Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **□** ENG **□** PAP **□** Input

**□** ENAV **□** VTS **□** Information

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Technical Domain / Task Number 2 …………………………………

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Progress on E-navigation Services - WG4

# Summary

This input paper presents the progress and ongoing work on developing the e-navigation services so as to achieve digitalization of information and greater harmonization. The strategic work program includes a development of attributes related to each of the sixteen IMO agreed Maritime Service Portfolio (MSP), which is tasked by the working group four (WG4). The Working Group has established a prioritization list of the MSP as part of the strategic plan of work. During IALA ENAV16 the WG4 finalized the operational attributes for three MSP – MSP11; MSP5; and MSP15. In accordance with TOR this is restricted to the operational aspects [non - technical]. The technical specifications will be developed in liaison with other Working Groups and relevant organizations. On invitation from IHO, the chairman participated in the IHO-NIPWG1.

The e-Navigation work in IALA was presented and IHO was invited to a closed cooperation. IHO recognized that several MSPs are their professional domain. Some attributes and MSPs are linked to each other and should be solved in closed cooperation with several relevant organizations.

IHO will cooperate with IALA in the development of product specifications. The first task is the development of s-124 [MSI]. The chairman of this IHO work will cooperate with the WG4 on this.

IHO will prioritize the development of standards and testbeds for nautical chart information, maritime safety information, and real-time hydrographic information, however IHO is also open to provide assistance in the development of other MSPs.

To avoid double and parallel work in the development of product specifications, it is suggested that the outcomes from WG4 be a liaison as input from IALA to the appropriate responsible organizations.

Reference in paragraph 4 includes International standard and publications relevant to MSPs and recognized responsible organizations.

WG4 make uses of several existing international guidelines, recommendations and publications and will be the basis for developing product specifications and thus, facilitating the digitalisation of information.

**MSP13:**

Intercessional work has been done on the development of MSP13. The development of attributes for MSP13 is based on WMO No.259 and WMO/TD 1215.

**MSP8:**

MSP8 has been developed based on the European SafeSeaNet XML Messaging Reference Guide and Guidelines for exchanging MRS notifications through SSN.

**MSP12:**

MSP12 have been developed based on existing publications, Guidelines and international standardizations, such as the IALA Maritime Buoyage System; The IALA Guideline on Sector Lights; The SNPWG Standardization of Nautical Publications Working Group.

In accordance with the TOR, the remaining MSP was planned to be delivered to ENAV17. Based on the experience so far, it is recommended that MSP1, MSP2, and MSP3 are postponed to ENAV19.

## Purpose of the document

The purpose of this document is to present the ongoing work and progress for developing the necessary MSP attributes for operational (i.e. non-technical) e-Navigation services that could be used in the product specifications to achieve the digitalization of information.

The issues raised in this paper focus on developing the attributed needed for a global digitalization and harmonization of information regarding all the IMO agreed MSP.

The committee is expected to take note on the proposed attributes and methodology, provide comments and advise, and review accordingly.

## Related documents

Several documents have been produced in line of the established work program. Thus, a document presenting the work program with sixteen task registers on MSP, each outlining the following:

1. Objectives of the task
2. Expected outcome
3. Strategic Alignment
4. Scope (Describe key items that are in scope/out of scope)
5. Expected Sessions for Completion:
6. Brief and concise description of the work to be undertaken and programme milestones where appropriate.

# Background

During the 15th meeting of the IALA e-Navigation committee working group 4 ”E-Navigation Services” was established.

E-navigation services provide information for stakeholders utilizing an infrastructure capable of ensuring safe, secure and seamless information exchange across available communication channels. Maritime Service portfolios (MSPs) have been introduced to provide global e-navigation services in a harmonised manner.

The main focus and output from WP4 was the work program for the next sessions (e-nav16). The working group considered this as fundamentally important to achieving good results and delivering effective services. The work plan reflects the need to associate particular user needs with each e-Navigation services for delivery to other WGs. The next stage in the work program was the further development of the e-Navigation services attributes, which will be fundamental for making product specifications, as well as the production of a Guideline and recommendations. A draft work plan was developed and delivered.

After finalizing the work program, the work group was tasked to develop the first concepts of attributes for MSI (MSP5) taking into account existing recommendations from IHO.

This work will be further progressed intercessional by correspondence to produce a required services matrix template in accordance with the work program. The following services categories have been prioritized by the working group in terms of plan of work:

1. MSP5: Maritime Safety Information (MSI) Service
2. MSP15: Real-Time Hydrographic and Environmental Information Services
3. MSP11: Nautical Chart Service
4. MSP1: VTS Information Service (IS)
5. MSP12: Nautical Publications Service
6. MSP14: Meteorological Information Service
7. MSP13: Ice Navigation Service
8. MSP8: Vessel Shore Reporting
9. MSP4: Local Port Service (LPS)
10. MSP2: Navigational Assistance Service (NAS)
11. MSP3: Traffic Organization Service (TOS)
12. MSP10: Maritime Assistance Service (MAS)
13. MSP6: Pilotage Service
14. MSP7: Tugs Service
15. MSP16: Search and Rescue (SAR) Service
16. MSP9: Telemedical Maritime Assistance Service

# Discussion

There are several existing international recommendation, guidelines and publications that outline attributes for analogue information. The chosen strategy is to use those attributes related to each MSP, and further develop product specifications which will facilitate the digitalisation of information. In this regard, a closed cooperation with relevant international organizations and with relevant technical Working Groups is essential.

# References

**International standard and publications relevant to MSP and responsible organizations**

| **MSP** | **Name** | **International Standards / Official Publications** | **Code** | **Responsible organizations** |
| --- | --- | --- | --- | --- |
| **MSP1** | VTS Information Service (IS) | IALA VTS | IALA VTS Manual 2012 | IALA; IMO |
| IMO. 1997a. Guidelines for Vessel Traffic Services | Resolution A.857(20) |
| **MSP2** | Navigational Assistance Service (NAS) | Provision of a Navigational Assistance Service by Vessel Traffic Service | IALA Guideline No. 1068 |  |
| **MSP3** | Traffic Organization Service (TOS) |  |  |  |
| **MSP4** | Local Port Service (LPS) |  |  |  |
| **MSP5** | Maritime Safety Information (MSI) Service | Joint IHO/IMO/WMO | S-53 |  |
| **MSP6** | Pilotage Service |  |  |  |
| **MSP7** | Tugs Service |  |  |  |
| **MSP8** | Vessel Shore Reporting | * EMSA - SafeSeaNet XML Messaging Reference Guide Version 3.01. * Guidelines for exchanging MRS notifications through SSN Version: 1.0 SafeSeaNet |  | EMSA; IALA; IHO; CIRM |
| **MSP9** | Telemedical Maritime Assistance Service |  |  |  |
| **MSP10** | Maritime Assistance Service (MAS) |  | IMO Resolution A.950(23) |  |
| Guidelines on places of refuge for ships in need of assistance | Res A.949(23, December 2003) |
| **MSP11** | Nautical Chart Service | IHO Transfer Standard for Digital Hydrographic Data | S-57 |  |
| IHO Bathymetric Surface Product Specification | s-102 |
| Specifications for Chart Content and Display Aspects of ECDIS | S-52 |
| Specification for Data Descriptive file for information Exchange | ISO\_IEC\_8211 |
| The International Standard for representation of each character | ISO/IEC 646 |
| Data Presentation | Ecma\_6  ECMA-35  ECMA-43  ECMA-48  ECMA-94  ECMA-113  ECMA-114  ECMA-118  ECMA-121  ECMA-128  ECMA-144 |
| **MSP12** | Nautical Publications Service | Regulations for International (INT) Charts and Chart Specifications of the IHO | S-4 | IHO: Digital Information Portrayal Working Group  DIPWG  IALA  SNPWG Standardization of Nautical Publications Working Group |
| Standardization of List of Lights and Fog Signals | S-12 |
| International Abbreviations, as requested by IEC 61174 | S-4 |
| Hydrographic Dictionary | S-32 |
| International Hydrographic Review | P-1 |
| IHO Yearbook | P-5 |
| WMO: Guide to the Global Observing System | 488 |
|  | IALA Guideline No. 1041 On Sector Lights Edition 2  IALA Maritime Buoyage System  IALA Guideline No. 1061 On Light Applications Illumination of Structures Edition 1  SNPWG10-009 Portrayal |  |  |
| **MSP13** | Ice Navigation Service | ships operating in polar waters | IMO Resolution A.1024(26) | IMO; IHO; WMO  International Ice Charting Working Group (IICWG)  JCOMM ETMSS is responsible for GMDSS standards and is developing M.O.C.  Within the WMO JCOMM  ETSI is responsible for operational sea ice standards including WMO Sea Ice Nomenclature  By agreement with IHO TSMAD, JCOMM ETSI is the formal body responsible for the Ice Objects Catalogue with WMO Secretariat as co-manager of the catalogue |
| Ice Chart Colour Code Standard  Sea Ice Nomenclature  International System of Sea-Ice Symbols  WMO standards and guidelines for sea ice: ice charting and observations | WMO/TD-No. 1215  WMO No. 259, Volume 1 |
| **MSP14** | Meteorological Information Service | WMO: Manual on Marine Meteorological Services | 558 |  |
| Manual on Codes - International Codes, Volume I.2: Part B and Part C  Manual on Codes - International Codes, Volume I.1: part A- Alphanumeric Codes | 306 |
| WMO: Basic Documents, 2. Technical Regulations, Volume I: General Meteorological Standards and Recommended Practices |
| **MSP15** | Real-Time Hydrographic and Environmental Information Services | Bathymetric Surface Product Specification | S-102 |  |
| IHO Universal Hydrographic Data Model | S-100 |
| IHO Transfer Standard for Digital Hydrographic Data | S-57 ISO/IEC 8211:1994 |
| **MSP16** | Search and Rescue (SAR) Service | International Search and Rescue Advisory Group  Guidelines and Methodology | INSARAG Guidelines 2012 |  |

# Action requested of the Committee

The committee is requested to review the input document on MSP12, MSP8, and MSP13; Furthermore to review the list of responsible organizations and make liaison to relevant organization for technical development of product specifications in cooperation with IALA. Additionally, to give input on additional relevant documents and provide guidance on the work plan, guidance with respect to the liaison with other committees on matters related to e-navigation service, and a overall plan with regards to the IMO Strategic Implementation Plan (SIP).

# Annexes

1. Annex 1: MSP TASK REGISTERS- ENAV Committee – 2014-18 Work Programme

See attached document

1. Annex 2: MSP12 Nautical Publication Service Attributes

See attached document

1. Annex 3: MSP13 Ice Navigation Service Attributes

See attached document

1. Annex 4: MSP8 Vessel Shore reporting Service attributes

See attached document

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