# Brief: NCSR 13

Session Dates: 22 June - 26 June 2026

## OVERVIEW

The IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) held its latest session, making substantive progress across a broad range of maritime safety, security, and operational regulatory areas. The key milestones of this session were the finalization of draft MSC circulars providing guidance on global IP-based data exchange and secure connectivity for S-100 ECDIS products, the finalization of a draft MSC circular on the transition scheme for digital Very High Frequency (VHF) voice communications, and the finalization of draft amendments to introduce the two-way communication capability as an optional feature for EPIRBs.

This Brief provides an overview of the more significant issues progressed at this session.

# KEY TAKEAWAYS

1. **Routeing Measures and Ship Reporting Systems:** Finalized draft amendments for both the European ship reporting systems and the United States routeing measures that will be submitted to MSC 112 (December 2026) for adoption. These draft amendments will be officially implemented six months after their adoption.
2. **ECDIS S-100:** Finalization of draft MSC circulars on global IP-based data exchange and secure connectivity for S-100 ECDIS products, as well as operational guidance for route exchange. The circulars will be submitted to MSC 112 (December 2026) for approval.
3. **Transitional Scheme for the Digital VHF Voice Communication:** Finalization of the draft MSC circular on the transition scheme for digital Very High Frequency (VHF) voice communications, retaining some existing analogue VHF channels to ensure the continuity of vital GMDSS distress. The circular will be submitted to MSC 112 (December 2026) for approval.
4. **Two-Way Communication as a Complement to EPIRB:** Draft amendments were finalized to introduce the Galileo Return Link Service two-way communication capability as an optional feature for 406 MHz float-free EPIRBs. The enhancement will allow distress alerts to be acknowledged and enable predefined message exchanges between rescue coordination centers and persons in distress. The draft revision of resolution MSC.471(101) will be submitted to MSC 112 (December 2026) for adoption.
5. **Developments in GMDSS:** NCSR 13 advanced the implementation of NAVDAT, the next-generation digital broadcasting system intended to complement NAVTEX by enabling transmission of text, images, S-100 products and other digital data. The Sub-Committee updated the roadmap for NAVDAT deployment and identified a series of technical, operational and regulatory actions that must be completed before implementation. This demonstrates IMO's continued transition toward a more digital and data-rich GMDSS environment.
6. **Search and Rescue:** Progress was made on amendments to the 2028 edition of the IAMSAR Manual, including guidance related to emergency psychology, Radar SART, Ship Security Alert Systems, submarines and submersible crafts. The Sub-Committee also took steps to improve the quality and maintenance of Global SAR Plan information within GISIS. These developments will strengthen SAR coordination, operational readiness and the integration of emerging maritime activities into the global SAR framework.
7. **Satellite Communications and Navigation:** NCSR 13 continued work on next-generation satellite-enabled navigation and communication capabilities, including development of performance standards for DFMC SBAS and ARAIM technologies and introduction of Galileo-enabled EPIRB return-link services. Together with ongoing enhancements to recognized mobile satellite services under the GMDSS, these developments support improved positioning integrity, navigation resilience and emergency communications while maintaining technology neutrality and compatibility with the Worldwide Radionavigation System.
8. **Gyro-Compass:** The Sub-Committee concluded that existing IMO gyro-compass standards remain fit-for-purpose for conventional mechanical equipment and that no evidence currently justifies revising the long-standing performance standard. However, regulatory gaps associated with newer technologies, particularly fiber-optic gyro-compasses and high-latitude operations, were recognized. Rather than modifying existing requirements, IMO is expected to consider development of a new standalone standard for fiber-optic gyro-compass technology, ensuring innovation can be accommodated without affecting existing installations.

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## NAVIGATION

### Routeing Measures and Ship Reporting Systems

The Sub-Committee considered proposals under SOLAS Chapter V relating to ship routeing measures and mandatory reporting schemes, including amendments to existing IMO-adopted systems and the increased use of digital reporting platforms, such as SafeSeaNet.

**Key points**

- **European ship reporting systems**
  - Electronic reporting via the SafeSeaNet web interface will become the primary reporting method, significantly reducing VHF voice congestion.
  - Introduction of mandatory reporting of insurance certificates (1992 CLC, 2001 Bunkers, 2007 WRC), only if the flag State is a Party to those specific Conventions.
  - Expansion of reporting scope beyond navigational safety into compliance.

- **United States routeing measures**
  - Introduction or amendment of Traffic Separation Schemes (TSS).
  - New and expanded precautionary areas linked to offshore energy activity to prevent new offshore energy structures from obstructing traditional navigation routes ("Fairways").
  - Measures primarily technical in nature, aimed at maintaining navigational safety.

| System | Key Change |
|---|---|
| **BONIFREP** (Strait of Bonifacio) | SafeSeaNet e-reporting; new designators G, I, T, W, X incl. insurance certs; VHF voice limited to entry confirmation |
| **WETREP** (Western European PSSA) | SafeSeaNet primary; insurance certs under designator "X"; telex discontinued |
| **CALDOVREP** (Dover Strait / Pas De Calais) | Insurance certs under designator "X" via SafeSeaNet; rename DOVER COASTGUARD → Channel VTS |
| **TSS Off Delaware Bay** | Extend approaches ~12–16 NM offshore; three new precautionary areas (~29, 79, 314 sq NM); WGS 84 |
| **TSS Off New York** | Two new precautionary areas (~197 and ~146 sq NM) at offshore termini; shorten existing lanes; WGS 84 |
| **TSS in the approaches of Cape Fear River** | New precautionary area (~75 sq NM) at offshore terminus; WGS 84 |
| **TSS in the approaches of Chesapeake Bay** | New precautionary area (~22 × 5 NM) connecting eastern/southern approaches; WGS 84 |

**Next steps:** The finalized draft amendments for both the European reporting systems and the United States routeing measures will be submitted to MSC 112 (December 2026) for adoption. These amendments will be officially implemented six months after their adoption.

### Development of Performance Standards for Dual Frequency Multi-Constellation Satellite-Based Augmentation Systems (DFMC SBAS) and Advanced Receiver Autonomous Integrity Monitoring (ARAIM) in Shipborne Radionavigation Receivers

MSC 107 agreed to develop minimum performance standards for shipborne receivers supporting Dual Frequency Multi-Constellation Satellite-Based Augmentation Systems (DFMC SBAS) and Advanced Receiver Autonomous Integrity Monitoring (ARAIM), aligning with Resolution MSC.401(95) on improving navigational accuracy and integrity in harbor approaches and coastal waters. NCSR 12 established a Correspondence Group to begin the work, and the Sub-Committee considered its report at this session.

**Agreed Definitions:**

- DFMC SBAS - provides orbit and clock corrections, as well as integrity information, for dual-frequency, ionosphere-free pseudo-range measurements to support GNSS and/or RNSS positioning with enhanced accuracy, integrity, availability and continuity.
- ARAIM - GNSS and/or RNSS integrity function whereby a suitably equipped maritime receiver uses redundant satellite pseudo-range measurements from one or more WWRNS-recognized satellite constellations, together with an externally provided integrity support message (ISM), to autonomously detect and exclude faulty signals and to compute protection levels that bound position error with a defined probability.

The explanatory text on single/dual-frequency operation and ISM characteristics of the ARAIM was agreed to be useful for the development of draft performance standards and agreed to be retained as a footnote. The Functional Requirements covering accuracy, integrity, availability, continuity, and functionality were flagged as too prescriptive and considered to require further refinement.

**Agreed Wider Principles:**

- Technology neutrality
- Interoperability
- Scalability and adaptability
- Risk-informed design methodology

These principles were intended to ensure the standards remained goal-based and did not inadvertently favour specific system architectures or service providers.

> **Next steps:** The Sub-Committee agreed to re-establish the Correspondence Group to further develop and finalize the draft performance standards ensuring they remain goal-based and technology-neutral, and to report back to NCSR 14 (Spring 2027).

### Revision of Performance Standards for Gyro-Compasses (Resolution A.424(XI)) and Guidance for Navigation and Communication Equipment Intended for Use on Ships Operating in Polar Waters (MSC.1/Circ.1612)

The Sub-Committee initiated work to revise performance standards for gyro-compasses (resolution A.424(XI)) and related navigation systems, including consideration of polar operations (MSC.1/Circ.1612). Previously, IMO conducted a gap analysis and identified the following potential regulatory gaps in resolution A.424(XI) and circular MSC.1/Circ.1612:

1. Lack of performance standards fully applicable in high latitude waters (60° to 80°), including polar waters and non-polar waters
2. Vague meaning and inconsistent implementation of additional validation of gyro-compasses
3. Need for integration of technological and digital advancements
4. References to obsolete equipment and general editorial alignment

Crucially, it was concluded at this session that there have been no reports of significant problems or incidents in high-latitude waters caused by mechanical gyro-compasses complying with the existing resolution A.424(XI). Because the current equipment works well and has operated effectively as a technology-neutral minimum standard for many years, it was agreed that there is no compelling need to amend resolution A.424(XI).

To address the identified gaps specifically for newer technologies without impacting existing mechanical equipment, the Sub-Committee agreed that the appropriate way forward is the development of a new, standalone performance standard specifically for fiber optic gyro-compasses, accompanied by necessary amendments to SOLAS regulations V/18 and V/19. This approach will separate the requirements for fiber optic gyro-compasses from conventional mechanical units, ensuring existing equipment is not subjected to unintended non-compliance issues.

**Next steps:** Because developing a new standalone standard falls outside the originally approved work plan, the Sub-Committee cannot proceed without further authorization. Therefore, interested Member States are invited to submit a new proposal to the MSC to expand the scope and officially allow the development of this new standard.

### Development of Performance Standards for Ranging Mode (R-mode) in Radionavigation Receivers

MSC 110 agreed to develop performance standards for Ranging mode (R-mode) in radionavigation receivers and to consider any necessary amendments to resolution A.1046(27) concerning the use of R-mode as part of the Worldwide Radionavigation System (WWRNS). R-mode represents a terrestrial (shore-based) radionavigation system that provides positioning, navigation, and timing data independently from satellite systems like GNSS. This technology is being developed as a resilient backup to address the increasing vulnerabilities of GNSS to interference, jamming, and spoofing worldwide.

At this session, the Sub-Committee finalized the draft performance standards for shipborne R-mode receiver equipment. Key outcomes of this discussion include:

- **Voluntary Backup System**: It was agreed that R-mode should be considered as a voluntary, complementary backup system supplementary to GNSS, rather than an independent standalone system.
- **No IMO Recognition Needed**: Because it is a terrestrial backup system intended to enhance navigational resilience, it was concluded that formal recognition of R-mode by the IMO is not necessary.
- **Equipment Standards**: The finalized standards ensure R-mode receivers can process Medium Frequency (MF) and Very High Frequency (VHF) signals and provide reliable warnings (within 5 seconds of loss of position or if a new position has not been calculated for more than 2 seconds). The standards focus solely on R-mode functionality, though they recognize these receivers will likely be combined with other radionavigation systems on board.

**Next steps:** The draft performance standards for shipborne R-mode receiver equipment will be submitted to the MSC for adoption. The Sub-Committee also agreed that the amendments to A.1046(27) and MSC.599(111) were premature at this stage and invites interested Member States to submit proposals for a new output to the MSC.

## COMMUNICATIONS

### Development in GMDSS Services, Including Guidelines on Maritime Safety Information (MSI)

The Sub-Committee considered developments in the Global Maritime Distress and Safety System (GMDSS) services under SOLAS Chapter IV, including the performance of recognized mobile satellite services and the dissemination of Maritime Safety Information (MSI). The most notable discussions involved the ongoing introduction of the Digital Navigational Data System (NAVDAT)—a digital broadcasting system capable of transmitting texts, S-100 data products, images, and data files to ships—as a modern, high-bandwidth complement to the existing NAVTEX system.

At this session, the Sub-Committee agreed to update the roadmap regarding the introduction of the NAVDAT service into the GMDSS, noting that it would remain as a living document and may be further updated in the future based on new developments. The table below provides an overview of the necessary actions to enable the successful deployment and implementation of the NAVDAT service.

| Action Items | |
|---|---|
| 1 | approval of the IEC test and certification standards for NAVDAT shipborne equipment |
| 2 | manufacturing of the NAVDAT shipborne equipment |
| 3 | field trials and testing of the NAVDAT service implementation |
| 4 | establishment of NAVDAT coast stations |
| 5 | revision of the GMDSS Master Plan module of GISIS to accommodate NAVDAT services |

| Action Items | |
|---|---|
| 6 | approval of the MSC circular on IMO Terrestrial Broadcast Services |
| 7 | coordination of a panel for review of the NAVTEX Manual and subsequent revision |
| 8 | approval of the NAVDAT Manual |
| 9 | revision of MSC.1/Circ.1645 on Guidance for the reception of maritime safety information and search and rescue related information as required in the Global Maritime Distress and Safety System (GMDSS) |

**Next steps:** Matters related to NAVDAT manual and other related implementation steps will continue intersessionally, with a view to finalization at NCSR 14 (Spring 2027).

### 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 (2.12) and Operational Guidance for Route Exchange

Under resolution MSC.530(106)/Rev.1, S-100 capable electronic chart display and information systems (ECDIS) may be installed on a voluntary basis from 1 January 2026 and will become mandatory for all new installations from 1 January 2029. To support the transition to new S-100 products, the IMO has recognised the need for a robust framework enabling secure and standardised IP-based data exchange between shore-based facilities and ships. This framework allows for the real-time integration of hydrographic, environmental and navigational safety information, enhancing situational awareness and supporting improved operational efficiency.

Based on previous technical work, the Sub-Committee finalized two draft MSC circulars outlining the new digital framework:

- **Framework for data distribution (IP-based connectivity):** This circular provides goal-based guidance on establishing secure, global IP-based connectivity for S-100 products. The guidance also emphasizes the necessity of cybersecurity measures, including network separation, to protect onboard systems from external threats. It was clarified that there are currently no mandatory carriage requirements for ships to have IP-based connectivity or continuous internet access.
- **Operational Guidance for digital route exchange:** This circular promotes the safe and efficient sharing of route plans between ships and shore-based services. It is noted that digital route exchange is entirely voluntary and does not replace mandatory reporting requirements.

Moreover, the Sub-Committee reviewed a list of identified elements associated with the implementation of S-100 capable ECDIS and the associated high-level summary of elements and agreed that further work should be undertaken at a later stage under a new output. Therefore, interested Member States were invited to submit proposals to future MSC sessions.

**Next steps:** The two agreed draft circulars will be submitted to MSC 112 (December 2026) for approval.

### Development of a Transition Scheme for the Introduction of Digital Technology for Very High Frequency (VHF) Voice Communications

The increasing reduction in the availability of voice channels in the VHF maritime mobile frequency band has led to congestion problems in recent years, particularly in densely populated maritime areas. Therefore, MSC 109 agreed to include an output on the development of a transition scheme for the introduction of digital technology for Very High Frequency (VHF) voice communications, with a target completion year of 2027.

At this session, the Sub-Committee finalized the draft MSC circular detailing the transition scheme for the introduction of digital VHF voice communications agreeing on the following key principles:

- Retaining existing analogue VHF channels 06, 13, 16, 75 and 76 and the existing assignments of channels 70 (DSC), AIS 1 (AIS-SART) and AIS 2 (AIS-SART) even after transition to digital technology for VHF voice communications to ensure the continuity of vital GMDSS distress, urgency, and safety communications.

- Identification of additional digital VHF channels within RR Appendix 18 in the existing frequency band allocated to the maritime mobile service.
- Keeping the financial burden on ships and shore-based authorities to a minimum during the implementation process.

**Next Steps:** The agreed draft circular will be submitted to MSC 112 (December 2026) for approval.

### Development of Guidelines for EPIRB which Implement the Two-Way Communication Service via the SAR/Galileo Return Link service as a Complement to EPIRB Performance Standards (Resolution MSC.471(101))

The Sub-Committee finalized draft amendments to resolution MSC.471(101) to introduce Two-Way Communication (TWC) via the Galileo Return Link Service as an optional feature for float-free 406 MHz EPIRBs. TWC enables the confirmation of distress alert receipt and the bi-directional exchange of predefined messages between the Rescue Coordination Centres (RCC) and the casualty.

Key decisions at this session:

- **Operational Guidelines:** Agreed that the development of guidelines for the operational use of TWC-equipped EPIRBs should continue through the ICAO/IMO Joint Working Group (JWG 33) to ensure input from both aeronautical and maritime experts.
- **Human Element and Training**: Concurred that human element and training aspects are crucial but should not be included in equipment performance standards. Instead, these aspects should be addressed by Member States, training institutions, and the Sub-Committee on Human Element, Training and Watchkeeping (HTW).

**Next Steps:** The draft revision of resolution MSC.471(101) will be submitted to MSC 112 (December 2026) for adoption. The MSC will also be invited to inform the HTW Sub-Committee of the revised resolution, once adopted, so HTW can take appropriate action on seafarer training aspects. JWG 33 will consider the development of guidelines for the operational use of TWC EPIRBs.

## SEARCH AND RESCUE

### Development of Global Maritime Search and Rescue (SAR) Services, including Harmonization of Maritime and Aeronautical Procedures and Amendments to the IAMSAR Manual

The Sub-Committee progressed amendments to the IAMSAR Manual for the 2028 edition, based on the outcomes of the 32nd ICAO/IMO Joint Working Group (JWG 32) on Harmonization of Aeronautical and Maritime Search and Rescue. The Manual remains a key IMO/ICAO reference and is a mandatory carriage document under SOLAS. More specifically, the IAMSAR Manual Volume III is a surveyable item, and ships are required to carry the latest edition on board. The current 2025 edition of the IAMSAR Manual is effective from 1 January 2026.

Key decisions at this session:

- **IAMSAR Manual Amendments:** Progressed draft amendments for the 2028 edition across Volumes I, II, and III (Radar SART, psychology of emergency, activation points of the Ship Security Alert System (SSAM) in accordance with SOLAS Chapter XI-2).
- **Submersible Craft and Submarines:** Agreed to update Volumes II and III with guidance on submarine rescue and submersible craft. It has been clarified that it is not the role of Rescue Coordination Centres (RCCs) to monitor submarine operations and noted that the RCC's exact role in coordinating underwater SAR responses might vary depending on national policy decisions.
- **Global SAR Plan / GISIS:** To improve data provision by Member States, the group agreed to better publicize existing guidance (COMSAR.1/Circ.61) and implement automated system notifications to prompt authorities to periodically verify their information.
- **RCC Documentation:** Finalized the draft revised circular SAR.7/Circ.17, which updates the minimum list of documents and publications that should be held by a maritime or joint rescue coordination centre.

**Next Steps:** Draft amendments to IAMSAR will be further developed through JWG 33 ahead of finalisation and incorporation into the 2028 IAMSAR Manual. Following the approval of revised circular SAR.7/Circ.17, MSC 112 (December 2026) will be invited to endorse this action.

## OTHER DEVELOPMENTS

### Revision of Navigational Symbols and Terminology Standards

A proposal was submitted to update SN.1/Circ.243/Rev.2 (Guidelines for the presentation of navigational-related symbols, terms and abbreviations) to reflect recent developments within the IEC 62288 series of standards governing the presentation of navigational information on bridge equipment.

Discussion focused on:

- Whether the proposed revisions could be treated as minor corrections under the existing work programme;
- Potential implications for existing bridge equipment and display systems;
- Training and familiarization requirements for bridge teams;
- Possible impacts on related IMO performance standards, including radar requirements and equipment certification processes;
- The need to avoid unnecessary recertification of existing equipment while maintaining harmonization between IMO and IEC standards.

The Sub-Committee agreed that the revision of SN.1/Circ.243/Rev.2 did not constitute a minor correction or update because further technical consideration including assessment of implementation and any consequential amendments that may be required to associated IMO instruments were needed. Subsequently, interested Member States and international organizations were invited to consider submitting a proposal for a new output to the Committee. Updates to standard navigation symbology can improve consistency across bridge equipment but must be carefully managed to avoid unnecessary recertification burdens and training challenges.

### Bridge Alert Management

The International Maritime Pilots' Association (IMPA) highlighted concerns regarding the growing number, frequency and complexity of bridge alerts experienced by pilots and bridge teams. The submission emphasized the operational challenge posed by excessive or poorly prioritized alerts and called attention to the potential impact on navigational decision-making. The paper recommended future review of:

- Resolution MSC.302(87) on Bridge Alert Management;
- MSC.1/Circ.1503/Rev.2 on ECDIS Guidance for Good Practice.

While delegations generally supported the objectives of the proposal, many considered that additional evidence would be needed to determine whether the underlying issues stem from:

- Equipment design issues;
- Alert management implementation issues;
- Human factors and bridge resource management considerations.

Several delegations also suggested that lessons learned from ongoing work in related alarm-management areas should be considered before initiating a broader review. IMPA indicated its intention to pursue a proposal for a new MSC output on this topic.

In parallel, ongoing IEC work related to bridge systems, watch alarms and track-control systems demonstrates growing industry attention to alarm management and the human-machine interface onboard ships.

## Voyage Data Recorder (VDR) Performance Standards

The United States submitted information arising from the investigation of the **MV Dali** casualty, identifying possible areas for improvement in Voyage Data Recorder performance standards.

The Sub-Committee expressed support for further consideration and invited interested Member States and organizations to consider proposing a new MSC output. Potential future amendments could influence:

- Data retention capabilities;
- Recording functionality;
- Survivability and recovery of recorded data;
- Accessibility of casualty investigation data;
- Operational and compliance expectations for shipowners.

Future regulatory discussions may increasingly focus on ensuring that VDR systems provide investigators with more comprehensive and resilient datasets while supporting broader industry objectives related to safety management, risk analysis and digital assurance.

## ABS RESOURCES

- ABS Regulatory News (link)
- ABS Regulatory Lessons (link)
- ABS Safety in Minutes Video Series (link)
- ABS Remote Survey Services (link)
- ABS Port State Control Checklist (link)
- ABS Rules and Guides (link)

## WORLD HEADQUARTERS

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