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DELIVERABLE SUMMARY SHEET

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| Short Description |
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| The objective of the deliverable D5.1 is to validate and evaluate MSML (Maritime Safety Markup Language) system for exchanging MSML instances between vessels and maritime stakeholders. The benefits from connectivity and interoperability with existing onboard and ashore based systems were also considered. |

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EXECUTIVE SUMMARY

This report provides a validation and evaluation of the MSML (XML application) (Maritime Safety Markup Language) system for exchanging MSML instances between vessels and maritime stakeholders. This was based on feedback obtained from a number of maritime stakeholders that included: Maritime Administrations, Port Authorities, Classification Societies, Ship repair yards, Ship masters, Communication network services and equipment suppliers.

For demonstrating the exchange of MSML (XML application) messages between a ship and the shore a number of messages were selected to demonstrate the interactions between the system and its users. These messages relate to the scenario for Requested Repair by Port State Control (PSC) and to the pre-docking phase before entering port as described in Deliverable D3.2 - *Scenarios & Functional Specification for Repair and Maintenance*.

In order to ensure a consistent approach and to ensure that the same topics were covered in each case, a validation and evaluation form was produced for end-user feedback. This consisted of a number of questions including selected criteria relating to improvements in safety and environmental protection. It was also designed to identify any specific areas where further development would be valuable, and to identify specific recommendations for the promotion of maritime e-work

To explore how the use of MSML messages could benefit from connectivity and interoperability with existing onboard and ashore based systems a number of systems were considered. These included Global Positioning Systems (GPS) Automatic identification System (AIS), Voyage Data recorder (VDR), Vessel Traffic Services (VTS)/ Vessel Traffic and Maritime Information Services (VTMIS), International Ship and Port Facility Security (ISPS) Code, Port reception facilities, and Global Maritime Distress and safety System (GMDSS), Classification Societies surveys, and ship automation and diagnostics. Areas for future development and the added value of MSML (XML application) were also considered.

It was established that MSML could undoubtedly provide a useful service for exchanging safety related messages, providing it does not duplicate existing systems. It would however, be able to provide added value to existing messages that would enhance safety. For example, it could provide useful information in emergency situations, such as local weather conditions, for Port State Control and for repair and maintenance applications.

A strategic vision for MSML is that it could be used to structure all relevant information that is safety-critical in the maritime sector. This will allow for very efficient, secure and streamlined information processing and transfer, but it will also require extensive efforts in integrating various functions and proprietary solutions into the system.

The use of MSML will improve the cooperation between the different stakeholders involved in the exchange of messages. For example, it can provide the history of stored information for subsequent use, such as the ship's history including ports visited etc., as required by ISPC Code, records of previous surveys and maintenance carried out on equipment. The MSML system could also be used in parallel to other ship maintenance systems, some of which use XML, to provide an integrated repair and maintenance service.

A number of existing onboard systems and services were found to have potential connectivity and interoperability with MSML safety related messages. These systems and services included:

- Global Positioning Systems (GPS)
- Automatic identification System (AIS)

- Voyage Data recorder (VDR)
- Vessel Traffic Services (VTS)/Vessel Traffic and Maritime Information Services (VTMIS)
- International Ship and Port Facility Security (ISPS) Code
- Port reception facilities
- Global Maritime Distress and Safety System (GMDSS)
- Classification Societies surveys
- Ship automation and diagnostics

MSML could be used to structure all safety-critical information by connecting to onboard systems such as GPS, AIS, VTS/VTMIS and GMDSS equipment. This will allow for very efficient, secure and streamlined information processing and transfer. The integration of these systems will require suitable interfaces, possibly in XML. Components of the onboard systems for ship automation and diagnostics would include diagnostic and automation tools, such as sensors, bus systems, evaluation, monitoring devices and software, administrative software etc.