messaging system used in the implementation of the NSW.

The "voyage number", found in the FAL forms, may also be considered to identify a ship call. The voyage number is provided by the Ship Data Provider in the original notification and in all update notifications. As the voyage number is defined by the Ship Data Provider, there is no guarantee that it is unique for each call in the ports of the Member State and therefore may not be appropriate as a unique ship call identifier. The Ship Data Provider will have to ensure that the voyage number in an update notification matches the voyage number of the original notification.

3. Content of notifications

The NSW will make the distinction between notifications sent before arrival ("arrival notifications") and notifications sent before departure ("departure notifications"). Arrival notifications and Departure notifications regarding the same ship port call can have distinct identifiers. The expected content of a notification (data elements) will depend on its type (arrival or departure). Some data elements are meant for arrival notifications, some for departure notifications, and some to both. Indication is provided in Annex 2 of the data mapping report.

4. NSW Data Quality

The data provider is responsible for the quality of the data transmitted to the NSW. The establishment of common data quality validation rules are important because the NSW is the entry point for all the information which is processed at national level and exchanged with other Member States via SSN. The authorities are required to take, as far as possible, appropriate measures to ensure data quality. The establishment of data quality checks will have to take into consideration the legal requirements related to a notification and agreed common validation rules between the stakeholders involved in the NSW.

To facilitate the work of data providers and authorities, validation should take place within the NSW before information is submitted and distributed to the authorities. The results of data quality checks carried out in the NSW should be brought to the attention of data providers through easy to read warnings highlighting the type of error and which data needs to be corrected. The main validation methods include built-in validation rules and electronic checking using reference databases and international coding standards. Manual checking may also be implemented.

It is important to bear in mind that the relevant parts of information transmitted through the NSW should also be made available in the national SSN where the quality data standards are already

established (note next section). Therefore, the NSW should also adopt these data quality standards in order to enhance data quality and to minimise the administrative burden on the national competent authority for the national SSN.

5. National SSN Data Quality

Member States have to comply with the requirements of the SafeSeaNet Interface and Functionality Control Document (IFCD) where the data quality requirements are set. In terms of these provisions Member States should ensure that the agreed automatic data quality rules for SSN are applied prior to notifications being sent to the central SSN system. The XML Reference Guide includes specific data quality procedures and states that:

- Member States, to prevent mistaken data to enter SSN, should, before sending data to the central SSN system, perform a complete set of checks in their national SSN system based on specific predefined rules ensuring data cohesion.
- During the checking process, the national SSN application will verify that the message corresponds to the agreed format. If no conflict is detected the message will be sent to the central SSN system, otherwise it will be rejected by giving a relevant warning to the message originator about the nature of the mistake.
- Additional checks at EU level by the Maritime Support Service at EMSA will ensure harmonized implementation.

The SSN XML Reference Guide recognises that the actors involved in the data quality include industry stakeholders and ship data providers. The use of electronic systems could help in avoiding manual inputting errors and in facilitating the validation of data. However, information has to be validated by the data providers to ensure that the information conforms to the actual state and characteristics of the information on board the ship.

The validation that is carried out by the central SSN system takes place when a PortPlus message is received. The central SSN system controls if the message complies with the structure, format and business rules. If one control fails, the whole message is rejected. Acceptance and rejection are indicated in the receipt message, as well as details of rejected elements.

6. Use of Reference Data

Some of the data elements which have to be reported in the NSW may be obtained either from databases embedded in the NSW itself or from databases to which the NSW may be linked to, or from where data can be downloaded, for example, commercial databases or SSN databases on ships' details and country LOCODEs. These databases may also be used to automatically fill in data elements required in notifications.

It is important to note that in some cases the information provided in these databases may not be up-to-date. Therefore, it is the obligation of the ship data providers to verify the information with the actual information on the ship's documents. Any mismatches that results from cross-checking the information should be verified and if necessary the reference data is corrected. Whenever this is not possible the ship data providers should report what is stated in the ship documents.

7. Ship Data Providers configuration

Ship Data Providers are registered in the NSW under the responsibility of the NSW Authority. This may be done through an automatic registration process provided by the NSW, or remain out of the scope of the NSW.

Notifications for the same port call (e.g. same unique identifier) may originate from different Ship Data Providers. Therefore, Ship Data Providers may have access to relevant information, previously provided by other Ship Data Providers, if this data is persisted in the NSW, to ensure that data elements are required only once. This may be allowed after implementing appropriate access rights in order to ensure that information is only provided to authorised ship data providers taking into account the need to protect commercial and personal data. All Ship Data Providers having

contributed to the same port call will be communicated with the receipt and acknowledgment messages.

8. Access rights

Each Ship Data Provider may be given the right by the NSW authority to provide information regarding specific groups of data elements or to all groups. Ship data providers should be uniquely and personally identified with a user account.

9. Authorities' configuration

Each authority receives from the NSW the data elements it needs to fulfil its legal obligations. Authorities, depending on national legislation, may be involved in the decision to accept or reject a notification. Such authorities submit their decisions regarding the notification in the NSW. Other authorities may only receive the information from the notification but not submit decisions in the NSW. Authorities may record a textual comment as regards each decision they record.

10. Communication of decisions to Ship Data Providers

Depending on the clearance model chosen, the NSW can be configured as per one of the following options:

- Systematic clearance: Provide an acknowledgment message each time an authority accepts or rejects a notification (a decision is always provided after reception of a notification by the NSW), or
- Silent clearance: Only provide an acknowledgment message when the notification is rejected by an authority (the notification is considered by default as accepted once received by the NSW), or
- No clearance: Never provide acknowledgment messages (communication of authorities' decisions is done outside of the NSW).

Decisions regarding a notification may be recorded by one or more authorities. Therefore several acknowledgment messages may be provided for a unique notification. When information from an update notification is received, previous decisions issued by the authorities, which were based on the original information, have to be reconsidered and are therefore cancelled.

10.2 User interface

11. Content of the user interface

The NSW includes a user interface which allows the Ship Data Providers to submit notifications (initial, updates, cancelations) and consult receipt and acknowledgment messages. To reduce the administrative burden for the shipping industry it is important that the user interface is harmonised for all ports in a Member State. When the notification is submitted through the user interface, only the fields relevant for the notification type (arrival notification or departure notification) are included in the user interface forms.

12. User interface layout

The user interface will have the form of a lightweight user application, where all functionalities are grouped visually and logically into thematic units. The main concept is to provide visual grouping of data elements, with minimal effort required in terms of user actions.

As a result, each of these groups of data elements (e.g. Ship, Port, Dangerous and Polluting goods, Waste, Security, etc.) are organised in separated blocks of information (tabs), as far as possible, in a similar way as they are found in the different paper forms. Each tab will have its own contents and be selected via an appropriate menu, to be displayed at the top of the section of each page. Only one tab can be selected by the user at any one time. Where appropriate, each tab's contents are further divided into sections, according to a particular logical and functional grouping.

Recommended content and layout of the tabs is provided in the NSW User Interface Layout document.

13. Re-use of data from other notifications

The NSW should allow the ship data provider to re-use notifications previously submitted in the NSW for other calls of the same ship in order to prepare pre-arrival notifications. The Ship Data Provider may then submit the information as-is or update it.

In order to prepare a departure notification, the NSW should allow the ship data provider to re-use information from the arrival notification submitted for the same port call. The ship data provider may then submit the information as-is or update it

14. Re-use of data from other Member States through SafeSeaNet

The exchange of information between Member States through SafeSeaNet should allow authorities in the different Member States to view information even before it is submitted by the ship data providers. It also allows Member States to simplify reporting formalities if the NSW allows the ship data provider to re-use data from port calls in other Member States for preparing pre-arrival notifications. For that purpose, the NSW requests information from SafeSeaNet to populate the notification. The ship data provider may then confirm the information as-is or update it. Information provided by SafeSeaNet include: ship identification, ship particulars, voyage, pre-arrival, arrival and departure information, dangerous and polluting goods details, waste disposal information and security information.

10.3 System interface

15. Type of system interfaces

The main principle is that there shall be just one communication channel between the national SSN system and the central SSN system for the exchange of information identified by Directive 2010/65/EU. It is up to the Member States to decide whether the NSW and the national SSN component are integrated into one system or they are separate but interoperable. This would mean that the NSW can communicate directly with the central SSN if the NSW and the national SSN are combined in one system, otherwise the NSW shall not communicate with the central SSN bypassing the national SSN system.

System interfaces are also required when the NSW needs to communicate with authorities systems, for example, in the case of Customs systems or Port Community Systems.

16. Content of the system interface

The NSW includes a system interface which allows the Ship Data Providers to submit notifications (initial, updates, cancelations) and receive receipt and acknowledgment messages. When the NSW receives a notification through the system interface, only data elements relevant for the notification type (arrival or departure) should be considered. If the submitted message includes other data elements not required by the Member State where the ship calls, the additional data elements are ignored. The NSW should not reject a notification because it contains data elements not required by that Member State.

The content of the system interface with the national SSN system has been defined in the SSN V.3 PortPlus messages and relate to notifications in respect of port call, dangerous and polluting goods, waste and security information.

17. Messages

Several international standards may be considered for implementing the system interface (UN/EDIFACT, WCO data model, and the ISO standard on electronic port clearance - ISO 28005). In order to ensure that the same information can be reported to the NSW regardless of the

standard used, it is necessary to guarantee the interoperability between the messaging systems implemented by the NSWs.

For the messaging systems based on ISO 28005 and WCO data model, a mapping is presented in Annex 4 of the data mapping report. In addition, a mapping with EDIFACT messages can be made using the IMO FAL Compendium.

As regards to the exchange of information through SSN it is important to note that the digital format of the messages to be used within national SafeSeaNet systems shall be established in accordance with Article 22a of Directive 2002/59/EC, as amended. Member States shall comply with the harmonised XML messages and the technical standards developed for exchanging information through SSN and which are included in the XML Reference Guide prepared for SSN V3.

11. General requirements

11.1 Data storage

The same data storage requirements as those already applicable in SafeSeaNet should be applied in the NSW for Security, Waste, Health and General Maritime information. The minimum periods for data storage (from the ship's time of departure) are:

- Online (data directly available in the NSW): 2 months minimum;
- Offline (data provided on request to the NSW Authority, down-sampled when necessary): 5 years minimum.

The minimum periods for data storage for Border information, which will not be exchanged through SSN and will therefore only be maintained at national level, shall be determined by the Member State in terms of their national legislation.

11.2 Availability

The NSW system shall, as a minimum, maintain the same availability requirements as SafeSeaNet - minimum of 99% over a period of one year, with the maximum permissible period of interruption being 12h. Member States may provide for a higher availability standard for their NSW.

11.3 Security

For the electronic transmission of the reporting formalities, carried out by the master or any other duly authorised person, there is no need for a signature. Member States shall develop mechanisms to ensure the non-repudiation and traceability of actions performed by all persons accessing the NSW by means of both automated systems (system interface) or the user interface.

Member States are responsible to implement a reliable authentication mechanism to uniquely identify the persons accessing the NSW. The NSW shall give the possibility to verify the history, location, or application of the information by means of documented recorded identification: user identification, timestamp, action performed. Information provided by another Member State via SSN is considered as provided by a trusted data provider.

11.4 Personal data protection

The protection of personal data at national level (NSW) shall be in line with national legislation for data protection and with Directive 95/46/EC. The protection of personal data at central level shall be in line with Regulation (EC) No 45/2001 on protection of data by the Community Institutions and bodies.

Unauthorised access or disclosure of the information can be protected by setting up the appropriate access rights as determined in the business rules related to access rights. Member States have to verify the compliance of the measures implemented for the protection of personal data in their NSW with the EU and their national legislations.

11.5 Classification of the information

The information included in the reporting formalities is considered as "unclassified" and no special security measures should be taken. Nevertheless, this information shall be considered as sensitive and shall be protected from unauthorised access or disclosure. Some parts include personal data and information that can be considered commercially sensitive, which shall be protected in compliance with the rules on personal data and by setting up appropriate access rights.

Annexes

Annex 1: Ships to which the Directive applies

Reporting Formality		SCOPE	Possible Exemptions by Member States	BUSINESS RULES
A.1	PORT NOTIFICATION (Art. 4 Dir.2002/59/EC)	Art. 2: All ships of 300 gross tonnage and upwards, except: a) warships, naval auxiliaries and other ships owned or operated by a Member State and used for non-commercial public service; b) fishing vessels, traditional ships and recreational craft with a length of less than 45 metres; c) bunkers on ships below 1,000 gross tonnage and ships' stores and equipment for use on board all ships.	Art.15: Scheduled services performed between ports located on the territory of a Member State or between ports located on the territory of two or more Member States.	General Maritime Business Rule 1: The general maritime information resulting from legal acts of the Union (Part A1) is mandatory to be provided to the NSW and made available to the national SafeSeaNet and to other Member State through central SafeSeaNet system.
A.2	BORDER CHECKS ON PERSONS (Art. 7 Reg.562/2006)	Annex V1: All ships irrespective of size except regular 'internal' ferry connections between the same two or more ports situated in the territory of the Member States, not calling at any ports outside the territory of the Member States and consisting of the transport of passengers and vehicles according to a published time-table.		Border Checks on Persons Business Rule 1: All the information which is required on a pre-arrival and pre-departure basis shall be transmitted electronically to the NSW.
A.3	HAZMAT NOTIFICATION (Art. 13 Dir.2002/59/EC)	Art.13: All ships, irrespective of their size carrying dangerous or polluting goods and 1. leaving a port of a Member State, or; 2. coming from a port located outside the Community and bound for a port of a Member State or an anchorage located in a Member State's territorial waters.	Art.15: Scheduled services performed between ports located on the territory of a Member State or between ports located on the territory of two or more Member States.	General Maritime Business Rule 1: The general maritime information resulting from legal acts of the Union (Part A3) is mandatory to be provided to the NSW and made available to the national SSN and to other MS through central SSN system.
A.4	WASTE NOTIFICATION (Art. 6 Dir.2000/59/EC)	Art. 3: All ships, including fishing vessels and recreational craft, irrespective of their flag, calling at, or operating within, a port of a Member State, with the exception of any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on	Art. 9: Ships engaged in scheduled traffic.	Waste Business Rule 1: The waste notification has to be provided by all ships under the scope of Article 6 of Directive 2000/59/EC: all ships with the exception of any warship, naval auxiliary or other ship owned/operated by a State, fishing vessel or recreational craft authorised to carry no more than 12 passengers.

		government non-commercial service. Art 6: Fishing vessels and recreational craft authorised to carry no more than 12 passengers are not required to send the notification.		
A.5	SECURITY NOTIFICATION (Art. 6 Reg. 725/2004)	Art3: a. All ships engaged in international voyages (passenger ship regardless of tonnage and cargo ships ≥ 500 GT and mobile offshore drilling units); b. Class A passenger ships engaged in domestic voyages; c. Other categories of ships engaged in domestic services.	Art. 7: Ships performing scheduled services between port facilities located on the territory of a Member State and between ports of two or more Member States.	Security Business Rule 1: The security notifications of the ships falling under type (a) above shall be provided for all calls in EU ports and exchanged through SSN. There is no need to submit the security notifications for ships engaged in domestic voyages (b, c) shall not be provided through the NSW, unless otherwise provided. The security messages will be exchanged between the MSs on request.
A.6	ENTRY SUMMARY DECLARATION (Art. 36a Reg. 2913/92 & Art. 87 Reg. 450/08)	Art 36a: Goods brought into the customs territory of the Community shall be covered by a summary declaration, with the exception of goods carried on means of transport only passing through the territorial waters or the airspace of the customs territory without a stop within this territory.	Art. 36a(4): The committee procedure shall be used to establish - the conditions under which the requirement for a summary declaration may be waived or adapted. Art 181c of Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Community Customs Code (CCIP) - provides a list of goods for which no entry summary declaration is required.	Customs Business Rule 2: How the ENS data is transmitted to or made available in the NSW will depend on the NSW solution developed by the MSs, which may vary from having an integrated solution to one where different electronic systems – NSW and eCustoms – are interoperable. Therefore, the inclusion of the ENS data in the NSW should be achieved by implementing a solution defined by each MS at national level, respecting EU legal requirements and technical specifications, and without imposing new IT related costs and/or administrative burdens for Trade.
B.1 -7	FAL FORMS (FAL Convention)	Article I and II: All ships engaged in international voyages except warships or pleasure yachts.	Standard 1.1: Public authorities shall in all cases require only essential information to be furnished. (Member States to establish which ships are to provide the information in the FAL Forms in terms of their national legislation). Art 9. Dir. 2010/65/EU: Ships falling within the scope of Directive 2002/59/EC and operating between ports situated in the customs territory of the	a. General Maritime Business Rule 2: The information of FAL forms 1 and 7 not required by a legal act of the Union should be accepted by the NSW (in accordance with the legislation applicable in the MS). b. Customs Business Rule 1: All the information which is required on a pre-arrival and pre-departure basis shall be transmitted electronically once to the NSW. This information comprises the following: • Electronic cargo manifest

			<p>Union, but which do not come from, call at or are headed towards a port situated outside that territory or a free zone subject to type I controls under customs legislation, are exempt from the obligation to send the information referred to in the FAL forms, without prejudice to the applicable legal acts of the Union and the possibility that Member States may request information in the FAL forms referred to in points 1 to 6 of Part B of the Annex to this Directive which is necessary to protect internal order and security and to enforce customs, fiscal, immigration, environmental or sanitary laws.</p>	<p>(as an alternative to FAL 2 which is not used by the MS because it does not contain all the required cargo related information). The Commission and the MS will develop a harmonised cargo manifest which will be transmitted electronically through the NSW. Until such time that an agreement on a harmonised cargo manifest is achieved the cargo manifest shall be transmitted electronically through the NSW;</p> <ul style="list-style-type: none"> • FAL form 3 Ship's stores (unless only kept on-board in case of an inspection); • FAL form 4 Crew's effects (unless only kept on-board in case of an inspection). • Information required only for on board inspection shall not be transmitted through the NSW but shall be made available to the MS authorities upon request during inspection. <p>c. Border Business Rule 1: The data contained in FAL 5 and FAL 6 has to be transmitted through the NSW.</p>
B.8	MARITIME DECLARATION OF HEALTH (International Health Regulations)	Art. 37 (1 and 2): All Ships engaged in international voyages	<p>Art 37(4): A State Party may decide:</p> <ol style="list-style-type: none"> to dispense with the submission of the Maritime Declaration of Health by all arriving ships; or to require the submission of the Maritime Declaration of Health under a recommendation concerning ships arriving from affected areas or to require it from ships which might otherwise carry infection or contamination. 	<p>Health Business Rule 1: The MDH may be required by a MS, according to its national legislation, for ships on international voyages before the arrival at its first port of call in its territory, in particular for ships arriving from an affected area identified by the World Health Organisation or which might carry infection or contamination.</p> <p>Health Business Rule 2: The MDH information required by the national legislation of each MS must be provided electronically to the NSW (excluding inland navigation).</p>

Annex 2: Options for dealing with cargo formalities in the NSW

One of the difficulties in implementing Directive 2010/65/EU is how to integrate the Entry Summary Declaration (ENS), which is mentioned as one of the formalities in Part A of the Directive. The submission of this formality is regulated by Article 36a of Regulation (EEC) 2913/92 and Article 127 of the UCC. The Directive also includes in Part B, FAL 2 Cargo Declaration. Both of these cargo related formalities have common data elements.

The customs authorities had developed the Import Control System (ICS), to receive the ENS data lodged by the industry and for the exchange of messages, containing the results of risk-assessments, between national customs administrations. All the messages related to the receipt of the ENS in the ICS are harmonised. Therefore, any type of solution has to take into account the already established customs procedures and systems.

In accordance with the Directive the reporting formalities are transmitted electronically to a NSW and the data elements are reporting only once. To reach the latter objective the Directive considers that it is necessary to link EU electronic systems to share information.

The principle of reusing the data elements is not applicable in all cases because the ENS is only submitted to the Customs Office of First port of Entry in the EU when arriving from a third country port. On the other hand, FAL 2 is normally required for all calls by cargo ships in a port. Therefore, the ENS information can only be used to compose the FAL 2 data elements in ports visited by ships arriving from third countries and to compose FAL 2 data elements for cargo which will remain onboard for next ports of call.

The different time periods required for lodging the ENS and FAL 2 poses additional constraints to reuse the information. For example the ENS for container vessels is sent 24 hours before the loading of the cargo while the FAL 2 is sent 24 hours before the arrival. Therefore, there needs to be a way on how to link the two notifications.

Two options for dealing with cargo formalities in the NSW are the following:

- a) The Customs Import Control System (ICS) continues to be used for the receipt of the ENS and the relevant data is made available to the NSW. Ship agents may then use the Movement Reference Number (MRN) in respect of cargoes onboard a particular ship in order to recall the available cargo information from the ICS system and supplement it with additional data to compile FAL 2 plus cargo manifest in the NSW. The latter cargo information, generated in the NSW, will then be transmitted to an electronic customs manifest system (where this is available) and made available to the other relevant authorities.
- b) The other option would be to submit all cargo information through the NSW which will then be transmitted to the ICS and the customs manifest system. This option is still required for those cases where an ENS is not required, as in the case of voyages between EU Member States.

In any case an ENS message shall not be submitted more than once and without imposing new IT costs or administrative burden for trade.

Annex 3: Best Practices

1. IMP Demonstration Project - NSW prototype

1. Background

The demonstration project focused on the objectives stemming from Directive 2010/65/EU to set up at national level single window solutions. The purpose is to develop software and service components that simulate the information flows between the NSW, the shipping industry, public authorities and SSN.

The overall objective of the demonstration project is to test the information flow between:

- a. the shipping industry (ship's agent/master/duly authorised person) and the NSW;
- b. the NSW and the various national systems (maritime safety, customs, border control, health and other that might be identified); and
- c. the central SSN system and the NSW of the Member States.

The demonstration project focuses on the interfaces between these different participants and includes:

- a system-to-system interfaces (for the link between the central SSN and the NSW);
- user interfaces (for the interface of the NSW with the national authorities);
- both system-to-system and user interfaces system for the link between the shipping industry and the NSW.

2. Project limitations

The demonstrator project follows a generic implementation of a NSW system based on the following assertions:

- a. The data exchange mechanism between the ship data provider and the NSW is based on ISO 28005 XML standard. Apart from XML, industry uses the EDIFACT standard for the exchange of messages which have not been implemented due to budget constraints.
- b. A centralised approach is considered where a unique NSW is built at national level, which distributes the information to the relevant national and local authorities. The centralised approach can be followed by certain Member States but does not fit to all Member States' needs.
- c. The prototype does not cover the interfaces with the Port Community Systems and the existing national SSN.

It should be noted that a technical analysis of existing systems at national level was performed for the Member States for which the EMSA Administrative Board gave approval for Technical Assistance. The study analyses the national SSN system and authorities' operational systems of the participating Member States as well as Port Community Systems (if any). Based on this analysis, proposals and recommendations on how they could be interfaced with the prototype were drawn. This consisted of proposals regarding further improvements to the national systems, the Port Community Systems and the prototype.

3. Features

The NSW prototype offers the possibility to fulfil all the reporting formalities from parts A and B of the Annex to Directive 2010/65/EU as well as additional formalities under part C (Pre-arrival, arrival and departure notifications from Directive 2009/16/EC, ship particulars, draughts, waste delivery receipt, bunkers remaining on board, ship defects, liability certificates). The NSW prototype complies with all principles introduced in the NSW Guidelines document including the following:

a. Reporting by Ship Data Providers

Ship Data Providers can fulfil the ship's formalities (notifications) and get feedback from the relevant authorities (acknowledgment messages) either via a user interface or via a system-to-system interface.

The system-to-system interface is derived from the ISO 28005 standard on electronic port clearance. Several Ship Data Providers may contribute to the same notification. When this relates to sensitive data (e.g. cargo data, information on persons), this option is limited to Ship Data Providers from the same Agency.

In order to simplify the reporting process, the Ship Data Providers are offered the possibility to report information in forms and to upload data using Excel files via the user interface and to re-use notifications previously submitted in the NSW or from other Member States. For that latter purpose, the NSW prototype is capable of requesting information from SSN.

b. Communication with authorities

Authorities may be registered in the system depending on the Member States administrative structure and national legislation: each authority may be configured depending on the information needed, the ports covered and the decisions that may be taken.

Depending on their configuration, authorities will be informed of notifications received through an e-mail, will access the relevant part of the notifications and will record their decisions (acceptance, rejection and comments). The latter decisions will be communicated to the Ship Data Providers who contributed to the notification. Authorities may also be given the possibility to report updates of port call data (ETA, ATA, ETD, ATD etc.).

c. Exchange via SafeSeaNet

The NSW prototype complies with the messaging format developed for SSN V.3 in order to communicate the relevant information to central SafeSeaNet (voyage, security, waste, and hazmat data).

In addition, it is capable of automatically synchronising with the reference databases of SSN in order to offer the latest details of ships (ship identifications, ship particulars) and latest updates of worldwide LOCODES.

A more detail description of the features of the NSW prototype, technical documentation and user manuals are available on the EMSA website: <http://emsa.europa.eu/nsw.html>.

4. Architecture and software modules

A modular approach has been applied to the architecture of the NSW prototype. The NSW prototype modules are:

- The Common Reporting Gateway: provides a standardized reporting interface for the Shipping Industry and is capable of requesting information from previous port calls to SSN.
- The Authority Information Exchange module: distributes the information reported to the relevant authorities and records their decisions. It also includes the SSN interface module which communicates the information to SSN.
- The Resource Management Console: handles the administration of the system and features a ship and a location database which are automatically synchronized with ship details and LOCODES databases from SSN.

The architecture of the NSW prototype is illustrated in the Figure below:

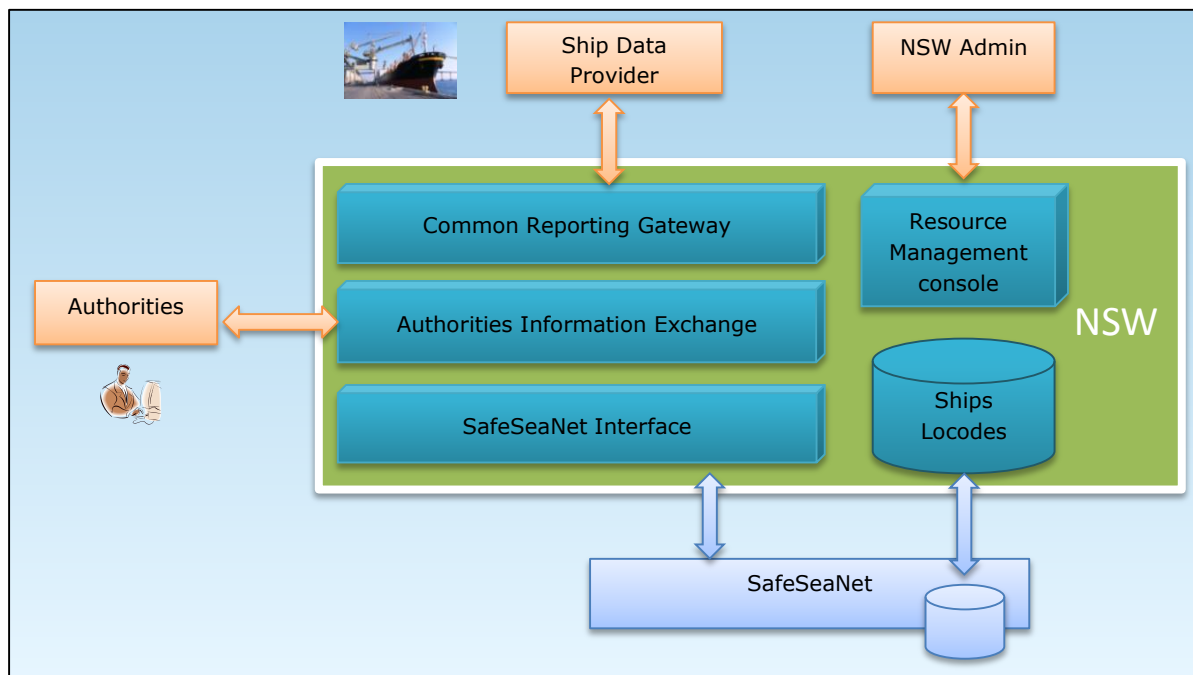


Figure 1: Overview of the NSW prototype's architecture

The NSW prototype system can be installed either over proprietary Oracle software (WebLogic Server 11g, RDBMS Server 11g), or install over open-source software (Apache Tomcat 7.x, PostgreSQL 9.x).

5. Re-use options

Member States have the option to re-use and adapt the NSW prototype modules when building their own NSW solution. The system design documentation and the actual software (including the source code) are available to Member States who seek technical assistance from EMSA after prior approval of the EMSA Administrative Board.

Several types of technical assistance may be considered depending on the need of the Member State.

a. Full NSW solution

The NSW prototype is a full-featured NSW solution and can therefore be re-used as-is. However, the NSW prototype would need to be adapted by the Member States to comply with their local circumstances.

The formalities supported by the system may be configured depending on the national legal basis through the administration user interface (Resource Management Console), by activating or deactivating data groups. For example, in the case where a Member State would not implement IMO FAL Form 4 Crew's Effects Declaration as a formality, the corresponding data-group "Crew Effect" may be deactivated. Nevertheless, in the case where national specific formalities require non-supported data elements, additional developments may need to be envisaged.

Other additional developments may be required to link the NSW system to existing national systems, such as authorities' operational systems (e.g. customs, port authorities, etc.), Port Community Systems or the national SSN system. For such interfaces, using the XML format applied by the NSW prototype is recommended in order to limit the impacts on the NSW system. The fact that the XML format is derived from an ISO standard should ease these developments.

Since the NSW prototype is compliant with SSN V.3, a Member State may consider replacing the PortPlus notification process of their existing national SSN system by the NSW prototype. In other words, a Member State may use the NSW prototype for PortPlus notifications and ShipCall

Requests/Response messages, and continue to use the existing national SSN system for other messages not supported by the NSW prototype (e.g. Ship MRS notification, Incident Reports, etc.).

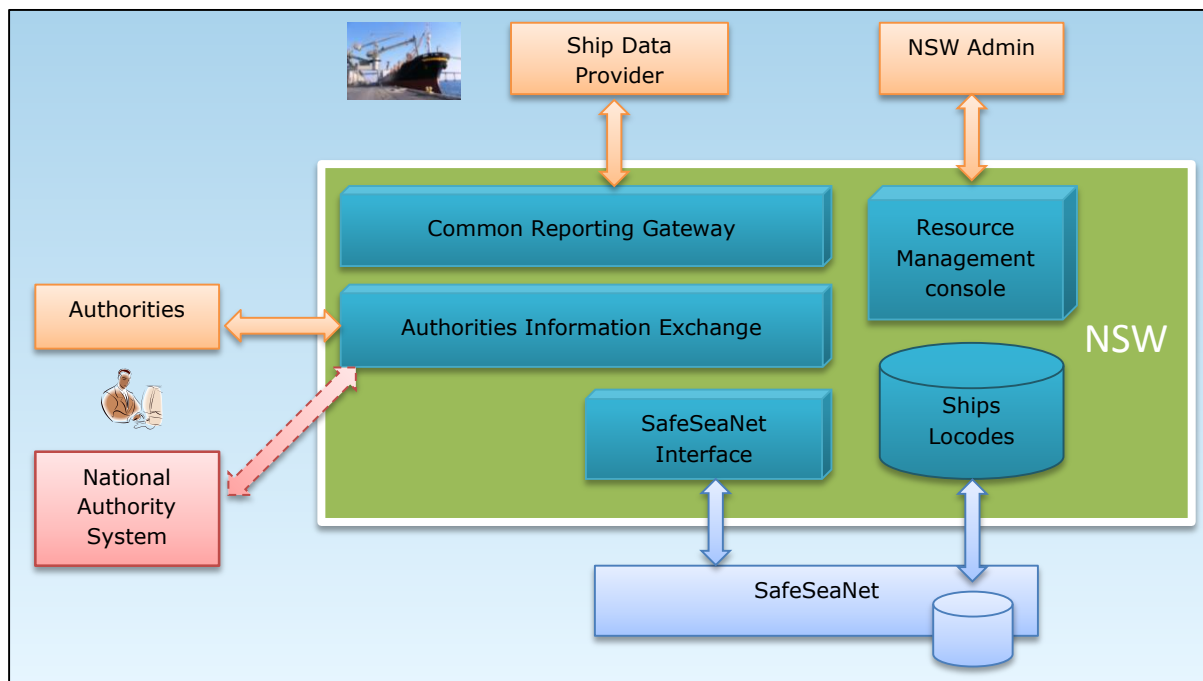


Figure 2: NSW prototype serving as full NSW solution

In the cases where a Member State would choose to continue using the existing national SSN system, a system-to-system interface would need to be implemented between the AIE module of the NSW prototype and the national SSN system, in replacement of the prototype's SafeSeaNet Interface module.

b. Re-using modules from the NSW prototype

Bridge to SafeSeaNet services

The NSW system is capable of sending, to SafeSeaNet PortPlus notifications (SSN v3 compliant) at each update received from Ship Data Providers, and provides detailed information on request from SafeSeaNet through ShipCall response messages. The NSW prototype may therefore facilitate the development of existing NSW solutions by providing a fully operational bridge to SafeSeaNet.

In addition, the NSW system is capable of communicating with the reference databases of SafeSeaNet and in particular with:

- The Central Ship Database, which holds a reference list of ships with their identification details and particulars, and
- The Central Location Database, which holds a reference list of location codes (UN LOCODES).

The NSW system is designed to automatically receive ships and locations codes updates from SafeSeaNet and update its own ship and a location databases. Such databases are used for the purpose of the NSW prototype, but they may as well be used by existing NSW systems or other national systems.

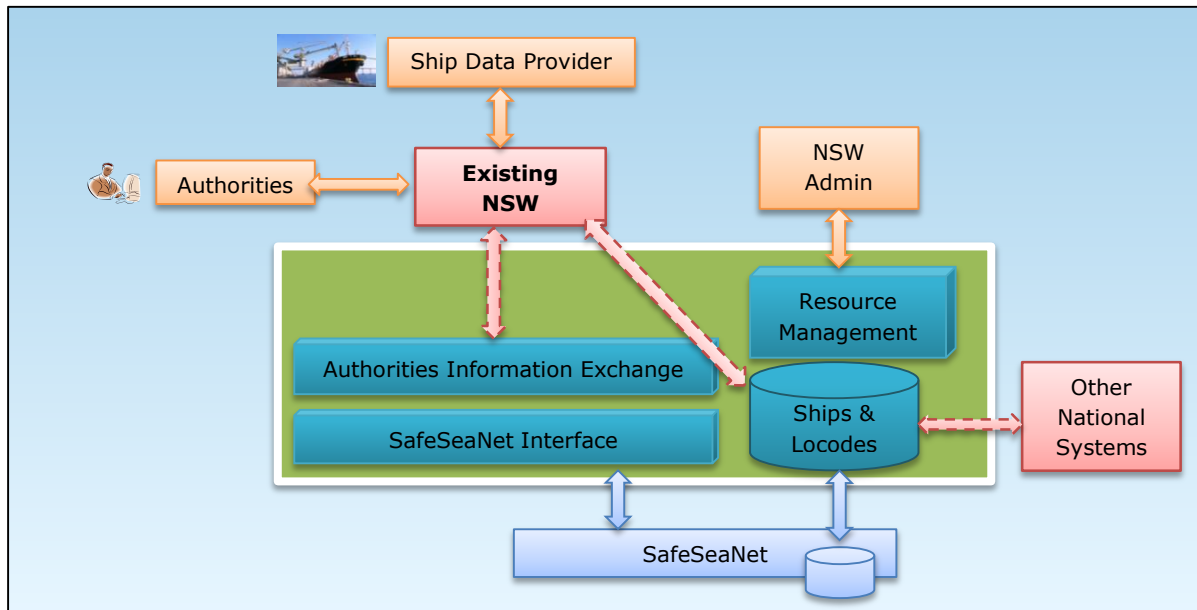


Figure 3: NSW prototype serving as bridge to SafeSeaNet

Reporting Gateway for Shipping Industry

A Member State, that already has in place a national system serving as a communication node with all relevant authorities and SSN, may consider re-using the Common Reporting Gateway module. This module offers a comprehensive interface to ship data providers for the fulfilment of reporting formalities and produces a consolidated notification of all required information. Such consolidated notification is provided in the form of an XML structure (derived from ISO standard 28005) through a web service, which may be implemented in the existing national system.

The Common Reporting Gateway is designed to be used with the Resource Management Console and can be used as a stand-alone independent system (including user management, configuration, ship and location databases which are continuously updated via SafeSeaNet). As explained above, it also features the mechanisms for the ship data providers to request information from previous port calls via SafeSeaNet for the purpose of re-using the data

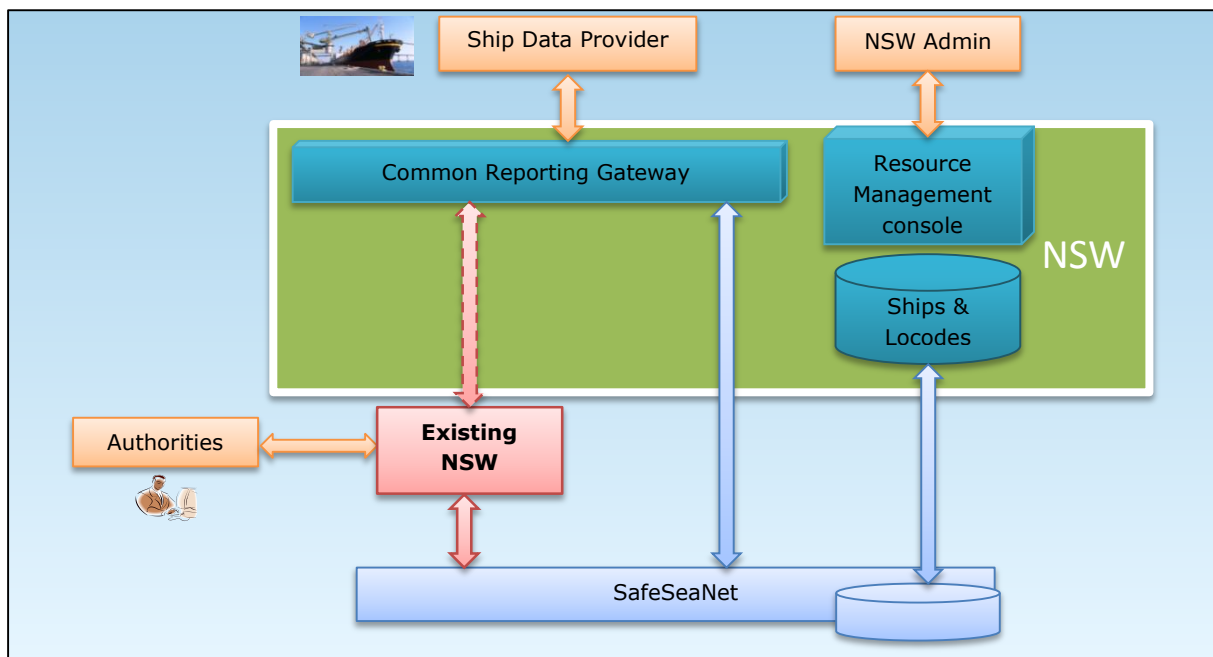


Figure 4: NSW prototype serving as reporting gateway to Shipping Industry