NIPWG discussion paper

IMO e-navigation MSP Hydrographic Services

Submitted by:	NIPWG
Executive Summary:	Outcome of the discussion with other HSSC WG on contribution to the MSP MSP development work
Related Documents:	NIPWG work plan
Related Projects:	IMO e-navigation

Introduction / Background

The development of e-navigation under the overall coordination of the IMO is guided by a Strategy Implementation Plan (SIP), which was approved by MSC 94 in November 2014. The SIP (NCSR1/28, annex 7) identifies Maritime Service Portfolios (MSPs) as the future means of providing digital ship-to-shore and shore-to-ship information services in a harmonized way.

The concept of MSPs defines and describes the set of operational and technical services and their level of service provided by a stakeholder in a given sea area, waterway, or port, as appropriate.

The SIP identifies six different areas for the delivery of MSPs:

1. port areas and approaches;
2. coastal waters and confined or restricted areas;
3. open sea and open areas;
4. areas with offshore and/or infrastructure developments;
5. Polar areas; and
6. other remote areas.

The way forward for MSPs is assigned to SIP Task T17 stating "Further develop the MSPs to refine services and responsibilities ahead of implementing transition arrangements". An initial list of MSPs has been annexed to the SIP. This paper lists 16 different MSPs.

Certain MSPs address services which are under the remit of other IRCC or HSSC WGs. Feedback was requested from the involved WGs to evaluate how they could contribute to the MSP development.

Analysis/Discussion

It was assumed that five services out of the above mentioned list are affected by themes and responsibilities within the IHO scope. Those are

- MSP 5 - Maritime Safety Information (MSI) service;
- MSP 11 - Nautical chart service;
- MSP 12 - Nautical publications service;
- MSP 13 - Ice navigation service; and
- MSP 15 - Real-time hydrographic and environmental information service.

The IHO's position is that these MSPs in their strict segmentation reflect the traditional methods of promulgating nautical information. In IHO´s opinion reflected in the associated report to NAV59 (NAV59/6/4), the themes of these MSPs do not address the desired flexibility offered by digital products and electronic display and information systems in the context of e-navigation and should therefore be revised.

In order to progress task Task17, MSC 96/23/7 proposes a new output on e-navigation related to Maritime Service Portfolios (MSPs). It aims to define and harmonize the format and structure of MSPs and to provide guidance on the appropriate communication channels used for the electronic exchange of information between shore and ship, including any necessary coordination mechanisms and transitional arrangements that may be required. This document acknowledges that the **IHO has agreed to coordinate the development of MSPs within its remit**. In this context concerns on the possible duplication of efforts, development of regional solutions, use of different communication systems, and the provision of superfluous or non-interoperable information were raised. The

document proposes to harmonize the format and structure of MSPs and to assign this work to NCSR as the coordinating organ.

As a result of the above-mentioned activities, and based on action item HSSC7/35, the NIPWG started the discussion process on which type of MSP(s) would sufficiently match the scope of the Hydrographic Authorities/ Organizations in both technical and organisational aspects.

It was proposed to merge the MSP 11, MSP 12 and the MSP 5 parts pertaining to the hydrographic offices/agencies.

Feedback was received from the WWNWS-SC, stating is that MSP 5 (MSI) should not be merged with other hydro parts. MSI/NavigationalWarning service is the subject of an existing organization. It should be considered that in certain places the GMDSS/WWNWS coordination doesn't belong to hydrographic offices.
The WWNWS-SC is the opinion that a hydrographic service MSP should be a merger of MSPs 11-13 and MSP 15.

The WWNWS-SC comments provided on the MSP "Hydrographic Services" draft have been considered by NIPWG4 and have been incorporated in the table below.

MSP	Service	Service Provider	Short Description
MSP xx	Hydrographic Services	National Hydrographic Authority/ Organization	Provision of SOLAS V compliant static and real-time nautical information based on the S-100 universal hydrographic data model. The nautical information is also available for other stakeholders. The information and updates are to be delivered and maintained in form of interoperable product specifications. The portrayal of information is harmonized. The provision of the information is based on a common data quality specification. In addition to the protection of the environment, the aim is to promote navigation awareness, and safeguard navigation at sea by providing descriptive information such as but not limited to: areas of the sea, nature and form of the coast, nature of waterways, shipping routes, water depth, obstructions and other dangers to navigation, aids to navigation system, details of aids to navigation, harbours, tide surge prediction, tidal currents, tidal streams. The real-time hydrographic and environmental information service provides information such as: current speed and direction, height of the tide, wave height, marine habitat and bathymetry. A sophisticated licensing service is established. A sophisticated distribution, and update service is established.

MSP	Service	Service Provider	Short Description
			Hydrographic information coming from various sources (qualified and useful information for navigation, delivered in a timely manner) is being submitted in a push or pull mode directly to the end user system in a pre-processed format or with no additional intervention. Provision of charted information.

Conclusions

The e-navigation concept is based on the assumption that a ubiquitous communication infrastructure providing sufficient bandwidth for ship-shore interaction will be permanently available. That offers new possibilities for the provision and updating of nautical publications, such as books, charts, and supplementary publications and for the provision of real-time data.

Considering that the assumed technical infrastructure will be available in the future, the distinction between chart, publication, and real time data delivery is no longer required. Instead, a combined data stream of charted and text-oriented information describing and maintaining the same subject could be handled by the respective end users application on both sea and shore side. In addition, these information packages could be enhanced with real-time information.

Consideration is needed to define what kind of information is core hydrographic information related to the MSP and what kind of information is inside or outside the HOs responsibility. The proposed MSP "Hydrographic Service" should not provide information outside the hydrographic domain.

The MSP should provide information on which distribution way is being used. That should inter alia include the employment of current and future MSI data transmission methods.

Referring to http://www.iho.int/mtg_docs/circular_letters/english/2016/Cl24e.pdf (E-navigation section), the MSC put an action in their post-biennial agenda (2018-2019) to "Develop guidance on definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)" for which the NCSR will be the coordinating body. That offers a sufficient time frame to the IHO to develop a clear view on what should be part of the MSP "Hydrographic Service". Having developed the cornerstones of the said MSP, it would be feasible to deliver the MSP in due course in a correct format and structure as it will be requested by the IMO.

Recommendations

The NCWG's and TWCWG's feedback is missing. The NIPWG should persistently seek feedback from the these WGs to develop a common view of what kind of hydrographic information the MSP "Hydrographic Service" should cover.

Later, the main deliverables and the proposed provision ways for these deliverables should be described. In addition and if considered necessary, intermediate steps during the transition phase from the current way of information provision to the future way of information provision should be described.

Action Required of NIPWG

The NIPWG is invited

- to take this paper as a discussion basis for the MSP "Hydrographic Services" development,
- to act as appropriate.