Proposals for the development of Guidelines for the harmonized display of navigation information received via communications equipment

Submitted by IHB

SUMMARY

Executive Summary: This document provides comments and proposals related to the development of Guidelines for the harmonized display of navigation information received via communications equipment.

Action to be taken: Paragraph 2.

Related documents: NCSR 3/9/1 dated 23 December 2015

1. See attached document.

2. The Sub-Committee is invited to note the information provided and take action as appropriate.

INTERNATIONAL MARITIME ORGANIZATION

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GUIDELINES FOR THE HARMONIZED DISPLAY OF NAVIGATION INFORMATION RECEIVED VIA COMMUNICATIONS EQUIPMENT

Proposals for the development of Guidelines for the harmonized display of navigation information received via communications equipment

Submitted by Norway

SUMMARY

Executive summary:	This document provides comments and proposals related to the development of *Guidelines for the harmonized display of navigation information received via communications equipment*
Strategic direction:	5.2
High-level action:	5.2.6
Output:	5.2.6.2
Action to be taken:	Paragraph 19
Related documents:	Resolutions A.1061(28) and A.1062(28); MSC-MEPC.1/Circ.4/Rev.2; MSC 81/23/10; MSC 85/26/Add.1; MSC 94/21, MSC 94/18/8, MSC 94/18/10, MSC 94/28; MSC 95/19/8, MSC 95/19/14; NAV 58/14; NAV 59/INF.8; NCSR 1/9, NCSR 1/9/1 and NCSR 1/28

Introduction

1 At MSC 95, the Committee approved 5 of the 6 outputs related to the implementation of e-navigation. In particular, it agreed to output 5, the development of draft Guidelines for the harmonized display of navigation information received via communications equipment. This output relates to e-navigation solution 4, integration and presentation of available information in graphical displays received via communication equipment.

2 This output was included in the High-level Action Plan as item 5.2.6.2 and on the 2016-2017 biennial agenda of the NCSR Sub-Committee and the provisional agenda for NCSR 3, with a target completion year of 2017.

Background

3 E-navigation aims to provide needed information, by electronic means, to and from the ship's bridge team to enhance the safety and efficiency of marine navigation. E-navigation also aims to standardize the bridge layout, and how to process, read and use information provided. This will involve the integration of new and existing bridge technologies and equipment to enable the provision of globally harmonized maritime services and a common data structure on board. E-navigation will, therefore, help simplify the exchange of information between systems on board ships, and between ships, ships and shore and on shore.

4 The initial proposal (MSC 81/23/10) for the development of an e-navigation strategy identified that a lack of standardization on board and ashore would lead to increased and unnecessary levels of complexity and incompatibility between systems.

5 E-navigation is expected to equip shipboard users and those ashore responsible for the safety of shipping with effective, user-friendly, proven tools that are optimized for effective decision-making in order to make marine navigation and communications more reliable, resilient and user-friendly.

6 The implementation of e-navigation is crucial for ships and seafarers to continue being safe and efficient in a world that is undergoing unprecedented technology-driven change. A key aim of e-navigation is to ensure that ship and seafarer safety remain a top priority amongst often uncoordinated technology-driven change.

7 An overload of information given by different displays for navigation, communication and operational information makes the navigator on watch (OOW) inaccessible to prioritized information due to chaotic misplacement of information displays.

Navigation information received on board

8 The reception of Maritime Safety Information (MSI) by means of direct printing is an important part of the GMDSS. During the user-need analysis stage of e-navigation, mariners expressed the need to sort and display MSI more effectively.

9 On most ships, MSI information received via communications equipment such as NAVTEX and INMARSAT-C are either displayed on separate screens or printed on a roll of paper. The geographic coordinates (latitude/longitude) of the MSI must then be mentally compared to that of the vessel by the watchkeeper on the ECDIS to assess relevance and risk. This is time-consuming, distracting and is susceptible to human error.

10 It is important that this information is displayed as task-oriented on the bridge and harmonized with other navigation related information without obscuring critical navigation information. This information should be available in an interoperable way and be transferable to an integrated information display.

11 As new systems are being developed, such as the reception on board of Maritime Service Portfolios (MSPs), guidelines are needed to ensure that this extra information is displayed in a harmonized manner.

12 MSC 95 (MSC95/19/14) noted the need of a harmonization of information received and used on board.

13 The display of the information in harmonized and effective way increases the overall awareness of the information improving the situational awareness as well as reducing the mistakes made transferring information from paper outputs.

14. Consideration of an information display (Conning Display) at the conning station and other workstations on the bridge should be noted, bringing all the key information together. This display is for use in demanding operations where the OOW attention must be mainly focused on the outside situation while also being dependent on additional decision support by electronic means

15 IEC TC80 has recently updated its test standards, IEC 62288 ed2, for the display of such information. It is necessary to review this work in relation to the reception of MSPs for example.

16 It is important however that IMO ensure that a unified, harmonized and user-friendly solution is integrated and adopted. The solution must be based on agreed guidelines.

Guidelines for the harmonized display of navigation information received via communications equipment

17 The proposed guidelines will include:

.1 standardized symbology;

.2 standardized format of text;

.3 the use of a common maritime data structure, based on the work of IHO and their S-100 data structure;

.4 the provision of mapping for specific services to specific regions;

.5 routing and filtering of the information;

.6 alert functionality, when necessary, in line with current bridge alert management standards;

.7 human element and ergonomic design principles to ensure useful presentation and prevent information overload; and

.8 reference to other performance standards, such as the *Presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79)).

18 IEC Standard 62288 ed. 2, Presentation of navigation related information, should be considered when drafting these guidelines, especially annex A, paragraph 5.4, which contains information related to the display of MSI.

Action requested of the Sub-Committee

19 The Sub-Committee is invited to consider the harmonized display of navigation information received via communications equipment, when discussing the information above, and to take action, as appropriate.