Proposal on drafting new modules to Performance standards for integrated navigation system (INS) (resolution MSC.252(83))

Submitted by IHB

SUMMARY

Executive Summary: This document comments on, and provides proposals to, the new modules to the Performance standards for integrated navigation system (INS) (resolution MSC. 252(83)) relating to display of information, which will ensure that the INS can display the information received via communication equipment.

Action to be taken: Paragraph 2.

Related documents: NCSR 3/6/1 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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SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE
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ADDITIONAL MODULES TO THE REVISED PERFORMANCE STANDARDS FOR INTEGRATED NAVIGATIONS SYSTEMS (INS) (RESOLUTION MSC.252(83) RELATING TO THE HARMONIZATION OF BRIDGE DESIGN AND DISPLAY OF INFORMATION

Proposal on drafting new modules to Performance standards for integrated navigation system (INS) (resolution MSC.252(83))

Submitted by China

SUMMARY

Executive summary:	This document comments on, and provides proposals to, the new modules to the Performance standards for integrated navigation system (INS) (resolution MSC. 252(83)) relating to display of information, which will ensure that the INS can display the information received via communication equipment
Strategic direction:	5.2
High-level action:	5.2.6
Output:	5.2.6.1
Action to be taken:	Paragraph 14
Related documents:	Resolution MSC. 252(83); MSC 95/19/8 and NCSR 1/28

Introduction

1 This document is submitted in accordance with paragraph 6.12.5 of the *Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.4/Rev.4), and provides proposals to the new modules to the *Revised performance standards for integrated navigations system (INS)* (resolution MSC. 252(83)) relating to display of information.

Background

2 At MSC 95, it was agreed that a planned output on "drafting new modules to the INS Performance standards" be included in the 2016-2017 biennial agenda of the NCSR Sub-Committee, with a target completion year of 2017.

3 A revision of the INS Performance standards will require two new modules so that information received by communication equipment can be integrated, as well as properly displayed. The two new modules relate to harmonization of bridge design and display of information, respectively.

4 The new module relating to display of information will ensure that the INS can display the information received via communication equipment, and outline the standardized interfaces for data exchange to support the transfer of information from communication equipment to an INS interface.

China's study on data exchange between shipborne navigation equipment and communication equipment

5 In 2006, China carried out the research on shipborne data acquisition and transmission, and developed the ship and cargo online monitoring system. The system can collect four categories of heterogeneous data, including navigation information, engine information, cargo information, video information and the collected data can be uploaded to shore-based system via shipborne communication equipment.

6 In this system, more than 40 ocean ships, including bulk carrier, general cargo ship, container ship, passenger ship, and oil tanker were involved. The system can collect different navigation data from shipborne navigation equipment (including Compass, AIS, GPS, Echo Sounder, Log, Wind Vane and Anemometer, etc.), and send them to shore-based systems via different communication equipment (including Inmarsat Mini C, Inmarsat F, Inmarsat Fleet Broad Band (FBB), etc.).

7 Accordingly, with the knowledge that has been gained over the past ten years on the work related to the data exchange between navigation equipment and communication equipment, China provides the proposals below to assist the work of the Sub-Committee in its further consideration of drafting new modules to Performance standards for integrated navigation system (INS) relating to display of information.

Discussions

8 Because of the diversity of shipborne communication equipment, it is very difficult to connect INS equipment with communication equipment directly. Therefore, the exchange interfaces between INS and communication equipment should be standardized. The standardized interfaces defined in the new module should support the extension of communication equipment, such as the emerging NAVDAT and VDES.

9 Considering the actual need of ship-to-shore and shore-to-ship communication in e-navigation, the new module should support duplex communication between navigation equipment and communication equipment.

10 Actually, in shore-to-ship communication, communication equipment may receive both navigation safety-related information (such as Maritime Safety Information (MSI)) and ordinary business information (such as business email, entertainment information).The ordinary business information does not need to be processed by INS. The new module should have the functionality to distinguish the navigation safety-related information from ordinary business information.

11 In shore-to-ship communication, in order to avoid lack of situational awareness or information overload, there is no need for the INS to display all of the information received from shore-based systems immediately. Considering the navigational tasks and route, it is

necessary to integrate the navigation safety-related information received via communication equipment into INS in a harmonized and agreed way. Therefore, the new module should provide the store capabilities for the navigation safety-related information received via communication equipment.

12 In ship-to-shore communication, data collected from INS equipment should be automatically routed to appropriate communication equipment (considering channel quality, bandwidth, information type, urgency degree, etc.). In shore to ship communication, information (such as ENC Update) received via communication equipment can be automatically routed to appropriate INS equipment (such as ECDIS). Therefore, the new module should provide routing functionality.

Proposals

13 Based on the discussion above and practice, China proposes the new modules to the INS Performance standards (resolution MSC.253 (82)) relating to display of information be developed as follows:

.1 the added new modules should contain a dedicated gateway, which can avoid paying undue attention to the hazy communication infrastructure. The dedicated gateway should:

.1 support Ethernet interface and TCP/IP protocol;

.2 support duplex communication between navigation equipment and communication equipment;

.3 distinguish navigation safety-related information from ordinary business information via shipborne communication equipment; and

.4 provide the functionality of store-and-forward and routing and

.2 the added new modules are closely related to the guidelines for the harmonized display of navigation information received via communication equipment and the development and implementation of Maritime Service Portfolios (MSPs). Therefore, the added new modules should pay close attention to the latest progress in related research work.

Action requested of the Sub-Committee

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