IMO News Brief
NCSR 12

The 12th session of Sub-committee on Navigation, Communications and Search and Rescue (hereinafter referred to as NCSR) was convened at IMO Headquarters from 13th to 22nd May 2025. This news briefs on the outcomes of NCSR 12 on major technical issues.

1. Developments in GMDSS services, including guidelines on maritime safety information (MSI) (Agenda 5)

1) NAVDAT

A new performance standard for Digital Navigational Data System (NAVDAT) [1] equipment was adopted at the 109th session of the Maritime Safety Committee (MSC 109, Dec. 2024) as Resolution MSC.569(109). The NAVDAT receiver may be recognized as one of the means for receiving maritime safety and search and rescue-related information required under SOLAS regulation IV/7.1.4, in addition to existing equipment such as NAVTEX, EGC, and HF NBDP. However, installation of an NAVDAT receiver is not mandatory.

At NCSR 12, discussions were held regarding the introduction and implementation of NAVDAT. The Sub-Committee agreed that, when establishing a NAVDAT broadcast station, formally agreement should be reached on the transmission range and service area in consultation with the NAVDAT administration and the relevant NAV/METAREA Coordinator. The first NAVDAT broadcast is scheduled to take place in July 2025 from Ouessant and La Garde, France, during which the performance and impact of NAVDAT on existing MSI broadcasts will be assessed.

The Sub-Committee reviewed the progress made on the revised road map regarding the implementation of the NAVDAT service and agreed to rename the existing 'IMO NAVTEX Coordinating Panel[2]' to the 'IMO Terrestrial Broadcast Services Coordinating Panel'. The Sub-Committee also finalized the draft MSC circular containing the terms of reference for the new panel, including procedures for the authorization, certification of allocation, and amendment process for terrestrial broadcast service providers. The draft circular is expected to be submitted to the Committee for approval at MSC 111 (May 2026).

2) Amendments to SOLAS Chapters IV (Radiocommunications) and V (Safety of Navigation)

At its 12th session, the Sub-Committee finalized draft amendments to clarify the requirement that maritime safety information (MSI) and search and rescue (SAR) related information should be disseminated via all operating Recognized Mobile Satellite Services (RMSS)[3]. The following amendments were prepared:

- Draft amendments to **regulation IV/5 of the SOLAS Convention** (Provision of radiocommunication services);
- Consequential amendments to **regulations V/4 (Navigational warnings)** and **V/5 (Meteorological services and warnings)** of the SOLAS Convention; and
- Draft amendments to **resolution MSC.509(105)/Rev.1** on Provision of Radio Service for the GMDSS.

In accordance with the decision of MSC 108 that the dissemination of MSI via all operating recognized

[1] **The Digital Navigational Data System (NAVDAT)** is equipment designed to receive maritime safety information and search and rescue-related data using medium frequency (500 kHz) and high frequency (4,226 kHz) bands.
[2] **IMO NAVTEX Coordinating Panel**: The IMO NAVTEX Coordinating Panel manages the broadcast schedule and frequency coordination of NAVTEX transmissions to ensure the safe and efficient dissemination of maritime safety information (MSI). The Panel is also responsible for overseeing the management of MSI distribution and ensuring compliance with relevant technical standards.
[3] **RMSS (Recognized Mobile Satellite Service):** Refers to satellite services recognized by the IMO as capable of providing GMDSS services, such as Inmarsat and Iridium.

mobile satellite services (RMSS) should be implemented by 31 December 2026, the Sub-Committee agreed that the associated draft amendments should be submitted to MSC 110 (June 2025) as an urgent matter, with a view to adoption at MSC 111 (May 2026) and entry into force on 1 January 2028.

2. Development of procedures and requirements for the recognition of augmentation systems in the Worldwide Radionavigation System (Agenda 8)

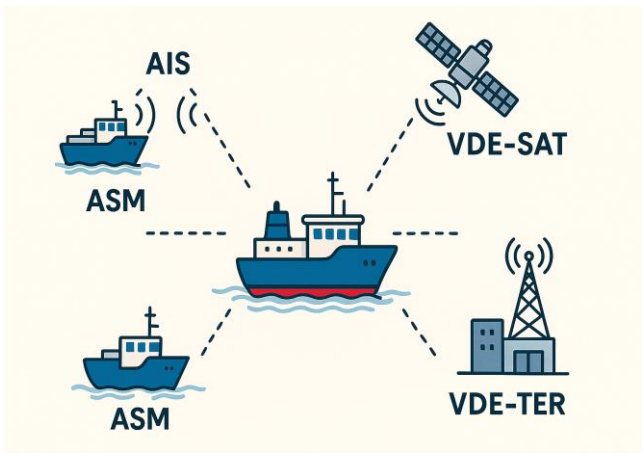
The Sub-Committee, at its 12th session, considered document NCSR 12/8, which aimed to establish procedures and requirements for recognizing augmentation systems as part of the Worldwide Radionavigation System (WWRNS)[4]. This work follows the task endorsed at MSC 107, where the development of such procedures was agreed in support of future performance standard development for augmentation systems.

While global navigation satellite systems (GNSS) serve as a primary source of positioning, navigation, and timing (PNT) information in the maritime domain, the Sub-Committee acknowledged that standalone GNSS may not fully meet the accuracy, integrity, and continuity requirements for operations such as port approach and coastal navigation. As such, augmentation systems like SBAS[5]and RAIM[6] are increasingly utilized. However, a formal recognition framework at the IMO level was lacking.

Accordingly, the Group developed a draft MSC resolution to revise the annex to Assembly resolution A.1046(27)(WORLDWIDE RADIONAVIGATION SYSTEM) to include relevant procedures and operational requirements for augmentation systems. This revised annex is expected to replace the current one and is scheduled for adoption at MSC 111.

In addition, the Sub-Committee agreed to recommend initiating a new output at NCSR 13 for the development of performance standards for dual-frequency, multi-constellation satellite-based augmentation systems (DFMC SBAS) and Advanced Receiver Autonomous Integrity Monitoring (ARAIM), based on the newly developed procedures and requirements.

3. Development of amendments to SOLAS chapters IV and V and performance standards and guidelines to introduce VHF data exchange system (VDES) (Agenda 9)



[4] **WWRNS (Worldwide Radionavigation System)**: A global system composed of one or more radionavigation systems recognized by the IMO, enabling ships to reliably obtain positioning, navigation, and timing (PNT) information during international voyages.
[5] **SBAS (Satellite-Based Augmentation System)**: An augmentation system that improves the accuracy, integrity, availability, and continuity of existing GNSS (e.g., GPS) signals by transmitting correction data calculated by ground stations via geostationary satellites to users.
[6] **RAIM (Receiver Autonomous Integrity Monitoring)**: A function within a GNSS receiver that autonomously analyzes the received satellite signals to detect errors and monitor the integrity of the positioning data.

At MSC 103 (May 2021), it was decided to consider recognizing VDES[7] (VHF Data Exchange System) as a carriage requirement under both SOLAS chapter IV (Radiocommunications) and chapter V (Safety of Navigation), and to initiate the development of performance standards for VDES. At NCSR 10 (May 2023), it was agreed that a SOLAS amendment should take precedence in order for VDES to be recognized as a replacement for AIS (Automatic Identification System).

The outcome of discussions at NCSR 10 confirmed that the recognition of VDES as a replacement for AIS requires the prior amendment of SOLAS. It was also agreed that the introduction of VDES as a new GMDSS (Global Maritime Distress and Safety System) equipment for the transmission and reception of Maritime Safety Information (MSI) requires a cautious approach. Furthermore, it was acknowledged that technical, regulatory, and operational analyses of VDES must comprehensively address all communication components, including AIS, ASM (Application Specific Messages), VDE-TER (VDES Terrestrial), and VDE-SAT (VDES Satellite).

At NCSR 11 (June 2024), it was agreed that the installation of VDES would not be mandatory. Although discussions were planned on the proposed amendments to SOLAS chapter V, the draft performance standards for VDES, and operational guidelines for VDES, due to time constraints, these matters were deferred for intersessional consideration by a correspondence group, with the aim of finalizing them at NCSR 12 (May 2025).

During NCSR 12, in order to recognize VDES as a viable replacement for AIS, the following items were reviewed alongside the proposed amendments to SOLAS chapter V:

- Draft amendments and related certification for SOLAS regulation V/18 (Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder), regulation V/19 (Carriage requirements for shipborne navigational systems and equipment), and regulation V/19-1 (Long-Range Identification and Tracking – LRIT);
- Draft amendments and related certification for regulation 13.15 of the 1994, 2000 High-Speed Craft (HSC) Code;
- Draft performance standards for VDES;
- Draft operational guidelines for VDES;
- A draft new MSC resolution on the introduction of VDES within the IMO framework.

The proposed amendments related to VDES are scheduled for urgent approval at MSC 110 (June 2025), in view of issues such as the need to prevent frequency reallocation, counter AIS spoofing, and ensure the availability of an S-100-based backup capability. The amendments are expected to be adopted at MSC 111 (May 2026) and enter into force on 1 January 2028.

4. Development of guidelines for software maintenance of shipboard navigation and communication equipment and systems (Agenda 10)

At MSC 107 (June 2023), the need to develop requirements for software maintenance of navigation and communication equipment and systems regulated under SOLAS chapters IV (Radiocommunications) and V (Safety of Navigation) was raised. It was agreed that the matter would initially be addressed through the development of non-mandatory guidelines, which may subsequently evolve into mandatory requirements. Accordingly, a draft set of guidelines was proposed with the aim of enhancing operational efficiency, safety, cybersecurity, and regulatory compliance through standardized procedures for software maintenance.

The key elements of the guidelines include:

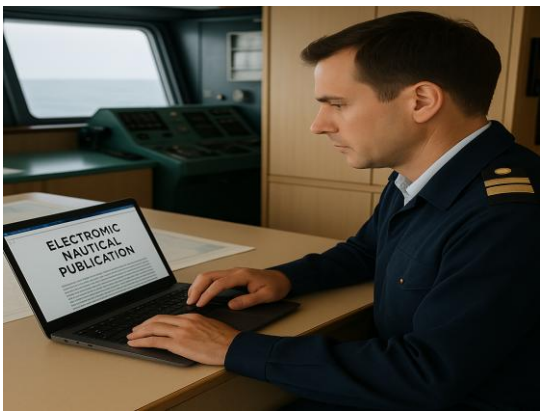
- Maintenance performed by Certified Providers and/or Certified Service Technicians,;
- Establishment of maintenance plans and documentation of procedures;
- Cybersecurity measures;
- Use of electronic reports and onboard software logs; and
- Training and certification of service personnel by equipment manufacturers,
- Remote maintenance.

7 The VHF Data Exchange System (VDES) is an integrated system designed for digital data communication, combining the Automatic Identification System (AIS), Application Specific Messages (ASM), the terrestrial component of VHF Data Exchange (VDE-TER), and the satellite component of VHF Data Exchange (VDE-SAT).

At NCSR 12 (May 2025), the Sub-Committee finalized the draft “Guidelines on Software Maintenance for Shipborne Computer-Based Navigation and Communication Equipment” by incorporating the term “computer-based” in the title and relevant sections of the text. To improve clarity of terminology, the guideline distinguished between “Contracted Service Providers” and “Certified Service Technicians,” and elaborated on procedures for planning, executing, certifying, and recording maintenance. It also defined the scope of crew involvement to minimize administrative burdens on seafarers.

As a non-mandatory document, the finalized guidelines are scheduled to be submitted to MSC 111 (May 2026) in the form of an MSC circular.

5. Development of guidelines for the use of electronic nautical publications (ENP) (Agenda 12)



In accordance with SOLAS regulations V/19.2.1.4 and V/27 all ships shall have nautical charts and nautical publications, as defined in SOLAS regulation V/2.2, to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. SOLAS regulation V/19.2.1.5 allows electronic means to partly or fully fulfil the functional requirements of SOLAS regulation V/19.2.1.4, provided that there are appropriate back-up arrangements. However, a unified guideline had not been established at the IMO level, and only limited guidance had been issued by some national hydrographic offices.

At NCSR 12 (May 2025), based on the report of the correspondence group, the Sub-Committee reviewed the installation and operational requirements, inspection procedures, and record keeping related to the use of ENPs.[8] During the discussions, concerns were raised that the inclusion of certification and inspection-related provisions in the guidelines could impart legal force to what is intended to be a non-mandatory instrument. As a result, it was decided to remove such provisions from the guidelines.

Key contents of Guidelines

- (**Purpose**)
  This document provides guidelines for the carriage and use of ENP system on board in order to unify the implementation of SOLAS regulations V/19.2.1.4, V/19.2.1.5 and V/27. If the contents of nautical publications are provided by the ship's Electronic Chart Display and Information Systems (hereinafter referred to as ECDIS), this document should not apply to such ECDIS equipment and does not override any ECDIS performance standards requirements.

- **(Definitions)**
  ENP system means a system and equipment, including hardware, software, and the ENP, on which electronic nautical publications are installed, displayed, accessed and updated.

- **(Hardware and software)**
  Type approval for the ENP system is not required, however, ENP system should not interfere with the operation of other navigation and radiocommunication equipment and electromagnetic compatibility with other systems should be taken into account

- **(Power supply)**
  The power should be supplied from the ship's main source of electrical power and also emergency source of electrical power. However, if the ENP system has a built-in battery for portable devices,

[8] **Electronic Nautical Publications (ENP):** An ENP is a digital version of traditional paper nautical publications, providing essential navigational information such as tide tables, port information, and lists of lights in electronic format. ENPs support safe navigation by offering advance information about the areas a ship is expected to enter or transit.

it is sufficient for the charging facilities to be supplied from both the ship's main source of electrical power and the emergency source of electrical power. The installation and use of an uninterruptible power supply (UPS) is recommended,

- **(Location of use)**
  The ENP system should be installed on or near the navigation bridge to ensure accessibility for the master and officers of the watch during navigation.

- **(Back-up arrangement)**
  An appropriate back-up arrangement should be provided for the ENP system. This may consist of a secondary ENP system or official hard copies of nautical publications. The back-up arrangement should meet the requirements set out in these guidelines.

- **(Update)**
  ENPs should be kept up to date at all times, and update records should be maintained onboard

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- **(System malfunctions)**
  The ship should have procedures in place for troubleshooting and restoring the ENP system in the event of a malfunction.

- **(Familiarization)**
  Crew should be familiarized with the guidelines and user manuals related to the ENP system.

- **(Cyber risk management)**
  Cyber risk management procedures should be implemented to protect the ENP system from cyber threats, and functionality should be provided to verify the authenticity of ENP data.

6. Revision of the Performance Standards for Shipborne BeiDou Satellite Navigation System (BDS) Receiver Equipment (resolution MSC.379(93)) (Agenda 13)

In 2020, BDS[9] was formally commissioned and has since maintained stable operation for four years. The BDS space segment, consisting of a hybrid constellation of satellites in three types of orbits, delivers strong performance particularly in low-latitude areas due to its higher number of satellites in high orbits, offering better anti-shielding capabilities. BDS provides multi-frequency navigation signals globally, including near-earth areas up to 1,000 kilometers, with enhanced service accuracy through signal combination. However, the current performance standards do not reflect these advancements, as they are based on the technological level prior to BDS deployment. Updating the performance standards is essential to enable the maritime industry to utilize improved BDS services and to support updates to the related IEC test standards.

Accordingly, China submitted document NCSR 12/13, proposing a revision of the existing performance standards to reflect the technological advancements of BDS, including the addition of signal frequencies and improvements in accuracy and sensitivity. The revised performance standards are expected to be adopted at MSC 111 (May 2026) and will apply to BDS receiver equipment installed on or after 31 July 2028.

[9] **BDS (BeiDou Satellite Navigation System):** BDS is a global navigation satellite system (GNSS) independently developed by China. It consists of satellites in Medium Earth Orbit (MEO), Inclined Geostationary Orbit (IGSO), and Geostationary Orbit (GEO), providing Positioning, Navigation, and Timing (PNT) services to users worldwide. In the maritime domain, BDS supports precise positioning using both single- and dual-frequency signals.

7. Development of guidance to establish a framework for data distribution and global IP-based connectivity between shore-based facilities and ships for ECDIS S-100 products (Agenda 14)

At MSC 109 (December 2024), the Committee approved the need to develop an Internet Protocol (IP)-based data connectivity and distribution framework to support the effective transition to S-100-based ECDIS[10]. This task was included in the 2024–2025 work programme of the NCSR Sub-Committee (ref. MSC 109/22).

To facilitate the implementation of S-100-based ECDIS, the agenda item proposes guidelines for establishing a global IP-based connectivity framework enabling real-time maritime data exchange between shore facilities and ships. This framework aims to ensure the secure and efficient distribution of various S-100 products—including navigational warnings, weather forecasts, and route plans—thus enhancing navigational safety and operational efficiency.

The proposed framework utilizes SECOM (Secure Communication between ship and shore) and the Maritime Connectivity Platform (MCP) as core technologies to ensure secure, interoperable service discovery, authentication, and real-time data exchange. It also requires compliance with international cybersecurity standards, including the use of digital signatures and certificate-based authentication.

At NCSR 12, the draft guidelines for real-time data distribution and IP-based connectivity for S-100-based ECDIS products were reviewed. To avoid confusion with GMDSS Maritime Safety Information (MSI), the Sub-Committee clarified that certain S-100 data types, such as navigational and meteorological warnings, are not part of the GMDSS MSI. It was further noted that the MCP can be operated by a national authority or recognized organization (e.g. IHO, IALA), and that VDES, being non-IP based, does not meet the requirements of this global framework and is therefore not covered by these guidelines.

The guidelines have not yet been finalized. A Correspondence Group will be established to continue intersessional discussions, with an interim report to be submitted to the IMO/ITU Experts Group in October 2025, and a report to be submitted at NCSR 13 in June 2026.

8. Biennial status report and provisional agenda for NCSR 13 (Agenda 17)

The NCSR Sub-Committee was established in 2014 through the merger of the former NAV and COMSAR Sub-Committees, initially operating on a 5-day annual meeting schedule. Due to an increasing workload, the session length was extended to 8 days starting in 2018. However, the IMO is currently pursuing a plan to reduce the NCSR session back to 5 days, taking into account factors such as the efficient use of budget and personnel, maintaining consistency with other Sub-Committees, reducing the administrative burden on the Secretariat, and improving accessibility for smaller Member States.

In response, the NCSR Sub-Committee has reviewed various measures to manage its workload under the shortened session, including streamlining report drafting, encouraging concise document submissions, expanding the use of intersessional Correspondence Groups, and strengthening cooperation with international organizations. The outcome of this review is expected to be reported to MSC 110, scheduled to be held in June 2025.

[10] **S-100-based ECDIS (Electronic Chart Display and Information System):** An ECDIS developed based on the S-100 standard, the next-generation hydrographic data framework established by the International Hydrographic Organization (IHO). Compared to the existing S-57-based ECDIS, the S-100-based system offers enhanced scalability and interoperability, allowing for the integration and display of various types of data beyond ENC, such as tidal and current information, marine weather, and Maritime Safety Information (MSI). In accordance with IMO resolution MSC.530(106)/Rev.1, voluntary installation of S-100 ECDIS is permitted from 2026, and all ECDIS installed on or after 1 January 2029 must comply with S-100-based requirements.

Should you have inquiries, please contact P.I.C. Thank you.

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