Appendix B to Tender Specifications

Technical Specifications

TABLE OF CONTENTS

List of abbreviations

AIE	Authority Information Exchange
CHD	SafeSeaNet Central Hazmat Database
CRG	Common Reporting Gateway
DG MOVE	Service responsible for the contract of the Directorate-General for Mobility and Transport of the European Commission
EMSA	European Maritime Safety Agency
GI	Graphical Interface
IMP	Integrated Maritime Policy
MS	Member State
NSW	National Single Window
RC	Resource management Console
SSN	SafeSeaNet
VDES	VHF Digital data Exchange System

1   Background

This section provides background information regarding the Enhanced NSW Prototype project.

The development of the NSW prototype originated from an Integrated Maritime Policy project where EMSA was tasked to carry out a demonstration project to show how the minimum requirements of Directive 2010/65/EU can be achieved. The objective of the Directive 2010/65/EU 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. Therefore the prototype showed how information can be received from ship data providers and shared between authorities at national level and in other Member States. It was beneficial in demonstrating to Member States how to establish NSWs and to test the business rules and functionalities adopted by the eMS group, which was set-up by the Commission to co-ordinate the implementation of the Directive.

The further enhancement of the NSW prototype is required will support to the Commission services, to the Member States and to the shipping industry with the objective of achieving additional simplification measures. It will test facilitation and harmonisation measures which were approved by the Commission and the Member States in April 2015. In addition it will contribute to the preparation of the revision of the Directive, in view of further simplifying and harmonising the reporting obligations of the shipping industry when their ships call in European Union ports,

The European Maritime Safety Agency (EMSA) is being tasked to assist the Commission in the execution of this project. The Agency, in accordance with Regulation (EC) No 1406/2002 establishing a European Maritime Safety Agency, as amended, shall use its expertise in electronic data transmission and in maritime information exchange systems to simplify reporting formalities for ships with a view to the elimination of barriers to maritime transport and the establishment of a European Maritime Transport Space without Barriers. In particular, the Agency shall facilitate cooperation between the Member States and the Commission: with regard to the implementation of Directive 2010/65/EU by facilitating the electronic transmission of data through SafeSeaNet and by supporting the development of their NSW.

2   High-level User Requirements

This section describes the overall aim of the Enhanced NSW Prototype project.

2.1   Improve the system and user interfaces

To enhance the user friendliness of the NSW prototype, it is necessary to improve the following functionalities:

a) Use additional message standards developed by different international organisations. The prototype is developed using ISO 28005 Electronic Port Clearance. However, the shipping industry also use other standards as those developed by the World Customs Organization (based on the WCO data model), or UN/CEFACT (EDIFACT messages)

b) Add security protocols (e.g. digital signatures and certificates), such as

- attaching digital signatures to the notifications submitted by the Ship Data Providers and to the decisions from the Authorities which are communicated to the Ship Data Provider, and

- using digital certificates, or an authentication mechanism for the system interfaces to the Ship Data Provider system.

c) Provide for better data quality controls, behaviour of the user interface, appearance (including the application of the new EMSA visual identity), contextual help.

d) Improve the usability of the user interface on tablets, by building a specific layout, style and behaviour,

e) Change the interface between the NSW prototype's Graphical Interface (view on a chart) with the AIS position source to use the ship position streaming interface of the SSN system, in order to allow the hosting of the NSW Graphical Interface module by the MS.

f) In the Resource Management Console, add functionalities to access the system log and consult the users' activity and logs of message exchanges through the system interface and corresponding error messages.

g) The CRG shall allow for the ship data providers to submit messages to authorities.

h) Full audit trails shall be provided for all NSW system and user transactions.

i) The NSW system should allow for authentication to access the system to be based on a certificate issued by the NSW system administrator. This is already the case for the system interface but not for the web interface.

j) Add a search functionality in Regulatory Management function, or browse per data group.

k) Improve the identification of error messages e.g. add indication next to the corresponding field.

2.2 Use of modern technologies for reporting data,

One of the main difficulties encountered by the shipping industry is the difficulty for ships to send large electronic files from ship to shore, in particular, when such files are sent through existing providers of global satellite communication services and where the communication expenses are based on the amount of data delivered.

DG MOVE and EMSA are closely monitoring the developments of new technological concepts that could potentially allow, on a worldwide basis, for the transfer of information from ships to shore- based single window systems. For example, EMSA is exploring the best possible options for using satellite-based technology to relay digital data packages from a ship to the NSW prototype, and vice-versa using the satellite component of the VHF digital data exchange system (VDES).

Depending on how the regulatory discussions on the VDES will evolve at international fora, the NSW prototype may have to include a specific "VDES interface" module to receive information related to reporting formalities directly from ships via the VDE satellite component of the VDES. The module will receive the information, transform it if necessary into arrival port clearance notifications in the format of the NSW Prototype and submit the notification in the Common Reporting Gateway module of the NSW prototype. The "VDES interface" module will be hosted at central level at EMSA, while the NSW prototype may be hosted either by EMSA or by the participating MS.

2.3 Definition of cargo manifests covering the needs of both customs and maritime authorities, and their exchange using SafeSeaNet

The NSW prototype supports all cargo formalities required by Directive 2010/65/EU: entry summary declaration (ENS), FAL form 2, and FAL Form 7, as well as additional data elements based on cargo requirements identified by Members States who participated in the NSW prototype project. The data structure allows that several cargo declarations, including several consignments and cargo items, may be reported per notification. Details on dangerous and polluting goods are reported within this data structure.

The NSW prototype could be further developed to meet the objectives of Blue Belt and to extend its functionalities to demonstrate how cargo reporting formalities can be simplified and facilitated. As part of the Blue Belt initiatives the Commission is in the process of defining the data requirements for developing a cargo manifest that includes the data elements required by the maritime authorities as well as by customs, including the data elements required for the Proof of Union Status (PoUS). This avoids that the carrier submits both the PoUS data (customs goods

manifest) and other cargo data as separate messages to different systems. Discussions on the PoUS and the content of the cargo manifest are still ongoing.

The prototype would have to be upgraded to:

a) Receive all cargo related data – the PoUS data (customs goods manifest) and the other cargo data. These data elements will thereby be integrated in one cargo declaration/manifest,

b) Submit the relevant data to the appropriate IT system of the different maritime and customs authorities, in message formats that still need to be agreed,

c) Allow the NSW prototype to interface with the customs Import Control System (ICS) to obtain the available cargo data which will then be used by the NSW system in order to populate the cargo data items fields in the cargo manifest

d) exchange cargo data between the maritime and customs authorities of the different Member States via SafeSeaNet,

e) use the NSW graphical interface to monitor and track all ships, even those navigating far from the coast or in third country waters, provide enhanced information such as unexpected ship behaviour, ship diversions and to link cargo information to ships arriving or departing EU ports, including the identification of the type of cargo being carried on board (whether it is all EU cargo, all non-EU cargo, or mixed).

2.4   Re-use of data in subsequent port calls through the utilisation of SafeSeaNet

The NSW Prototype in its current version allows the Ship Data Provider to request to the SSN System information from previous port calls in other MS and re-use the information from a selected port call to fill-in a new arrival port clearance notification. Even if this feature operates correctly, it brings an issue with the right of the Ship Data Provider to use the information.

The NSW prototype should include a mechanism to check whether the ship data provider who requests the information belongs to the same company as the ship data provider who submitted the original notification in the NSW system of the other MS. Such identification should be based on a unique identifier of the ship data provider's company which will be shared between the NSW Systems through the SSN System.

The NSW Prototype will therefore need to identify the company of the Ship Data Provider who submits the notification using this unique identification number and share it with the SSN System when sending the notification to SSN. When requesting the information from previous port calls to SSN, the NSW prototype will indicate the unique company number of the Ship Data Provider who requests the information. The SSN system will then deliver the information that the Ship Data Provider is entitled to.

Note: The development of the SSN System which are necessary for such project will be contracted by EMSA separately and are out of scope of this tender.

2.5   Use of SafeSeaNet central reference databases for the purpose of simplifying reporting obligations

As mentioned in Appendix A of the tender specifications, EMSA has developed a number of central databases which provide reference data. The NSW prototype currently uses the services of two of the central database: the Central Location Database in order to receive the latest list of location codes (e.g. UN/LOCODES) and the Central Ship Database in order to receive the latest ships particulars.

The Central Hazmat Database is still being developed by EMSA and it is planned to be in production by mid-2016. This database will offer details of characteristics of dangerous and polluting goods (HAZMAT details). Once this application is completed the NSW prototype will be enhanced to connect to this database to allow the ship data providers and the authorities:

a) to search for the correct HAZMAT details,

b) to verify their information on dangerous and polluting goods, and

c) to use HAZMAT details when reporting a notification in the NSW Prototype to auto-complete the description of dangerous goods on board the ship (Note: this option is developed as a reference scenario in section 6.1 below).

EMSA is also considering the use of other central databases, for example, on codes of port facilities that have to be reported as part of the security-related information.

2.6 Inclusion of common national requirements

Feedback received from Member States participating in the NSW prototype project have identified a number of improvements that if implemented would enhance the operational flexibility of the NSW. These include the following:

a) Adding more data element and reporting formalities;

b) Improving the clearance functionality by, for example, allow a master authority to provide ship clearance or rejection;

c) Allowing for the movement of ships within ports;

d) Including a notice screen which will display important notices from the authorities (e.g. amendments to legislation, changes to operational procedures, scheduled maintenance, etc.).

3   Non-Functional Requirements

The NSW Prototype currently complies with the non-functional requirements introduced below. Any development of the NSW Prototype will comply to the same non-functional requirements.

3.1 Capacity and Data sizing

The following figures indicate the expected dimension of the NSW Prototype user community and information:

- Up to 1000 Ship Data Provider users,
- Up to 200 Authority users,
- Up to 120 simultaneous users accessing the web interface,
- Receive up to 10000 clearance requests (including those reporting the cargo information) per day submitted via system interface or via the web interface, with peaks of up to 18 clearance request per second submitted via system interface,
- Submit up to 3000 ship-call requests to the SSN central system per day.

The NSW Prototype shall complete the execution of actions initiated by a user using the web interface in a maximum of 3 seconds.

3.2 Availability

The availability expectations of a system relate to how many hours in the day, days per week, and weeks per year the application is going to be available to its users and how quickly they should be able to recover from failures.

The following overall availability requirements are defined for the NSW prototype system:

The expected availability is 24 x 7.

The measured availability should be at least:

- 97.5% of the time over any 24-hour period 99.9% per year,
- 99.5% over any 1 month, and
- 99.9% over a year.

Recovery from any type of unplanned system outage should be successfully completed within 1 hour of the outage.

The maximum downtime allowed during a week is two hours.

The operational procedures for the NSW Prototype shall ensure this availability level is achievable with a minimal number of staff.

3.3 Scalability

Scalability can be defined as the ease with which a system or component can be modified to fit the new sizing needs.

The NSW Prototype shall be able to easily "scale up" (adding more resources to an existent component) and "scale out" (adding new components to the infrastructure). The system must be designed so as to ensure that it can be accommodated to comply with an increased load in a longer term perspective..

Computer Software Limitations:

The throughput capability of the real-time data processing pipeline of the system will be configured and tuned for maximum performance. The contractor shall provide precise indication on how to configure and tune the various infrastructure elements (e.g. web-logic server, clusters, loads balancers, etc.).

The contractor must indicate in the test plan the tools methods recommended for conducting load, resilience and stress tests.

3.4 Modularity and Reusability

The architecture of NSW Prototype shall be defined in such a way that modularity will be encouraged and promoted. This concept of modularity is applicable to both software designs and implementations and infrastructure design.

Promoting Modularity will also leverage Reusability.

The reuse philosophy should be applied in several areas:

- Design and develop using reusability is a key requirement.

- Reuse of existing commercial "of the shelf" hardware or software (COTS).

3.5 Security

The NSW Prototype having direct interfaces to the Internet, the Contractor should follow and implement industrial Security best practices. The following recommendations and standards are mandatory and must be taken into consideration:

- SANS Institute recommendations for JAVA/JAVA EE Secure Software Programming (see http://www.sans-ssi.org/blueprint_files/java_blueprint.pdf);

- OWASP Application Security Verification Standards (http://www.owasp.org/index.php/ASVS); The targeted level for the NSW Prototype is OWASP Level 2.

Security patches and updates must be applied periodically within the maintenance to all software delivered within the service contract.

3.6 Technical architecture

The bidders should note that the EMSA System and Application Technical Landscape, which documents the technical solutions used by EMSA at System level and to provide directions on options and preferable technologies to be considered at Application Level, is provided in Enclosure 1.

4 Tasks and deliverables

The contractor will, inter-alia, carry out the following tasks:

a) Analysis of the requirements provided by EMSA,
b) Design, including user interface design,
c) Development/coding,
d) Factory acceptance tests (FAT);
e) Packaging and software delivery;
f) Support to site acceptance tests (SAT);
g) Correction and bug fixing of delivered software releases;
h) Preparation of full system documentation, including, inter-alia, design documentation, installation instructions, system security guidelines, internal interface definitions and test plans.

The list of tasks may be adapted to take into account changes to EU legal acts and the FAL Forms and the needs expressed by the users represented in different fora established by DG MOVE and indicated to the contactor by EMSA.

4.1 Project Management documentation

The project management documentation should reflect the project management methodology proposed by the contractor in its bid. It should include at least the following documents:

- Project charter: details the understanding of the project, the different methodologies to be used and the first project baseline (in line with the first project plan).

- Project plan: must include the following items at least: project charter, project management approach, scope, Work Breakdown Structure (WBS), project team, Gantt chart, deliverables milestones, working locations, meetings planning and reports.

- List of outstanding and closed Action Items.

- Flash report: simple report on the status on the project containing (at least) ongoing tasks, resources usage, progress status, and issues foreseen.

- Agenda of the meetings: the contractor is responsible for providing detailed agenda and additional requests before the meetings for all relevant meetings held between DG MOVE / EMSA and the contractor.

- Minutes of the meetings: the contractor is responsible for providing the minutes of the meetings for all relevant meetings held between DG MOVE / EMSA and the contractor. The minutes of the meetings must include at least the topics discussed, decisions taken and action items with indication of the responsible person and deadline of the actions.

4.2 Design documentation

The design documentation includes:

- Functional design specifications,
- Technical design specifications,

- Draft version of the Software Test Plan.

Design documentation should be prepared by the contractor in close collaboration with EMSA's personnel. If needed the contractor and/or EMSA may suggest modifications in the content of the deliverables. These modifications should be agreed by EMSA.

4.2.1 Functional Design Specifications

Functional design specifications will be used as guidelines for the implementation of the system. They should describe in detail as a minimum of:

- Use cases descriptions and business rules representing the system functionalities,
- Capabilities and processes,
- Interactions with users and with other systems,
- Traceability matrix between the requirements from the technical specifications, the business rules and use cases.

4.2.2 Technical Design Specifications

Technical design specifications will be used as a blueprint for the system implementation. They describe how the system will be implemented in order to cope with functional design specifications. They should include as a minimum:

- Conceptual and physical system architecture,
- Software design and layering,
- Modules and components,
- Process, workflows and algorithms design and documentation,
- Interfaces definitions.

4.2.3 Draft version of the Software Test Plan

The draft version of the Software Test Plan will serve as the basis for preparing the Software Test Plan (refer to section 4.4 below)

4.3 System Documentation

The system documentation should be provided for both the proprietary (Oracle) and open-source versions of the NSW Prototype (refer to Appendix A of the tender specifications).

4.3.1 Operational and Maintenance Documentation

The operational and maintenance documentation must explain how the system should be operated and maintained on a daily base. It should include the following documentation:

- Installation manual,
- Applicable scripts:
  - Database scripts,
  - Configuration and deployment scripts to perform the weblogic server steps of the installation (These should be using WLST and properties files in order to be edited appropriately by EMSA depending on the installation environment. JDBC data source configurations should be delivered in a separate script),
  - scripts for data migration (if needed),
- Operation and Maintenance manual,
- HOW-TO troubleshooting and root-cause analysis.

4.3.2 System building procedures

The system building procedures should allow EMSA to completely build the system from its source code at any moment.

System building procedures shall be executed in the EMSA building environment. The contractor must provide all the necessary information to prepare the building environment. EMSA favours the use of virtual Linux building environments.

At the delivery of the system, the contractor must provide an automatic build procedure with the complete source code, additional software packages and code generators.

For each code generator used during development a correspondent generator should be provided to EMSA.

4.3.3 Infrastructure documentation

The contractor is requested to provide a complete and detailed architecture definition and sizing for the following EMSA environment:

- Test,
- Pre-Production/Quality,
- Production.

The environments will be provided at the EMSA Data Centre.

In order to correctly size the production environment, the contractor must consider the following elements: system architecture, implementation, non-functional requirements and the performance requirements specified in the Tender Specifications.

For the production environment, detailed information about requirements for servers characteristics, network, bandwidth, base software, databases, security and accessibility shall be provided to EMSA. For the others environments, the same level of information must be provided with an indication of expected performance.

4.4 Test Documentation

Test documentation should cover at least 80% of the functionalities of the system. Tests to be performed by the contractor must cover the two following objectives:

- Verification tests: verify that the product is in line with the functional and technical requirements and design specifications and that implementation best practices were applied,
- Validation tests: verify that procedures and activities as described in the project plan, change management procedures and software development plan were applied.

The test documentation and test results should provide evidence that these objectives are met.

The test documentation should detail all necessary documents to plan, design, execute and report tests. This should include as a minimum:

- The Software Test Plan with all details regarding the test process:
    - Definition of the Software Test Plan Structure and global strategy,
    - Reference to the different test phases to be implemented,
    - Definition of the test detailed strategy presenting an overall perspective of testing and identifying individual test phase plans for unit, integration, functional, Non-functional (including Nominal response tests, Peak tests, Load and Stress tests, Performance, Resilience and Availability tests) test phases. Each test phase plan should include at least:
        - Description of the test phase strategy,
        - Test phase standards and practices,

- Test phase supporting guidelines,
- Test phase selection criteria,
- Test phase evaluation metrics,
- Completion criteria for the test phase,
- Test phase implementation templates.
  - o Results achieved with the test phase implementation including at least:
    - Test cases,
    - Test scripts,
    - Data sets,
    - Test results,
    - Test phase report.
  - o Reference to the test environment(s) to be used,
  - o Software Test plan execution planning,
  - o Software Test team responsibilities and staff.

Test results should be added to each test plan once the corresponding tests have been executed.

4.5 System

The system delivered to EMSA should contain:

- The developed system/component,
- Related source codes, build procedures and supporting documentation,
- A complete system documentation.

The system should be delivered in two versions: a version based on proprietary software (Oracle) and a version based on open-source software (refer to appendix A of the tender specifications).

5   Conditions for the provision of services

5.1 Acceptance procedure – Site Acceptance Tests

For each deliverable, in consultation of DG MOVE, EMSA provides a formal indication of the acceptance, conditional acceptance or rejection of the deliverable to the contractor.

5.1.1 Classification of software issues

EMSA will classify issues found on software into 3 different categories according to their impact and severity:

- Blocking issues: structural problems or serious issues (functional or technical) considered as limitations of the implementation with very high probability of interfering with the expected result. The contractor will be obliged to correct/execute all issues considered in the category,

- Critical issues: problems or issues that do not conform to the requirements or specifications or best practices or considered to be the wrong approach to obtain the result, but for each one of them a workaround is available.

- Minor issues: changes considered to be a better solution but without a deep impact in the quality of the system. The correction/execution of the issues of this category will be decided case by case.

Each issue is identified and described by EMSA and communicated to the contractor with the EMSA TeamForge application (the tool used by the Agency for Application Lifecycle Management – EMSA will provide the contractor with one account to access the EMSA TeamForge application). The contractor is requested to track and monitor the treatment of each issue sent by EMSA, applying the change management procedures and using the EMSA

TeamForge application. The acceptance tests and the classification of the issues are made in collaboration between EMSA and the contractor.

The outcome of the acceptance procedure is positive if no issue is found by EMSA. If issues are found by EMSA during the acceptance procedure, the contractor is requested to immediately correct them and the acceptance procedure restarts from the date of the delivery of the corrected deliverable.

EMSA can decide to conditionally accept the deliverable when some issues remain uncorrected and that issues are not blocking issues. In order to accept such remaining issues the contractor shall propose a deadline for the correction and EMSA to accept it. EMSA will take the decision on conditionally acceptance of the product after evaluation of each remaining issue.

No software acceptance shall be made by EMSA without a successful execution of the automatic build procedure.

5.1.2   Acceptance of documentation

In the case of Project Management documents, EMSA will provide comment and/or reservations which will be transmitted to the contractor within **five EMSA working days** of the date of delivery. Based on this comment and/or reservations EMSA will either accept or reject the deliverables. In the case of rejection the contractor will be requested to provide a new appropriate revision within a date agreed by both parties.

In the case of System documentation and User Documentation, EMSA will provide comment and/or reservations which will be transmitted to the contractor within **ten EMSA working days** of the date of delivery. Based on this comment and/or reservations EMSA will either accept or reject the deliverables. In the case of rejection the contractor will be requested to provide a new appropriate revision.

In the case of Design Documentation, EMSA will provide comment and/or reservations which will be transmitted to the contractor within **five EMSA working days** of the date of delivery. Based on this comment and/or reservations EMSA will either accept or reject the deliverables. In the case of rejection the contractor will be requested to provide a new appropriate revision.

5.1.3   Acceptance of the System

The system will be evaluated by EMSA when available and running on the test, quality and production environments.

Before the system is accepted EMSA will verify if:
- All issues detected in the previous acceptance tests have been corrected,
- It conforms with the functional specifications,
- It conforms with the technical specifications,
- Non-functional requirements are met,
- It works correctly in its environments according to all requirements and specifications.

EMSA will provide issues which will be transmitted to the contractor within **15 EMSA working days** of the date of delivery. Based on this issues EMSA will either accept or reject the version. In the case of rejection the contractor will be requested to provide a new appropriate version.

5.2   Quality Gate

Delivered source code shall always be submitted to the Quality Gate defined in Enclosure 2. Results of the Quality Gate shall be evaluated and decision to accept or reject the release will be taken based on the defined conditions.

5.3   Tools for project controlling

Unified Modelling Language (UML) should be used for object and system modelling. The UML modelling tool and any additional tools suggested by the contractor in its offer will be used.

EMSA suggests the use of ArgoUML (open source) or Altova UModel as the UML modelling tool. The contractor is free to use another UML modelling tool as long as he guarantees its compatibility with one of the previous tools.

Project progress controlling method will be proposed by the contractor. EMSA suggest EVM (Earned Value Management).

The contractor will provide a project site accessible by EMSA through internet. The project site should contain, at least:

- Last stable version of all document deliverables,
- Last stable version of the prototype or system,
- Current working documentation,
- Current development snapshot.

The project site must provide version control of all documentation and source code, making possible to retrieve at any time previous versions and the last stable version of source codes and documentation.

5.4   Licensing Policy

EMSA agrees with the possibility of using open source. The Contractor shall be responsible for maintenance within the services provided during warranty and maintenance.

All open source products/components to be used which are not already used for the current NSW Prototype (refer to Appendix A of the Tender Specifications), shall be listed in the bid with the indication of their versions and objectives.

All commercial products, versions and licences to be used in the project must be clearly identified, listed and quoted for all required environments. The proposed products and solutions have to be covered by the available budget for the project, except for middleware described in the EMSA technical landscape which will be supplied by EMSA. Nevertheless, the Contractor must indicate, if it is the case, the needed number of such licences for all required environments.

Maintenance and Support services for products where EMSA owns licences will be contracted by EMSA and fall outside the scope of the present procedure.

In case the Contractor is not providing the source code of the system to EMSA, he shall guarantee that the source code and the full documentation of the code will be accessible and usable without any limitation in case the Contractor is not able anymore to fulfil its tasks within the service contract.

For software developed in the scope of this contract and for which the Intellectual Property Rights (IPR) will remain with the Contractor, the Contractor shall provide EMSA with unlimited right to use the software (including source code).

The Contractor shall provide a clear specification of all intellectual property rights (IPR) or licence issues affecting the NSW Prototype.

5.5   Quality Assurance

Quality Assurance shall be performed by the Contractor according to industrial best practices. A Quality Management plan shall be provided and discussed during the Kick-off meeting. Any Quality Management standard

(including product assurance) followed by the Contractor shall be specified in their bid and any specific tailoring required by this project should be identified and pointed out.

5.6 Language

The English language shall be used throughout the duration of any activities associated with this Framework Contract for all deliverables, communication, reports and other documentation.

5.7 Used products and infrastructure

The technologies and tools to be used for the provision of services and products are listed in Enclosure 1. The personnel providing the service will use only the standard software packages as utilised at EMSA, and no other software may be installed or used without the prior written authorisation of EMSA.

5.8 Third party licences for products used in the software implementation

The offers for service and associated specific contracts should, unless explicitly agreed otherwise, cover the costs of any licence or product required to perform the service.

5.9 Place of work and access to EMSA environments

The place of work for the tasks shall be the contractor's premises. VPN access could be provided to the EMSA infrastructure and test environments, on the basis of the signature of conditions of use regarding security as described in Enclosure 3 – Condition of use, remote access to EMSA IT network.

5.10 Working time

Services provided by the contractor at EMSA premises and any contact/meetings with EMSA shall be carried out within the normal working hours/days of EMSA (a calendar will be provided to the contractor when available, usually three months before the end of the previous year). Office hours are from 9 a.m. to 6 p.m. on normal working days.

Under exceptional circumstances and with the previous agreement of both EMSA and the contractor, work might be performed outside of normal working hours/days.

5.11 Meetings

DG MOVE / EMSA will call for technical management meetings to review the progress of the project and/or activities. Technical management meetings will be held in EMSA premises in Lisbon, Portugal, or will take another form if decided by EMSA (e.g. by teleconference or videoconference).

Action list, risk registry and planning will be reviewed during technical management meetings. At each technical management meeting, the contractor should present an updated project status report.

In addition to the project status reports, between the technical management meetings, the contractor will deliver to DG MOVE and EMSA a flash report.

The contractor is responsible for providing detailed agenda and supporting documents for the meetings, support the discussions during the meeting, and providing the minutes of the meetings. The minutes of the meetings must include at least the topics discussed, decisions taken and action items with indication of the responsible person and deadline of the actions.

6 Reference scenarios

The three reference scenarios described in this section will be used to evaluate the proposed technical solutions.

6.1 Scenario 1: Import of cargo information in IE303 format

In order to avoid ship data providers having to input the same cargo declaration twice, in the Member State's Import Control Systems (ICS) and in the NSW, an interface should be implemented in the NSW to allow the NSW to fill in the information in the Cargo tab from the cargo declaration file provided by the Member State's national ICS system.

This option should be available in the Cargo tab of the notification details screen. Upon selecting this option, users should be able to select a cargo declaration file. Once provided, NSW should extract the relevant cargo data from the file and fill in the relevant fields of a cargo declaration in the Cargo tab.

The cargo declaration file will be modelled on the existing IE303 XML message (Entry Summary Declaration Response message), which is already supported by the national ICS systems. The NSW will need to translate the IE303 XML structure to the NSW Cargo data structure.

The specifications of IE303 message format are provided in Enclosure 4 - Technical documentation for scenario 1, containing files which can be opened as XML tables.

6.2 Scenario 2: Link to SSN Central Hazmat Database

As indicated in Appendix A of the Tender Specifications, the SSN system will feature a Central Hazmat Database (CHD) which will provide reference information regarding dangerous and polluting goods. A link with the CHD will be introduced in the NSW Prototype in order to get the reference data from the CHD. This reference data will be used by the NSW Prototype to facilitate the reporting of dangerous and polluting goods details in the NSW Prototype by the Ship Data Providers.

The following scenario illustrates how such feature may be offered to the user:

1. The Ship Data Provider logs in the NSW Prototype, selects a ship, and starts reporting an arrival or departure notification.
2. The Ship Data Provider goes to the "Cargo" tab and records a cargo consignment.
3. The Ship Data Provider records a cargo item which is a dangerous material.
4. The Ship Data Provider inputs the textual reference
5. The Ship Data Provider has to choose the correct option if the search produces more than one result
6. The NSW Prototype fills-in the applicable fields automatically: DG classification, UN Number, IMO hazard class, packing group, subsidiary risks, flashpoint, MARPOL pollution code, EmS.
7. The Ship Data Provider verifies the information provided and, if necessary, amends the incorrect information
8. The Ship Data Provider fills-in the remaining fields: quantity, location on board, additional comments

A description of the services offered by the CHD is provided in Enclosure 5 - Technical documentation for scenario 2.

6.3 Scenario 3: Exchange of cargo data with SSN

The current NSW Prototype and SSN System allow the exchange of port call, dangerous and polluting goods, waste on board, security, crew and passengers data. In this scenario, an enhancement of SSN system is implemented by EMSA to allow receiving and providing cargo manifest details. For that purpose, additional data fields are added in the PortPlus notification and ShipCall request-response services of SSN.

An enhancement of the NSW Prototype will be developed to use this additional service of SSN in order to:

1. Send summary information regarding the cargo data to SSN when an arrival or departure notification is submitted, through a PortPlus notification (e.g. MS2SS_PortPlus_Not messages)

2. Make available the detailed cargo data to SSN when requested by SSN (e.g. when receiving a SSN2MS_ShipCall_Req message from SSN).

3. Request to SSN detailed cargo data from previous port calls of the ship in another country (e.g. by sending a MS2SSN_ShipCall_Req message to SSN) in order to re-use the data for preparing a new notification for the same ship.

The specifications of the current services offered by SSN are provided in Enclosure 4 of Appendix A to the tender specifications.

A description of the adapted SSN services is provided in Enclosure 6 - Technical documentation for scenario 3.

7   List of enclosures

Below is the list of all Enclosures of relevance to the technical specifications.

Enclosure 1: ICT Architecture-System and Application Technical Landscape

Enclosure 2: Initial Quality Gate for Java Projects

Enclosure 3: Conditions of use of remote access to EMSA IT network

Enclosure 4: Technical documentation for scenario 1

Enclosure 5: Technical documentation for scenario 2

Enclosure 6: Technical documentation for scenario 3