

IMO/IHO HARMONIZATION GROUP ON  
DATA MODELLING  
Agenda item 5

HGDM 1/5/1  
15 September 2017  
ENGLISH ONLY

**DEVELOPMENT OF A DEFINITION FOR MSPS AND CONSIDERATION FOR THE  
HARMONIZATION OF THE FORMAT AND STRUCTURE OF MSPS**

**Proposal of a work program to help develop guidance on the definition and  
harmonization of the format and structure of Maritime Service Portfolios (MSPs)**

**Submitted by Australia, Canada, Denmark, Germany, Norway and Republic of Korea**

**SUMMARY**

***Executive  
summary:***

This document proposes a work program to the IMO/IHO HGDM to help develop guidance on the definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs) in accordance with the instruction from MSC 98 (MSC 98/23, paragraph 11.37)

***Action to be taken:*** Paragraph 9

***Related documents:*** MSC 90/27, NCSR 4/27, MSC 98/20, MSC 98/23

**Background**

1 Document MSC 90/27 recognized that the e-Navigation architecture required a data structure to optimize the use, interoperability, flow and accessibility of marine navigation-related data and information.

2 The IMO e-navigation Strategy Implementation Plan (SIP) initially identified sixteen Maritime Service Portfolios as the means of providing electronic information in a harmonized way to ships. The SIP also proposed specific objectives for MSPs such as:

A "Maritime Service Portfolio (MSP)" defines and describes the set of operational and technical services and their level of service provided by a stakeholder in a given sea area, waterways or ports, as appropriate (NAV 57/6, paragraph 23).

3 The development of MSPs is distributed among different international organizations. This poses a challenge in terms of applying a common approach. In order to develop a consistent data model and to avoid duplication of work, better coordination between these international organizations is required.

4 To that end, the NCSR Sub-Committee proposed the activation of the IMO/IHO HGDM and submitted a draft work plan to MSC 98, which MSC 98 approved.

5 Several member States already provide new shore-based e-navigation services ("operational services"), which are supported by information systems ("technical services"), for navigational safety of ships in their waters. These initiatives highlight the complementary relationship between operational and technical services for MSPs.

### **MSP development proposal**

6 The documents provided in the annexes propose that the HGDM considers operational services as well as their associated technical services in the development of MSP guidance and related data models. This should be seen in context with proposed guidelines for specification of e-navigation technical services, which has been submitted to the HGDM by Australia *et al.*, together with an example of one such technical service (HGDM 1/5/2).

7 The following documents can be found in the annexes:

.1 Annex 1 - MSP template; operational level

This document gives a generic template to describe MSPs on an operational (non-technical) level. The template includes a section for referencing the e-navigation technical service(s) associated with an MSP. This template is derived from IALA's draft guideline on MSPs.

.2 Annex 2 - Example definition of MSP5: Maritime Safety Information; operational level

This document is the extraction of the IALA draft guideline on MSPs that describes MSP5. The purpose to include this, is to show an example of an MSP, and the link to associated technical services.

8 In developing guidelines for MSPs, generic parts of the guidelines need to be developed before other parts which might be specific to certain MSP(s).

### **Action requested of the HGDM**

9 The HGDM is invited to consider the information provided in this document and the annexes and decide as appropriate.

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## **ANNEX 1**

### **PROPOSED TEMPLATE FOR MSPS**

To ensure a standardized approach in the development and implementation of MSPs, the content should include a general description of the operational services, the current means of communication, and technical services that will enable the exchange of information in digital format.

The description of all MSPs will be based on the following template:

#### **Title**

Based on the IMO Strategy Implementation Plan (SIP)

#### **Definition**

Based on the SIP, but additional details might be added for clarity as required.

#### **Sea area(s) of implementation**

Based on the sea areas defined in the SIP.

#### **Objective**

What is the purpose of the MSP?  
What value does it bring to its intended users?  
What are the regulatory/mandatory requirements?  
In the case that the MSP covers existing services, a description of the steps required to go from analogue to digital information promulgation must be included.

#### **User requirements**

Describe the pros and cons of current means of communication and how a transition towards digital format might constitute a potential added-value for mariners. Identify communication systems that can receive and display MSP content.

#### **Information to be provided**

This is a list of information elements to be provided as part of this MSP. It will be the starting point for data modelling. This information will link to the technical services which will actually be promulgating the information.

### **Relation to other MSPs**

In some cases there is a relation between MSPs. For instance some apparent overlap. This needs to be clarified in this section.

### **Associated technical services**

This will be a list of technical services associated with this MSP. The specifications of these will follow the IALA guideline on e-Navigation technical services (IALA guideline #?). The exact reference to technical services will be made using MRN's (Maritime Resource Name).

The reference to the technical services should be represented in a table as the following:

<b>Name</b>	<b>ID (MRN)</b>	<b>Description</b>	<b>Architect(s)</b>	<b>Standardisation body</b>

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## **ANNEX 2**

### **MSP5 MARITIME SAFETY INFORMATION - DRAFT**

**This document is taken from IALA's draft guideline on MSPs and only serves as an example of an MSP with link to technical services**

#### **Definition**

The Global Maritime Distress and Safety System (GMDSS) as described in SOLAS chapter IV defines the seventh functional requirement as: "Every ship, while at sea, shall be capable of transmitting and receiving maritime safety information".

The MSI service is an internationally coordinated network of broadcasts of Maritime Safety Information from official information providers, such as:

- National Hydrographic Offices, for navigational warnings and chart correction data;
- National Meteorological Offices, for weather warnings and forecasts;
- Rescue Co-ordination Centres (RCCs), for shore-to-ship distress alerts; and
- the International Ice Patrol, for Oceanic ice hazards.

Specific information on Aids to Navigation and restrictions on safe navigation are part of MSI services provided by National Authorities. This can include but is not limited to, the following type of information to be available to mariners:

- status of Aids to Navigation;
- status of GPS and DGPs;
- buoy tendering operation; and
- restriction on safe navigation such as bridge/hydro cable air gap, new hazards, construction or dredging operations.

#### **Scope**

MSP5 can be delivered in all sea areas (1-6).

#### **Objective**

The joint IHO/IMO/WMO Publication S-53 states that the Maritime Safety Information Service of the GMDSS is the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation, received on ships by equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability. This concept is illustrated in figure x.

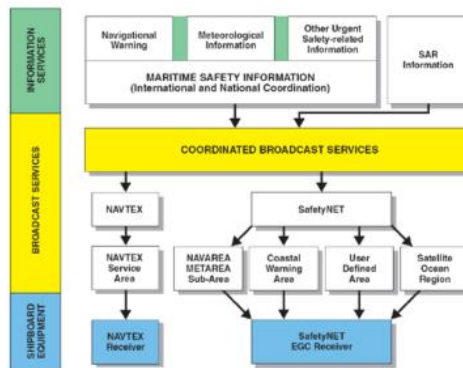


Figure x The maritime safety information service of the Global Maritime Distress and Safety System (Source: S-53)

\*Note that search and rescue information is outside of scope for this MSP.

Additionally, local and regional governments may provide MSI information in other formats such as through a website, push e-mail service and social media.

Within GMDSS, navigational warnings promulgation is done in defined areas that are managed by area coordinators as illustrated on figure xx.

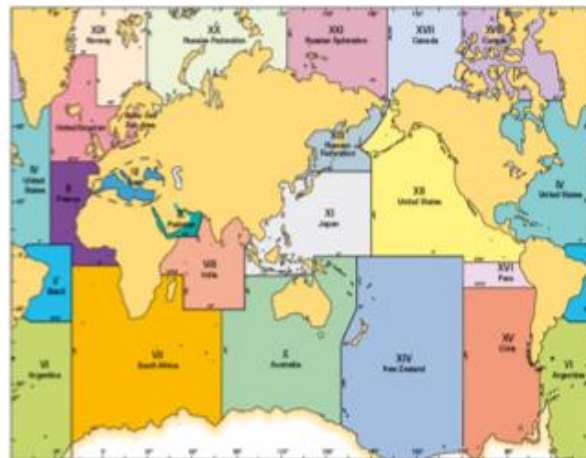


Figure xx NAVAREAs for coordinating and promulgating navigational warnings under the World-Wide Navigational Warning Service (Source: S-53)

Marine meteorological warnings are, within GMDSS, promulgated in defined areas which are under the coordination of defined area coordinators. Within other distribution channels, other areas and operators are possible.

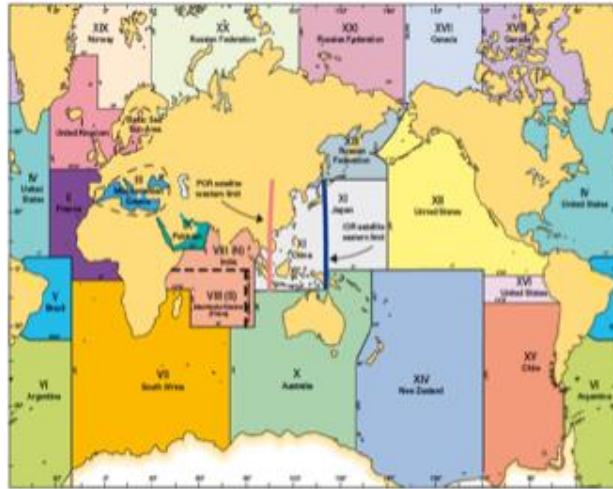


Figure xxx METAREAs for coordinating and promulgating meteorological warnings and forecasts within the GMDSS (Source: S-53)

## User requirements

Two principal methods are used for broadcasting maritime safety information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, as follows:

1. NAVTEX: broadcasts to coastal waters; and
2. SafetyNET: broadcasts which cover all the waters of the globe except for Sea Area A4, as defined by IMO resolution A.801(19), annex 3, as amended.

Additionally, HF NBDP may be used to promulgate maritime safety information in areas outside Inmarsat or NAVTEX coverage (SOLAS regulation IV/7.1.5). Ships are required to be capable of receiving maritime safety information broadcasts for the area in which they operate in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended. The NAVTEX receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.540, as amended. The SafetyNET receiver should conform to the Maritime Design and Installation Guidelines (DIGs), annex B, issue 6 of April 2008 published by Inmarsat. In Sea Area A4, outside of the coverage of NAVTEX, where MSI is received using HF NBDP, the HF NBDP receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.688, as amended, and should meet the performance standards adopted by IMO resolution A.700(17), as amended. Future MSI services should provide information in formats and by means that allow it to be better integrated with other systems on board, especially ECDIS. IHO is developing the S-124 standard which is expected to be the next generation MSI exchange standard. It is envisioned that these will interact in various forms with the ENC within the ECDIS.

## Information to be provided

### Relation to other MSPs

Information related to ENC data such as updates to the status of navigation aids will supplement information that is part of MSP 11 and MSP 17. Anti-piracy warnings transmitted as MSI will overlap with MSP 20 and will probably be summary information that is expanded on in MSP 20 services. Meteorological information such as forecasts will overlap information that is part of MSP 14 and MSP 15, and again will potentially be extracts or summaries of information that is provided in more detail as part of those services.

### Associated technical services

Name	ID (MRN)	Description	Architect(s)	Standardisation body
NW-NM T&P	urn:mrn:mcl:service:specification:dma:nw-nm	The NW-NM service specification defines a combined NW-NM T&P model along with the actual service API used for accessing NW-NM data	Danish Maritime Authority	IHO
Marine Weather warnings and forecasts				WHO
Oceanic ice hazards				
Other technical services?				

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