INTERNATIONAL MARITIME ORGANIZATION

E

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

MSC.1/Circ.1593
25 May 2018

INTERIM GUIDELINES FOR THE HARMONIZED DISPLAY OF NAVIGATION INFORMATION RECEIVED VIA COMMUNICATION EQUIPMENT

1 The Maritime Safety Committee (MSC), at its ninety-ninth session (16 to 25 May 2018), approved the *Interim guidelines for the harmonized display of navigation information received via communication equipment*, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its fifth session (19 to 23 February 2018), as set out in the annex.

2 MSC 99, noting the interrelated work on e-navigation being undertaken by the NCSR Sub-Committee, particularly on the development of *Guidance on the definition and harmonization of the format and structure of maritime services within the Maritime Service Portfolio (MSP)* and the development of *Guidance on the standard mode of operation, S-mode*, agreed, in principle, that the annexed Interim Guidelines should be revised, as appropriate, once the aforementioned interrelated work had been completed.

3 Member Governments are invited to bring the Interim guidelines to the attention of all parties concerned.

***

ANNEX

INTERIM GUIDELINES FOR THE HARMONIZED DISPLAY OF NAVIGATION INFORMATION RECEIVED VIA COMMUNICATION EQUIPMENT

1 Purpose

1.1 This document provides interim guidelines for the display of navigation-related information received via communication equipment. It aims to ensure that information is displayed in an efficient, reliable and consistent format, in a manner that is easily interpreted to support decision-making.

1.2 These Guidelines supplement the *Performance standards for the presentation of navigation-related information on shipborne navigational displays* (resolution MSC.191(79)) in regard to the presentation of navigation information received via communication equipment.

1.3 The use of these Guidelines will ensure that navigation information received via communications equipment is displayed in a harmonized manner on the ships' navigational bridge.

2 Scope

2.1 The availability of electronic data that enhances the safe and efficient navigation of ships necessitates that shipborne systems capable of presenting this information to the user should do so in a harmonized and readily assimilated way.

2.2 This information will be presented to shipborne users through a combination of primary navigational displays, such as the Electronic Chart Display and Information System (ECDIS), radar and the Integrated Navigation System (INS), together with any additional display facilities that may be considered appropriate to assist the safe and efficient navigation of the ship.

2.3 Reception of Maritime Safety Information (MSI) by means of direct printing has always been an important part of the Global Maritime Distress and Safety System (GMDSS). However, it is clear from user requirements, such as those gathered during the user needs analysis of e-navigation, that there is a need to portray such information in a harmonized way on appropriate navigation displays.

2.4 To ensure effective decision-making and safe navigation, the proper integration and presentation of information received via communication equipment is essential.

3 Application

These Guidelines are applicable to the information obtained from, but not limited to, communications equipment defined in the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended.

4 General presentation requirements

4.1 Human-Centred Design (HCD)

4.1.1 The type and volume of information displayed should be appropriate to the voyage phase and should not overload the user. Therefore, these Guidelines should be read in conjunction with MSC.1/Circ.1512 in order to ensure that measures to prevent information overload take into account relevant HCD principles.

4.1.2 The type and level of information displayed should complement the user's capabilities and should take into consideration human factors principles as specified in section 5 (see MSC.1/Circ.1512, annex, paragraph 6). Higher levels of integration mean that systems should be carefully evaluated to ensure that complexity and workload are compatible with the ability of the user (OOW).

4.1.3 In designing systems and equipment that will incorporate navigation information received via communication equipment, due consideration should be given to the ability of the operator to manage information. Any information received requires careful prioritization based on HCD principles.

4.1.4 The receipt, display and use of navigation information received via communication equipment should be tested by the user and incorporated into the HCD process.

4.1.5 Navigation information received via communication equipment should be manageable through the application of user preferences. The system should assist the user in reducing clutter and in enhancing situational awareness.

4.1.6 The integration of navigation information received via communication equipment should not distract from the user's primary task of maintaining the safe navigation of the ship.

4.2 Display of information

4.2.1 Navigation information received via communication equipment should be displayed in a timely, unambiguous and harmonized manner.

4.2.2 Navigation information received via communication equipment should be displayed according to resolution MSC.191(79) and, if applicable, based on the relevant S-100 based Product Specification.

4.2.3 Information should, where applicable, be geo-located and integrated with other navigation and charted information. Where possible, the graphical geo-located display of areas, points, lines and other information received via communication equipment should assist the user in developing greater situational awareness.

4.2.4 The additional display of information from communication equipment should not degrade the primary information on a particular display but contribute to the overall navigational safety of the ship.

4.2.5 Data should be appropriately filtered according to the selected scale/display range of the display. Only critical information should be displayed at all ranges, if practicable.

4.2.6 The source of the received information should be readily identifiable.

4.2.7 Where navigation information indicates a direct risk to the ship's planned route and/or movement, the information should be indicated as an alert. This may be determined based on the safety settings available within the electronic navigation equipment such as ECDIS, radar or INS.

5 Functional requirements for presentation of information

5.1 General

Information that has been received by onboard communication equipment should include an integrity testing process.

5.2 Data routing

5.2.1 The user should be able to route data to another display if fitted.

5.2.2 There should be a clear indication of the routing of data in use.

5.2.3 Routing should allow the user to route the data according to the navigational situation and task.

5.3 Selection and filtering

5.3.1 Navigation information should be displayed in such a manner that information overload is prevented. Selectable functions should be included to allow for display of only the required information necessary for safe navigation and the task at hand.

5.3.2 It should be possible to select and filter (categorize) information and data received on board in accordance with urgency and sea area.

5.3.3 Information relevant to planned route and situation should be identified using adequate filtering processes.

5.3.4 Means should be available enabling the user to select the information needed for the current operational task and situation.

5.3.5 There should be a clear indication of the selection and filtering parameters in use.

5.3.6 It should be possible to manually select the information for automatic presentation on the navigational displays.

5.3.7 Information that presents a danger to safe navigation and requires an alert should be identified.

5.4 Prioritization

It should be possible to prioritize information and data received on board. This should be prioritized in accordance with urgency and sea area.

5.5 Indication of new information

An alert or indication should draw attention to the presence of new and/or relevant information related to the ship's movements or operating area.

6 Presentation of navigation-related information

MSI or other geo-referenced locations impacting safety

6.1 New information should be indicated on a route planning, route monitoring or collision avoidance display by an icon or symbol and an alert should be given.

6.2 It should be possible to present additional information upon selection (request) via pick-report functionality on ECDIS and radar displays or INS tasks route monitoring, route planning and collision avoidance.

7 Operational display

7.1 General

7.1.1 Information received from communication equipment should not obscure the primary information of an operational display.

7.1.2 The information received from communication equipment should be clearly distinguishable as being additional information that has been added to the display.

7.2 Possible additional display – INS task "navigation status and data display" – or other means

7.2.1 The increasing amount of data received from communication equipment may require an additional display on board.

7.2.2 Human-Machine-Interface (HMI) for displaying and evaluating received information as well as for specifying filtering, routing and presentation parameters (selection for presentation) should be considered.

7.2.3 The user should be able to view information items and their filtering, routing and selection (presentation) properties.

7.2.4 The user should be able to edit the filtering, routing and selection (presentation) properties of information items.