Input paper: ENG21-4.3.2

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

X ARM X ENG X PAP **□** Input

X ENAVX VTS X Information

Agenda item

Technical Domain / Task Number

Author(s) / Submitter(s) Secretariat

Report on IMO NCSR 12

# Introduction

This report summarises items of interest to IALA arising from IMO NCSR 12, held from 13 to 22 May 2025, at the IMO Headquarters. The meeting was chaired by Mr. J. Brouwers of the Kingdom of the Netherlands, supported by Vice-Chair Mr. C. Cerda Espejo of Chile. IALA was represented by Omar Frits Eriksson, Minsu Jeon, Alisa Nechyporuk, Stefan Pielmeier and Stefan Bober.

NCSR 12 delivered a comprehensive suite of regulatory and technical frameworks for IALA-related domains: digital communication (VDES, MSI), navigation precision (SBAS/BDS), equipment reliability (software maintenance), and digital chart/data connectivity (ENP, ECDIS S‑100 IP).

# Outcomes of the meeting

**Key points**

* Framework for data distribution and global IP-based connectivity between shore-based facilities and ships for ECDIS S-100 products
* VHF Data Exchange System (VDES)
* Draft IMO position on relevant agenda items of WRC-27
* IMO liaison on revision of Recommendation ITU-R M.1371-1 (AIS)
* Recognition of augmentation systems in the Worldwide Radionavigation System (WWRNS)
* GMDSS services, including guidelines on maritime safety information (MSI)
* Software maintenance of shipboard navigation and communication equipment and systems
* Electronic nautical publications (ENP)
* Digital navigation data system (NAVDAT)

**Framework for data distribution and global IP-based connectivity between shore-based facilities and ships for ECDIS S-100 products**

The Maritime Safety Committee, at its 109th session, agreed on the need to develop a framework for data distribution and IP-based connectivity to fully realise the potential of S-100 capable electronic chart display and information systems (ECDIS) (MSC 109/22, paragraph 19.34.1). The Committee included this work in the 2024-2025 biennial agenda and identified its completion as essential for ensuring the timely implementation of S-100 ECDIS capabilities.

The drat guidance submitted by Australia, New Zealand, the Republic of Korea, Türkiye and the United Arab Emirates (NCSR12/14) aims to establish a framework articulating and addressing the technical, operational, and cybersecurity challenges associated with the transition to S-100 ECDIS. Core technologies such as the Maritime Connectivity Platform (MCP) and the SECOM Protocol are central to this framework.

NCSR 12 advanced guidance on establishing IP-based global connectivity between shore and ships to support ECDIS S‑100 digital chart products (e‑navigation). This work—crucial for IALA’s digital aids to navigation program—is progressing through an intersessional correspondence group ahead of NCSR 13 in June 2026.

The guidance should be technology-neutral as different technologies are capable of supporting the real-time exchange of S-100 data. SECOM and MCP are mentioned in the guidance as examples of such technologies.

To address concerns about overlap between certain S-100 products and MSI disseminated via the GMDSS it, it has been clarified that any information exchanged via IP-based communications, in particular navigational and meteorological warnings and meteorological forecasts, are not part of the GMDSS. The draft guidance takes a goal-based approach and sets quality of service objectives to achieve a secure, standardized and reliable connectivity between shore-based facilities, rather than setting specific criteria for radiocommunication services.

Regarding MCP, NCSR 12 noted that Member States may either operate their own MCP instances or authorize relevant organizations or entities (e.g. IHO, IALA or Regional ENC Coordinating Centres) to manage MCP instances on their behalf to ensure that maritime services are provided by official and authenticated sources.

NCSR 12 discussed that VDES would not be able to meet the requirements outlined in the draft guidance for the distribution and exchange of S-100 data because VDES is not an IP-based communication system.

The Sub-Committee progressed the development of guidance for establishing a framework for data distribution and global IP-based connectivity for shore-based facilities and ships supporting ECDIS S-100 products.  This links to the revised ECDIS Performance Standard MSC.530(106), applying to installations from 1 January 2029 (with dual compliance permitted 2026–2029).

The Sub-Committee established a correspondence group (CG), coordinated by Australia, to continue to progress the work intersessionally and report back to NCSR 13 (June 2026). The CG is tasked to review and further develop the guidance for establishing a framework for data distribution and global IP-based connectivity for shore-based facilities and ships supporting ECDIS S-100 products and to develop a list of elements associated with the implementation of S-100 capable ECDIS.

An interim report should be submitted to the Joint IMO/ITU EG meeting (6 to 12 October 2025) and the final report to NCSR 13.

NCSR 12 encourages all stakeholders, in particular IHO, IALA and IEC, to continue progressing the S-100-related work in their own domains to enable a timely establishment and operation of an S-100 framework for distribution of S-100 data to ships.

**VHF Data Exchange System (VDES)**

The Sub-Committee agreed to draft amendments to Chapter V and the appendix of the International Convention for the Safety of Life at Sea (SOLAS) to introduce the VHF Data Exchange System (VDES) as an alternative shipborne navigational system that meets the current requirements for the Automatic Identification System (AIS), as well as consequential amendments to the 1994 HSC Code and 2000 HSC Code, and associated performance standards and guidelines, to introduce the carriage of VDES. These proposed amendments were submitted to the Maritime Safety Committee (MSC) for approval at its next session (MSC 110), with the goal of adoption at MSC 111 in 2026 and entry into force on 1 January 2028.

In addition, the Sub-Committee agreed to prepare amendments to related instruments, including draft MSC resolutions on Performance Standards for Shipborne VDES and the Introduction of VDES, as well as a draft MSC circular providing Guidelines for the Operational Use of VDES. These documents are also expected to be approved alongside the SOLAS amendments.

In accordance with procedures outlined by MSC 103, the Sub-Committee discussed the most appropriate entry-into-force date for the SOLAS amendments enabling VDES. It concluded that adoption should proceed as soon as possible, emphasising that 1 January 2028 aligns with the standard four-year SOLAS amendment cycle. Delaying VDES implementation to 2030 or later was seen as a significant risk to technological progress in the maritime sector, which is a strategic priority for the Organisation.

Therefore, it was strongly recommended that the Sub-Committee propose these SOLAS amendments and related documents for urgent approval at MSC 110, aiming for formal adoption at MSC 111 and implementation starting 1 January 2028.

To support this work, a correspondence group, including IALA experts, has been established to develop guidelines for shore-based VDES infrastructure, focusing on issues such as resource coordination and data authentication.

**Draft IMO position on relevant agenda items of WRC-27**

NCSR 12 has prepared the draft IMO position for the World Radio Communication Conference 2027 in October/November 2027 (WRC-27). The draft IMO position relates to agenda items 1.2, 1.5, 1.9, 1.11, 1.12, 1.16, 2, 4 and 10 of WRC-27.

With regards to agenda item 1.12 of WRC-27, the NCSR 12 supported the continued allocation of the frequency band 1 645.5-1 646.5 MHz for the mobile-satellite service, in particular to enable its use for distress, safety and communications by the Fleet Safety service and to complement the bands of RR 5.353A.   
With regards to agenda item 10 of WRC-27, the IMO supports the inclusion of item 2.7 on the improvement of the utilisation of VHF maritime radiocommunication in the agenda of WRC-31.

The draft IMO position will be forwarded to MSC 111 for approval and for submission to the ITU-R CPM 27-2. NCSR 13 will submit the final IMO position to MSC 112 (November/December 2026). The Joint IMO/ITU Experts Group is instructed to review the finalised draft IMO position, in particular agenda item 10 of WRC-27, at its next meeting and advise NCSR 13.

**IMO liaison on revision of Recommendation ITU-R M.1371-1 (AIS)**

NCSR 12 has finalised the draft reply liaison statement to ITU-R WP 5B on revision of Recommendation ITU-R M.1371-5. This includes the modification of table A7-8 (Type of ships), the inclusion of a VDES capability indicator in table A7-34 (AIS Message 24, part B) and a clarification of the IMO number contained in table A7-7 (Message 5): "IMO number parameter should be in accordance with the IMO ship identification number scheme adopted by IMO (Resolution A.1117(30)). If the ship does not have an IMO number, an official flag State number should be used."

Regarding the proposed inclusion of a new parameter "crewing status" in Table A7-3 (Messages 1, 2, 3: Position reports), this proposal can only be considered after the adoption of the non-mandatory MASS Code by the Maritime Safety Committee.

Having noted that ITU-R WP 5B had already considered the issue of blocking of the AIS signal reception by the operation of VHF radiotelephony nearby, NCSR 12 saw no need to inform ITU-R WP 5B of this issue again via a liaison statement.

**Recognition of augmentation systems in the Worldwide Radionavigation System (WWRNS)**

The NCSR 12 approved draft amendments to IMO Resolution A.1046(27) on the Worldwide Radionavigation System. The updates introduce procedures and performance standards for GNSS augmentation systems, such as SBAS, DFMC SBAS, and ARAIM, aimed at enhancing safe and precise navigation in sensitive areas, including harbours and coastal waters. The draft amendments include clarifying paragraphs on augmentation systems in the introduction of the resolution’s annex and introduce specific requirements for these systems under the "Operational Requirements" section of the annex.

The draft revised resolution was submitted to MSC 111 for adoption. In addition:

* Performance standards for dual-frequency multi-constellation SBAS and ARAIM will be finalised at NCSR 13 (June 2026).
* Revised BeiDou (BDS) performance standards will apply to equipment installed from 31 July 2028.

NCSR 12 completed a revision of Resolution MSC.379(93) on “Performance Standards for Shipborne BeiDou Satellite Navigation System (BDS) Receiver Equipment” to ensure the standards reflect the current capabilities and performance of the BDS.

**GMDSS services, including guidelines on maritime safety information (MSI)**

As agreed by the IMO, maritime safety information (MSI) must be broadcast via all recognised and operational mobile satellite services (RMSS) by 31 December 2026. Since 1 January 2000, both Inmarsat and Iridium have been recognised for use in the GMDSS.

To support this, NCSR 12 approved draft amendments to SOLAS Regulations IV/5, V/4, and V/5, making it explicitly mandatory to transmit MSI and search and rescue (SAR) information through all operational RMSSs.

In line with these changes, draft revisions to Resolution MSC.509(105)/Rev.1 on “Provision of Radio Services for the GMDSS” were also agreed.

Subject to approval by MSC 110 (June 2025) and adoption by MSC 111 (May 2026), the amendments are set to enter into force on 1 January 2028.

NCSR 12 agreed to task the IMO/ITU Experts Group with initiating discussions on a transition plan for introducing digital technology into very-high frequency (VHF) voice communications. The Group will report its findings and recommendations to NCSR 13. This effort is intended to support the International Telecommunication Union (ITU) in assessing the maritime implications of its regulatory developments. A draft MSC resolution outlining the proposed amendments was submitted to MSC 111 in May 2026 for adoption.

**Software maintenance of shipboard navigation and communication equipment and systems**

The Sub-Committee finalised a new draft MSC circular providing comprehensive procedures for software upkeep, cybersecurity, remote updates, and maintenance protocols for software maintenance of shipboard computer-based navigation and communication equipment and systems. The guidelines aim to improve the efficiency, effectiveness, safety, and security of shipboard software maintenance events by introducing a standardised, controlled, and transparent process. These guidelines are intended to ensure that the software maintenance of shipboard computer-based navigation and communication equipment and systems is carried out in accordance with a controlled and standardized procedure.

The draft MSC circular containing the guidelines was submitted with a view to approval by MSC 111.

**Electronic nautical publications (ENP)**

The Sub-Committee finalised the draft MSC circular on Guidelines on carriage, hardware/software, backup arrangements, power supply for ENPs and use of electronic nautical publications (ENP) system, for approval by MSC 111. The new guidelines aim to promote the effective use of electronic nautical publications, covering aspects such as the general requirements for carriage and operation of ENP on board a vessel, adequate backup arrangements and power supply.

This aligns with SOLAS V/19.2.1.4, V/19.2.1.5 and V/27, which require all ships to carry nautical charts and publications—either in paper or electronic format—with appropriate back-up systems if electronic means are used. These resources must support voyage planning, route display, and position monitoring throughout the voyage.

**Progress on digital navigation data system (NAVDAT)**

The Sub-Committee progressed its work towards introducing NAVDAT – a digital broadcasting system operating on selected medium and high frequency (MF and HF) bands – into the IMO regulatory framework. NAVDAT can communicate texts, images, graphs and data to compatible receiving equipment on ships, at speeds much higher than NAVTEX.

An updated implementation roadmap for the implementation of a digital system to broadcast MSI and SAR data from shore to ships for the NAVDAT service was submitted to the IMO/ITU Experts Group for further review. Additionally, NCSR 12 revised the draft NAVDAT manual and agreed to send it to the IHO and WMO for their input.

# Action requested of the Committee

#### **Note** the information provided.