

IMO SUB-COMMITTEE ON NAVIGATION, COMMUNICATION AND SEARCH AND RESCUE, 13TH SESSION 22 – 26 June 2026

The IMO Sub-Committee on Navigation, Communications and Search and Rescue held its 13th Session, in hybrid form, from Monday 22 through Friday 26 June 2026, under the Chair of Mr. J. Brouwers (Kingdom of the Netherlands); his Vice-Chair, Mr. Carlos Cerda Espejo (Chile) was unavailable, triggering a roll-call vote for his replacement. There were 3 candidates for the post, the winner of which was Captain Maro Lucio Malschitzky (Brazil), who was duly elected, the unsuccessful candidates being Mr. John Stone (USA) and Mr. Liu Falong (China). The meeting was attended by representatives from Member States, Associate Members, IGOs and NGOS.

ADDRESS BY IMO SECRETARY-GENERAL

H.E. Mr. Arsenio Domingues welcomed delegates to the thirteenth session of the Sub-Committee on NCSR, a particularly significant week in preparation for celebrating the Day of the Seafarer on Thursday, 25 June with this year's theme, "Carrying world trade. Carrying the risks," He reflected on the human cost of the current tensions in the Strait of Hormuz, the loss of innocent seafarers' lives and also, the negative impacts at global level, both economically and in terms of food security. He stated that the current situation is showing positive signs of improvements, and expressed the hope that it will soon be possible to evacuate crew members and restore trade in the area.

The S-G went on to highlight some of the most important items on the agenda:

- Consideration of several proposals to amend existing routing measures and ship reporting systems;
- Protecting maritime interests at the forthcoming ITU World Radiocommunication Conference, and in this context, finalisation of the draft IMO position on the relevant WRC-27 agenda items for approval by MSC 112, a high priority task;
- Finalisation of the work related to the S-100 data distribution framework and global IP-based connectivity for ECDIS and operational guidance for digital route exchange, both being essential to support new ECDIS installations from 2029; and,
- The introduction of digital VHF voice communications, a major milestone in the history of maritime radiocommunications.

He rounded off his welcoming address in expressing confidence that, under the expert guidance of the Chair, Mr. Joris Brouwers of the Kingdom of the Netherlands, all of these items will be suitably addressed, thus achieving successful outcomes.

MATTERS OF INTEREST TO INTERMANAGERS. NCSR is an amalgam of the old Navigation Sub-Committee, the Communications Sub-Committee, and, the Search and Rescue Sub-Committee, thus it covers a very broad spectrum and is one of the most technical of the IMO Sub-Committees. However, given a highly efficient Chair, matters were covered in record time. Whilst there is nothing of outstanding interest to I/M Members, the range of topics makes for a very interesting read.

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Arrangements for NCSR 13 Working, Experts and Drafting groups

Specialist delegates were split into three WGs, plus one Expert Group (EG), all of which were formed and chaired as follows:

- .1 WG 1, items 5, 6, 9 and 11, Mr. F. Liu (China);
- .2 WG 2, items 10, 12 and 13, Mr. H. Noguchi (Japan);
- .3 WG 3, items 7 and 8, Ms. M. C. Solana Araujo (Spain); and,
- .4 EG, item 3, Mr. Nazwan Hafeez Bin Hashim (Malaysia).

1 ADOPTION OF THE AGENDA. The Agenda was duly adopted.

2 DECISIONS OF OTHER IMO BODIES. The Sub-Committee noted the decisions and comments pertaining to its work made by MSC 110 and took them into account in its deliberations when dealing with the relevant agenda items.

Outcome of MSC 110 and MSC 111. The Sub-Committee noted that MSC 111 had adopted the International Code of Safety for Maritime Autonomous Surface Ships (MASS Code) (resolution MSC.595(111)), as a non-mandatory instrument, and agreed to extend the target completion year in order to continue the work on the mandatory MASS Code; and the establishment of an Experience-Building Phase (EBP) for MASS. In this regard, the Committee agreed that expert input is required for the revision of the non-mandatory Code and the development of the chapters and regulations of the mandatory Code, and assigned the CCC, HTW, III, NCSR, SDC and SSE S/Committees as associated organs.

General statements. These were made by the delegates of Iraq and Oman concerning incidents in the Arabian Sea, the Sea of Oman and the Gulf region, particularly in and around the Strait of Hormuz. The delegation of the United Arab Emirates made a statement, calling, inter alia, for the restoration of normal navigation through the Strait of Hormuz via the Traffic Separation Scheme adopted by the Organisation following which, the delegation of the Islamic Republic of Iran also made a statement, reaffirming its commitment to maintaining the Strait of Hormuz, connecting the Persian Gulf and the Sea of Oman, as a safe and open waterway for shipping, to protecting seafarers, and ensuring the safe passage of commercial vessels. Other delegations welcomed the evacuation process in the Strait of Hormuz and thanked the IMO Secretary-General for the assistance and actions taken to facilitate the process.

Incidents in the Black Sea and Sea of Azov region. The delegation of Panama reported two drone attacks on Panama-flagged vessels in the Black Sea corridor: **LEGEND** and **VICTRESS** on 18 and 22 June, respectively, both attributed to the Russian Federation. The incidents resulted in the deaths of two seafarers, injuries to others, a major fire on **VICTRESS**, and the evacuation of its remaining crew, adding up to other cases already reported involving **ALJABRIYA, PROPUS and AQUA REGIA**.

The delegation of Türkiye made a statement expressing concern over the increasing number of attacks on commercial vessels in the Black Sea and the Sea of Azov, involving the use of naval mines, drones and missiles against civilian vessels. This was echoed by the delegation of Ukraine, informing on attacks conducted by the Russian Federation against civilian shipping, port infrastructure and maritime safety services, resulting in members of search and rescue teams being killed and others seriously injured.

In response, the delegation of the Russian Federation informed that the rescue vessels mentioned by the Ukrainian side, allegedly attacked on 6 June, were in fact Ukrainian Armed Forces boats used for military operations and that the Armed Forces of Ukraine had unleashed an unprecedented campaign of armed attacks on civilian vessels in the Sea of Azov, Baltic, Mediterranean and Black Seas, as well as on the port civilian infrastructure of the Russian Federation.

The delegations of Australia, Cyprus (on behalf of the European Union), Norway, the United Kingdom, and the European Commission, also made statements concerning Russian Federation aggression against Ukraine in relation to SAR operations in the region.

The Secretary-General noted the Day of the Seafarer's theme for 2026, "Carrying world trade. Carrying the risks", highlighting the severe impact of conflict and geopolitical tensions on innocent seafarers. He expressed concern over the situation in the Sea of Azov, Black Sea, Gulf of Aden, off Yemen and Somalia, and the Strait of Hormuz, while stressing the need to implement the industry's best management practices to prevent piracy and improve safety. He welcomed progress made on the evacuation framework in the Persian Gulf and emphasised that evacuation efforts had to remain safe, coordinated, and consistent with international law.

3 ROUTEING MEASURES AND SHIP REPORTING SYSTEMS.

Ship reporting system proposals. The Sub-Committee, taking into account the preliminary assessment in document NCSR 13/WP.3, annex 2, as well as comments in document NCSR 13/3/8 (Russian Federation), considered documents NCSR 13/3 (Iceland), NCSR 13/3/1 (France and Italy), NCSR 13/3/2 (Belgium et al.) and NCSR 13/3/3 (France et al.), proposing amendments to the existing mandatory ship reporting system (SRS) *Off the south and southwest coast of Iceland (TRANSREP)*, *In the Strait of Bonifacio (BONIFREP)*, *In the Western European Particularly Sensitive Sea Area (WETREP)*, and *In the Dover Strait/Pas De Calais (CALDOVREP)*, respectively, comprising, inter alia, the addition of new reporting contents, including evidence of insurance for maritime claims and certificates of civil liability issued in accordance with

relevant Conventions, additional reporting methods to use the internet, new conditions for reporting and/or new position reports.

During discussion, concerns were raised concerning the mandatory nature of reporting certificates of insurance for maritime claims and civil liability, possible discrepancies with UNCLOS provisions, and the availability of internet on board ships to fulfil the intended reporting requirements, including an associated additional administrative burden.

Establishment of the Experts Group on Ships' Routeing. The Sub-Committee established the Experts Group on Ships' Routeing, chaired by Mr. Nazwan Hafeez Bin Hashim (Malaysia), and instructed it accordingly. Following publication of the EG report, the Sub-Committee approved it in general, and in particular:

.1 agreed with the draft amended traffic separation schemes and associated measures:

- .1 Off Delaware Bay;
- .2 Off New York;
- .3 In the approaches to the Cape Fear River; and,
- .4 In the approaches to Chesapeake Bay;

as set out in the draft COLREG.2 circular consolidating these measures in its annexes, with a view to adoption by the Committee, for implementation six months after adoption;

.2 agreed with the draft amended mandatory ship reporting system In the Dover Strait/Pas De Calais (CALDOVREP), with a view to adoption by the Committee, for implementation six months after adoption;

.3 agreed with the draft amended mandatory ship reporting system In the Western European Particularly Sensitive Sea Area (WETREP), with a view to adoption by the Committee, for implementation six months after adoption;

.4 agreed with the draft amended mandatory ship reporting system In the Strait of Bonifacio (BONIFREP), with a view to adoption by the Committee, for implementation six months after adoption;

.5 noted the withdrawal by Iceland of the proposal on amendments to the existing mandatory ship reporting system "Off the south and southwest coast of Iceland" (TRANSREP) and that the amendments to TRANSREP were not finalised at this session.

4 UPDATES TO THE LRIT SYSTEM.

Outcome of MSC 111. The Sub-Committee noted that MSC 111 had approved draft amendments to SOLAS regulation V/19-1 regarding the introduction of the free-of-charge policy for the provision of LRIT information to entitled coastal States, expected to enter into

force on 1 January 2032, and a draft revision of the Performance standards and functional requirements for the long-range identification and tracking of ships (resolution MSC.263(84)/Rev.1), with an expected effective date of 1 January 2028, both with a view to adoption at MSC 112.

Developments on LRIT since NCSR 12. The Sub-Committee noted the information provided in document NCSR 13/4 (Secretariat) on relevant LRIT-related developments since NCSR 12, including the functioning and operation of system components, testing activities, renewal of public key infrastructure (PKI) certificates and regular meetings of the LRIT Operational Governance Body. Regarding the ongoing testing of the International LRIT Data Exchange disaster recovery (IDE DR) site, the Sub-Committee urged all LRIT Data Centres (DCs), in particular those that have experienced connectivity issues with the IDE DR site in the past, to cooperate with the IDE and the IDE DR site operators at future tests of the IDE DR site.

Performance review and audit of the LRIT system. The Sub-Committee noted the information provided concerning the performance of the LRIT system between 1 February and 31 December 2025; audits of DCs and the IDE concluded between 1 March 2025 and 28 February 2026; and the scale of charges to be levied by the LRIT Coordinator during the period 1 January to 31 December 2026, respectively. SOLAS Contracting Governments were invited to review and update, where necessary, their geographical polygons in the LRIT Data Distribution Plan, and to keep their LRIT contact details in the LRIT Data Distribution Plan up to date. Finally, several delegations provided information concerning the declined use of LRIT for SAR; the availability of competing technologies in the maritime domain; the result of the audit and performance of certain DCs; and matters concerning the provision of LRIT services.

5 DEVELOPMENTS IN GMDSS SERVICES, INCLUDING GUIDELINES ON MARITIME SAFETY INFORMATION (MSI).

GMDSS Master Plan. Recalling the request of NCSR 12 concerning the GMDSS Master Plan module of GISIS, document NCSR 13/5/2 (Secretariat) presented an analysis of the Plan as of February 2026, and advising actions taken by the Secretariat to assist Member States regarding the Enhanced Group Call (EGC) services section of the module; the Sub-Committee reminded SOLAS Contracting Governments to ensure that the information required to be communicated under the GMDSS Master Plan is complete, accurate and up to date at all times.

Reports of the IMO NAVTEX and EGC Coordinating Panels. The Sub-Committee noted the information provided in documents NCSR 13/5/4 (Chair of the IMO NAVTEX Coordinating Panel) and NCSR 13/5/8 (Chair of the IMO EGC Coordinating Panel), providing a summary of the current issues being addressed by the Panels, respectively, including actions and activities since NCSR 12. With regard to NAVTEX issues, Member States were encouraged to provide status reports to the IMO NAVTEX Coordinating Panel, of NAVTEX stations which had, or would, become non-operational and to promulgate information in accordance with the guidelines provided in resolutions A.705(17), and A.706(17), as amended, the NAVTEX Manual and the Joint IMO/IHO/WMO Manual on

MSI, and to refrain from using NAVTEX as a tool to disseminate inappropriate non-MSI or SAR related messages.

Concerning EGC services, the Sub-Committee encouraged Member States, METAREAs, NAVAREAs and SAR authorities, as appropriate, to: utilise guidance, support and online training resources offered by recognised mobile satellite service providers regarding the effective use of EGC services; review the information in the EGC services section of the GMDSS Master Plan, particularly regarding geographical boundaries of MSI coastal warning areas; ensure that actual MSI broadcast times align with the broadcast schedules allocated in the EGC services section of the GMDSS Master Plan; and, verify and ensure that the entries in the national authority section of the Global SAR Plan module of GISIS accurately reflect which rescue coordination centres (RCCs) disseminate information directly through the EGC service.

Recalling the agreement by MSC 108 concerning dissemination of MSI through all operational recognised mobile satellite services by 31 December 2026, the Sub-Committee: encouraged METAREA VIII to declare full operational capability on the Iridium SafetyCast service; and, urged both NAVAREAs and METAREAs XIII, XX and XXI, to progress the implementation of the Iridium SafetyCast service, notifying the Secretariat should any further delays be encountered.

Reports of recognised mobile satellite service providers. The Sub-Committee noted the information provided in documents NCSR 13/5 and NCSR 13/5/1 (IMSO) concerning the annual reports on recognised GMDSS mobile satellite service providers public service obligations, as overseen by IMSO. The Sub-Committee invited administrations to consider encouraging their MSI providers and SAR services to migrate and use Inmarsat SafetyNET II rather than SafetyNET given the cost and functionality benefits described in document NCSR 13/5.

Report on the Cospas-Sarsat system. The Sub-Committee noted the information provided in relevant parts of document NCSR 13/5/6 (Cospas-Sarsat), including additional information provided orally by the observer from Cospas-Sarsat, concerning the status report on the system. Member States, especially those with a history of insufficient response to test communications, were invited to continue focussing on improving the reliability of communications between Cospas-Sarsat mission control centres and their supported SAR points of contact (usually RCCs), both during tests and for transmission of real distress alerts. They were also encouraged to develop appropriate national procedures for mitigating non-distress alerts from tracking emergency locator transmitters (ELT(DT)s), encouraging cooperation between aircraft manufacturers, airline operators and aviation authorities, as necessary.

World-Wide Navigational Warning Service (WWS). The Sub-Committee noted the information provided in document NCSR 13/5/5 (IHO) concerning the outcomes of the seventeenth session of the IHO World-Wide Navigational Warning Service Sub-Committee, held from 8 to 12 September 2025.

NAVDAT implementation issues. The Sub-Committee considered the relevant parts of document NCSR 13/6 (Secretariat), providing the report of the twenty-first meeting of the IMO/ITU Experts Group on Maritime Radiocommunication Matters, in particular those concerning NAVDAT implementation issues, taking into account documents NCSR 13/6/1 (Secretariat), providing a liaison statement from ITU-R Working Party (WP) 5B regarding the ongoing revision of Recommendations ITU-R M.2010-2 and ITU-R M.2058-1 relevant to NAVDAT. Having noted the considerations of the IMO/ITU Experts Group, including the preliminary consideration of the above-mentioned liaison statement from ITU-R WP 5B, the Sub-Committee endorsed the consequential draft modifications to paragraph 5.1 of appendix 3 of the NAVDAT manual agreed by the IMO/ITU Experts Group.

Report of WG 1. Having considered the relevant part of the Working Group's report, the Sub Committee agreed to the updated road map on the issues to be considered regarding the introduction of the NAVDAT service, keeping it updated based on future developments.

6 RESPONSE TO MATTERS RELATED TO THE ITU-R STUDY GROUPS AND ITU WORLD RADIOCOMMUNICATION CONFERENCE.

Report of the Joint IMO/ITU Experts Group. The Sub-Committee considered the report of the twenty-first meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters (Experts Group), held at IMO Headquarters from 6 to 10 October 2025, chaired by Mr. A. Jennings (Ireland), together with related and commenting documents, and took action on pertinent matters, as summarised below.

Draft IMO position on WRC-27 agenda items. The Sub-Committee noted that MSC 111, having considered the draft IMO position on ITU World Radio Conference 2027 (WRC-27) agenda items, had decided to refer the draft IMO position back to NCSR 13 for detailed review, consideration, and submission of a revised draft IMO position to MSC 112. Following consideration and noting general support for the draft modifications prepared by the Experts Group, as well as the intention of the proposed modifications provided in the commenting documents to protect GMDSS services, the Sub-Committee referred the matter to Working Group 1 for review and finalisation of the draft IMO position.

Draft revision to MSC.1/Circ.1659. Having recalled the instructions of NCSR 12 to the Experts Group, the Sub-Committee agreed the draft revision of the Guidance for the dissemination of search and rescue related information through the international enhanced group call service, with a view to approval by MSC 112.

Next meeting of the Experts Group. The Sub-Committee agreed to hold the twenty-second meeting of the Experts Group during the week of 28 September to 2 October 2026, at IMO Headquarters in London, and instructed WG 1 to prepare draft terms of reference.

Radar SART. The Sub-Committee considered document NCSR 13/6/6 (United States), providing information on search and rescue radar transponders (radar SART), requesting feedback to address identified issues with the visualisation of radar SART signals, and proposing liaison statements to IEC and ITU on this matter. Interested Member States and international organisations were invited to provide feedback directly to the

United States on this matter, noting that such States and organisations might also provide their views directly at relevant IEC and ITU meetings.

Report of WG1. Having considered the relevant part of WG 1's report, the Sub-Committee:

.1 agreed the finalised draft IMO position on relevant WRC-27 agenda items concerning matters relating to maritime services, and invited MSC 112 to approve it for subsequent submission to the ITU's CPM 27-2, noting that the final IMO position would be prepared by NCSR 14 and submitted, as an urgent matter, to MSC 113 for approval and subsequent submission to WRC-27;

.2 noted the considerations concerning WRC-27 agenda item 1.16 and the possibility of developing an IMO position on this agenda item at NCSR 14, subject to the outcome of ITU's CPM 27-2 meeting;

.3 invited interested Member States and international organisations to consider submitting proposals to the twenty-second meeting of the Joint IMO/ITU Experts Group to further develop the IMO position on WRC-27 agenda item 10, and;

.4 approved the draft terms of reference for the twenty-second meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, and agreed that four days will be required for the meeting.

7 DEVELOPMENT OF GLOBAL MARITIME SAR SERVICES, INCLUDING HARMONISATION OF MARITIME AND AERONAUTICAL PROCEDURES AND AMENDMENTS TO THE IAMSAR MANUAL.

Global SAR Plan module of GISIS. The Sub-Committee noted the information provided in document NCSR 13/7/2 (Secretariat) presenting an analysis of the information contained in the Global SAR Plan, as of February 2026, and advising actions taken by the Secretariat concerning the development of a technical validation tool for geographical polygons representing search and rescue (SAR) regions.

Report of the ICAO/IMO Joint Working Group. The Sub-Committee considered document NCSR 13/7 (Secretariat), presenting the report of the thirty-second meeting of the ICAO/IMO Joint Working Group (JWG) held in Sydney, Australia, from 3 to 7 November 2025. Note was taken of the positive feedback in relation to a regional SAR capacity-building workshop, organised by the IMO Secretariat in conjunction with JWG 32, facilitating the participation of SAR experts from Pacific small island developing States in the JWG meeting.

Amendments to the IAMSAR Manual. Recalling NCSR 12 instructions concerning draft amendments to the IAMSAR Manual, the Sub-Committee considered the progress made regarding guidance on psychology of emergency, ship security alert system (SSAS), ship reporting systems for SAR and search planning and evaluation concepts. Progress made by JWG 32 on the preparation of guidance on submarines and passenger submersible

craft and related SAR issues was also considered. Having noted the view of JWG 32 that the development of a separate IMO circular on psychology of emergency was considered to be not warranted with the production of the guidance in the IAMSAR Manual, the Sub-Committee referred the draft amendments to the IAMSAR Manual and documents NCSR 13/7/4 and NCSR 13/7/5 to Working Group 3 for further consideration. Ways of assisting IMO Member States to complete the information in the Global SAR Plan module of GISIS was referred to WG 3 for advice.

Next meeting of the ICAO/IMO Joint Working Group. This will take place in Malmö, Sweden, provisionally planned from 9 to 13 November 2026, the Sub-Committee having approved the provisional agenda.

Use of LRIT by SAR services. During consideration of document NCSR 13/7/6 (IMRF) concerning the use of LRIT by SAR services, views were expressed in support of the recommendations therein, whilst calling for caution in that LRIT is not the only system that can be used for SAR purposes, and that the use of other ship monitoring and tracking systems in conjunction with LRIT should be included. It was emphasised that LRIT is a complementary tool to other systems and each rescue coordination centre (RCC) should decide how and when to use it. Meanwhile, SOLAS Contracting Governments are encouraged to ensure that their SAR services make full and effective use of LRIT, including maintaining RCC access, training SAR operators, and integrating LRIT into SAR procedures and checklists.

IMRF online maritime search and rescue Academy project. Having considered document NCSR 13/7/7 (IMRF) concerning the IMRF online maritime SAR Academy project, Member States and stakeholders were encouraged to participate and contribute to IMRF's efforts by making best use of such a resource.

Report by WG 3. Having issued instructions to WG 3, the subsequent report of the Group concerning this agenda item was approved in general, and in particular, the Sub-Committee:

.1 noted the Group's consideration of the draft amendments proposed for inclusion into the IAMSAR Manual and instructed JWG 33 to consider any additional amendments to IAMSAR Manual Volume III concerning SSAS service providers;

.2 noted the Group's consideration of the list of ship reporting systems for SAR contained in IAMSAR Manual Volume II, appendix O, and:

.1 instructed JWG 33 to consider the removal or update of IAMSAR Manual Volume II, appendix O, advising the Sub-Committee, as appropriate; and,

.2 invited interested IMO Member States and international organisations to consider submitting further information to JWG 33 regarding the comprehensiveness and usefulness of information contained in appendix O;

.3 noted the Group's considerations and comments concerning the guidance on submarines and passenger submersible craft and related SAR issues and instructed JWG 33 to take them into account when finalising the related draft amendments to the IAMSAR Manual;

.4 noted the Group's consideration of possible ways of assisting IMO Member States to complete information in the Global SAR Plan module of GISIS and requested the Secretariat to consider implementing modifications to the Global SAR Plan, automatically reminding responsible authorities to periodically verify the information therein; and,

.5 approved the draft SAR.7/Circ.17 on List of documents and publications which should be held by a maritime or joint rescue coordination centre,

8 DEVELOPMENT OF GUIDELINES FOR EPIRB WHICH IMPLEMENT THE TWO-WAY COMMUNICATION SERVICE VIA THE SAR/GALILEO RETURN LINK SERVICE AS A COMPLEMENT TO PERFORMANCE STANDARDS (RESOLUTION MSC.471(101)).

The Sub-Committee considered document NCSR 13/8 (Austria et al.), presenting the two-way communication service offered by the Galileo Return Link and proposing draft amendments to resolution MSC.471(101) on Performance standards for float-free Emergency Position-Indicating Radio Beacons (EPIRBs) operating on 406 MHz to introduce the two-way communication service as an optional EPIRB feature; together with document NCSR 13/8/1 (China), proposing modifications to the draft amendments to resolution MSC.471(101). Information was provided in document NCSR 13/5/6 (Cospas-Sarsat) concerning the two-way communication service and related activities.

Following discussion, there was support to proceed with the development of draft amendments to resolution MSC.471(101) introducing optional functionalities to implement the two-way communication service, as well as the need to address human element aspects for operational purposes and remain technologically neutral to accommodate future service providers. The Sub-Committee then referred the matter to WG 3 for further consideration and advice to the Sub-Committee, as appropriate.

Report by WG 3. In considering the relevant part of WG 3's report, the Sub-Committee noted the Group's consideration on the two-way communication service, and:

.1 agreed the draft revision of resolution MSC.471(101) on performance standards for float-free Emergency Position-Indicating Radio Beacons (EPIRBs) operating on 406 MHz, introducing the two-way communication service as an optional functionality, with a view to adoption by MSC 112;

.2 instructed JWG 33 to consider the development of guidelines for the operational use of EPIRBs that implement the two-way communication service, advising the Sub-Committee, as appropriate;

.3 invited interested IMO Member States and international organisations to submit further information to JWG 33 on the matter referred to in sub-paragraph .2; and,

.4 considered inviting MSC to inform HTW of the draft revised resolution MSC.471(101), if adopted, and to take action as appropriate.

9 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 AND OPERATIONAL GUIDANCE FOR ROUTE EXCHANGE.

Report of the Correspondence Group on Establishment of an S-100 Framework. The Sub-Committee recalled that NCSR 12 had established the CG on Establishment of an S-100 Framework, under the coordination of Australia, and instructed it, inter alia, to submit an interim report to the twenty-first meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters and a report to this session of the Sub-Committee. Having noted the considerations of the Joint IMO/ITU Experts Group on the interim report of the CG, the Sub-Committee considered document NCSR 13/9 (Australia), containing the CG report, providing draft MSC circulars on guidance to establish a framework for data distribution and global IP-based connectivity for shore-based facilities and ships supporting ECDIS S-100 products, and on operational guidance for digital route exchange, as well as a list of elements associated with the implementation of S-100 capable ECDIS, together with documents submitted by IALA, Japan, and CIRM.

During discussion, finalisation of the two draft MSC circulars at this session was supported in general, emphasising the importance of progressing implementation of the S-100 framework, which would represent a major milestone in maritime digitalisation. In this context, views were expressed, inter alia, supporting the comprehensive testing and trial of the S-100 framework; progressing implementation in a practical and inclusive manner both ashore and on board ships, following a phased approach and taking into account the limitations of developing countries; addressing human element implications, including training and familiarisation both for seafarers and shore-based stakeholders; further analysing the legal and financial implications of SECOM and MCP, including interoperability between different instances of MCPs; recommending that S-100 connectivity should remain technologically neutral, taking into account cybersecurity; and considering the need for possible coordination with other bodies of the Organisation.

Instructions were given to WG 1, and following the Group's deliberations, the Sub-Committee:

.1 agreed draft MSC circulars on:

.1 guidance to establish a framework for data distribution and global IP-based connectivity for shore-based facilities and ships supporting ECDIS S-100 products; and,

.2 operational guidance for digital route exchange;

and invited MSC 112 to approve them;

.2 noted:

.1 the high-level summary of elements associated with implementation of S-100 capable ECDIS, recommended next steps for the Organisation; and,

.2 the list of identified elements associated with the implementation of S-100 capable ECDIS;

inviting interested Member States and organisations to consider submitting a proposal for a new output to the Committee to address issues associated with the implementation of the IP-based data distribution framework and S-100-capable ECDIS in a timely and coordinated manner;

.3 subject to the above, agreed to the completion of work on outputs 2.12 and 2.15 on "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" and "Operational guidance for route exchange", respectively.

10 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.

The Sub-Committee recalled that MSC 107 had agreed to include in its post-biennial agenda an output on "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", but developed only after the approval/adoption of the necessary procedures and requirements for the recognition of augmentation systems. In this regard, the Sub-Committee recalled also that MSC 111 had adopted resolution MSC.599(111) on *Amendments to the Worldwide Radionavigation System* (resolution A.1046(27)), containing relevant requirements for augmentation systems, and had endorsed the agreement of NCSR 12 that recognition of augmentation systems by the Organisation was not required.

Report of the Correspondence Group on Development of Performance Standards for DFMC SBAS and ARAIM in Shipborne Radionavigation Receivers. The Sub-Committee recalled that NCSR 12 had established the CG on Development of Performance Standards for DFMC SBAS and ARAIM in Shipborne Radionavigation Receivers, under the coordination of Australia, the report of which included initial definitions and goal-based functional requirements to guide and progress the further development of performance standards. The approach recommended by the CG was supported in general, including the general principles and functional requirements of future performance standards. Views were expressed emphasising, inter alia, the importance of remaining technology neutral, ensuring compatibility with all recognised

satellite navigation systems that are part of the World-wide radionavigation system, taking into account the needs in the maritime environment and the limited capabilities of developing countries. Noting the progress made by the Group and that substantial work remains to finalise performance standards, document NCSR 13/10 was referred to WG 2.

Report by WG 2. The Sub-Committee noted the Group's progress on the 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 and approved draft terms of reference for a correspondence group to continue progressing the work intersessionally.

11 DEVELOPMENT OF A TRANSITION SCHEME FOR THE INTRODUCTION OF DIGITAL TECHNOLOGY FOR VERY HIGH FREQUENCY (VHF) VOICE COMMUNICATIONS.

The Sub-Committee recalled that NCSR 12 had instructed the twenty-first meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters (Experts Group) to undertake initial considerations concerning the development of a transition scheme for the introduction of digital technology for VHF voice communications and to advise NCSR 13. Relevant parts of the Experts Group report containing initial recommendations on this matter were also considered, including a preliminary draft MSC circular, and note was taken of the information provided on the results of VHF digital voice communication field trials conducted by Japan. The Sub-Committee noted also that the primary responsibility to allocate radio spectra for radiocommunication systems and development of technical standards to enable interference-free operation, rests with the ITU Radiocommunication Sector and that, in this regard, ITU-R WP 5B is conducting technical studies for the introduction of digital technology for VHF voice communications.

WG 1 was instructed, taking into account decisions, comments and proposals made in plenary, to consider the development of a transition scheme for the introduction of digital technology for VHF voice communications, taking into account the initial considerations of the Experts Group. Following WG 1's deliberations, the Sub-Committee:

- .1 agreed a draft MSC circular on the transition scheme for the introduction of digital technology for VHF voice communications and invited MSC 112s approval;
- .2 subject to MSC approval, agreed to completion of the work on output 2.5 on "Development of a transition scheme for the introduction of digital technology for Very High Frequency (VHF) voice communications"; and,
- .3 approved the draft liaison statement to ITU on the transition scheme for the introduction of digital technology for VHF voice communications; requested the Secretariat to convey it to ITU; and, invited the Committee's endorsement.

12 REVISION OF THE PERFORMANCE STANDARDS FOR GYRO-COMASSES (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 recalled that MSC 107 had agreed to include in its post-biennial agenda an output on "Revision of the 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 and that NCSR 12 had established a CG, under the coordination of China, to progress the revision of such performance standards, reporting to NCSR 13. Document NCSR 13/12 (China), containing the CG's report was considered, together with three other documents, two by China and a joint one by Japan and CIRM.

During the ensuing discussion, the Sub-Committee considered, in particular, whether a revision of resolution A.424(XI) and MSC.1/Circ.1612 is necessary to incorporate the elements of fibre optic gyro-compasses, or if the identified gaps and issues could be addressed by other means, such as developing a new non-mandatory IMO instrument or amending other existing instruments. In this regard, views expressed were mainly divided, either in support of:

- .1 revising resolution A.424(XI) following a modular structure; or
- .2 developing separate non-mandatory performance standards suitable for gyro-compasses other than those provided in resolution A.424(XI).

Views were also expressed indicating the need to appropriately assess identified gaps, in particular, concerning suitability in latitudes beyond 60 degrees, noting that several Member States emphasised that no issues have been identified with the operation of existing gyro-compasses in high latitudes; and that any possible developments should remain technologically neutral.

No conclusion was reached as to a preferred option and it was agreed to refer the above-mentioned documents to WG 2 for detailed consideration and advice.

Report by WG 2. Having considered the relevant part of WG 2's report, the Sub-Committee noted the Group's agreement that the development of a new set of performance standards (option 3) was the most appropriate way to address the gaps identified by the CG and invited proposals for a new output to the Committee.

13 DEVELOPMENT OF PERFORMANCE STANDARDS FOR RANGING MODE (R-MODE) IN RADIONAVIGATION RECEIVERS.

It was recalled that MSC 110 agreed to include in the biennial agenda of the NCSR Sub-Committee for the 2026-2027 biennium and the provisional agenda for NCSR 13 an output on "Development of performance standards for ranging mode (R-mode) in radionavigation receivers", with a target completion year of 2027, assigning NCSR as the associated

organ, to also include consideration of any necessary amendments to resolution A.1046(27) concerning use of R-mode as part of the Worldwide Radionavigation System.

Three documents were submitted in addition to one by IALA presenting the results of an IALA Workshop on future radionavigation and radiocommunication systems, and following discussion, the Sub-Committee agreed that R-mode should be considered as a backup system supplementary to GNSS and that recognition of R-mode by the Organisation would not be necessary.

The Sub-Committee instructed WG2, taking into account decisions, comments and proposals made in plenary, to prepare draft performance standards for shipborne ranging mode (R-mode) receiver equipment based on the annex to document NCSR 13/13/1, and to consider proposed amendments to resolution A.1046(27), taking into account document NCSR 13/13/2, and advise the Sub-Committee, as appropriate.

Report by WG 2. The Sub-Committee agreed to WG 2's proposed draft MSC resolution on performance standards for shipborne R-mode receiver equipment with a view to adoption by the Committee and also agreed that amendments to A.1046(27) and MSC.599(111) to accommodate the inclusion of R-mode would be premature at this stage. Interested Member States were invited to submit proposals for a new output.

14 UNIFIED INTERPRETATION OF PROVISIONS OF IMOSAFETY, SECURITY, ENVIRONMENT, FACILITATION, LIABILITY AND COMPENSATION-RELATED CONVENTIONS.

General. The Sub-Committee recalled that MSC 108 agreed a policy for consideration and approval of unified interpretations (UI) to be followed by all its subsidiary bodies.

Interpretation of the SOLAS requirements for the carriage of compasses. The Sub-Committee considered document NCSR 13/14 (United Kingdom) highlighting a difference in the interpretation of the SOLAS requirements for the carriage of compasses, inviting the Sub-Committee to decide on the correct interpretation and issue a UI to ensure consistent application of the requirement.

Following discussion, and having noted that a UI should not contravene SOLAS requirements, the matter was referred to WG 2 for further consideration and advice.

Report by WG. The Sub-Committee agreed with the Group's decision that neither a new unified interpretation nor any amendments to the existing MSC.1/Circ.1224 are required to address the issue presented in the UK document.

15 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR NCSR 14.

Outcome of MSC 110 and MSC 111. The Sub-Committee noted that MSC 110 had approved the revised terms of reference of the NCSR Sub-Committee, the proposed biennial agenda of the Sub-Committee for the 2026-2027 biennium and the provisional agenda for NCSR 13, which were subsequently confirmed by MSC 111. It was also noted

that MSC 110 had agreed to retain output 2.18 on "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)".

Review groups for model courses. The Sub-Committee recalled that a Review Group on Model Course 3.15 on SAR On-scene Coordinator (IAMSAR Manual, Volume III), which was established at NCSR 12, is due to report to NCSR 14. It was further recalled that a Review Group on Model Course 3.15 on SAR On-scene Coordinator (IAMSAR Manual, Volume III), which was established at NCSR 12, is due to report to NCSR 14.

Intersessional meetings. The Sub-Committee confirmed the holding of the following intersessional meetings to take place in 2026:

- .1 the twenty-second meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, planned to be held from 28 September to 2 October 2026, at the IMO Headquarters; and,
- .2 the thirty-third meeting of the ICAO/IMO Joint Working Group on Harmonisation of Aeronautical and Maritime Search and Rescue, planned for 9 to 13 November 2026, in Malmö, Sweden,

Date of the next session. The fourteenth session has been tentatively scheduled for 26 to 30 April 2027.

16 **ELECTION OF CHAIR AND VICE-CHAIR FOR 2027.** Both incumbents were re-elected

17 **ANY OTHER BUSINESS.**

Update to SN.1/Circ.243/Rev.2. The Sub-Committee considered document NCSR 13/17 (Austria et al.), proposing amendments to SN.1/Circ.243/Rev.2 on Guidelines for the presentation of navigational-related symbols, terms and abbreviations in order to reflect the latest changes in IEC standard 62288. Following consideration, the Sub-Committee concluded that the update of SN.1/Circ.243/Rev.2, if it were considered to be a minor correction/issue, could be conducted under the agenda item "Any other business" and referred the matter to WG 2 for detailed consideration and advice.

Bridge alert management. The Sub-Committee considered document NCSR 13/17/2 (IMPA), reporting on the experiences of maritime pilots and, by extension, bridge teams, with bridge alerts, and recommending revising the Performance standards for bridge alert management (resolution MSC.302(87)) to align the performance standards with the principles of SOLAS regulation V/15, and ECDIS Guidance for good practice (MSC.1/Circ.1503/Rev.2) to highlight the need for company navigation policies to support effective context-specific alert management and effective human alert response. Several delegations supported the aim of the proposal. However, from the information presented in document NCSR 13/17/2, it was unclear whether the issue was related to bridge alert management, its effective implementation, or any other reasons. In this regard, views were

expressed recommending waiting for the work on engine-room alert management to be finalised before embarking on these considerations. Noting IMPA's intention to submit a proposal for a new output to MSC 112, the Sub-Committee invited those interested to contact IMPA directly.

Voyage data recorders. The Sub-Committee considered document NCSR 13/17/3 (United States), sharing information about the incident with the **MV Dali** and identifying several issues that should be considered in relation to voyage data recorders, including possible amendments to the *Performance standards for voyage data recorders (VDRs)*. Following consideration and noting support for further assessment, those interested were invited to consider submitting a proposal for a new output to MSC.

Update on the progress of S-100 implementation. Having recalled that document NCSR 13/17/4 (IHO), concerning the progress made with the development and implementation of the IHO Universal Hydrographic Data Model (S-100) intended for use in future S-100 ECDIS, had been considered under agenda item 9, Member States were encouraged to develop S-100 data set production and dissemination strategies in accordance with the implementation dates stated in resolution MSC.530(106)/Rev.1.

Instructions for Working Group 2. The Sub-Committee instructed WG 2 to consider document NCSR 13/17 and advise on any necessary revisions to SN.1/Circ.243/Rev.1 and SN.1/Circ.243/Rev.2, as corrected, including addressing implementation issues, application to existing equipment and the impact on resolution MSC.191(79), as amended. Having considered the relevant part of WG 2's report, the Sub-Committee agreed with the Group's decision related to SN.1/Circ.243/Rev.2 that it did not constitute a minor correction or update and invited interested Member States and international organisations to consider submitting a proposal for a new output to MSC.

18 REPORT TO THE MARITIME SAFETY COMMITTEE. The Sub-Committee endorsed the final report for submission to MSC with a few minor corrections.

19 CLOSING REMARKS BY THE SECRETARY-GENERAL. In his concluding remarks, H.E. Mr Domingues stated that all of the most important agenda items outlined in his opening speech, had been achieved and he duly congratulated all delegations present. He further acknowledged the many important actors who made the meeting so successful, namely the Chair and Vice-Chair, the Chairs of the WGs and EG, the Secretariat members in robust support of the delegates, the Translators and Interpreters, the Catering Staff and of course the technical team who master-minded the hybrid aspects of the meeting. Finally, he expressed gratitude to all departing Staff members and wished delegates a restful week-end.

End

Captain Paddy McKnight