Input paper: ENG19-4.3.2

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

X ARM X ENG X PAP **□** Input

X ENAVX VTS X Information

Agenda item

Technical Domain / Task Number

Author(s) / Submitter(s) Secretariat

Report on IMO NCSR 11

# Introduction

This report summarizes items of interest to IALA arising from IMO NCSR 11, held from 4 to 13 June, 2024, at the IMO Headquarters. The meeting was chaired by Mr. J. Brouwers of the Netherlands, supported by Vice-Chair Mr. C. Cerda Espejo of Chile. IALA was represented by Minsu Jeon, Tom Southall, and Stefan Bober.

To this meeting, IALA submitted the following papers to the meeting:

* NCSR 11-14 - IALA Guideline G1181 on VDES VDL Integrity Monitoring (IALA)
* NCSR 11-18-1 - Draft revision of SN.1Circ.297 on IALA Maritime Buoyage System (IALA)
* NCSR 11-18-2 - IALA Risk Management Toolbox (IALA)

# Outcomes of the meeting

**Key points**

* IALA MBS update (SN.1/Circ.297)
* Updates to IALA Degree of Risk Evaluation (SN.1/Circ.296)
* Establishment of Voluntary Vessel Traffic Service (VTS):
* Marine Safety Information (MSI) and GMDSS Services
* Blockage to AIS signals caused by VHF radiotelephony
* Introducing VDES into SOLAS
* Revision of Recommendation ITU-R M.1371-5
* Measures to improve the security and integrity aspects of AIS
* Guidance on the validity of on-board radiocommunications equipment (MSC.1/Circ.1460/Rev.4)
* WRC-27 agenda item 1.12, current and future use of the 1645.5 -1646.5 MHz band
* S-100 implementation matters and training needs of seafarers
* GPS jamming

**GPS jamming**

The delegation of Panama drew the attention of the Sub-Committee to recent cases of Global Positioning System (GPS) jamming in the vicinity of international waters near the Democratic People's Republic of Korea which affected navigation systems, including AIS and LRIT, causing severe equipment malfunctions to 15 Panamanian flag ships that were sailing in that area. The delegation highlighted several cases and examples of GPS jamming, the actions taken by the flag State's monitoring centre and subsequently the actions taken by the owner/operator and ships. Furthermore, the delegation made some recommendations, conclusions and general comments to alert the Sub-Committee and share good practices and hence improve the response to future similar incidents in that area, calling also on other Administrations to share information on similar incidents in order to be considered and to take appropriate actions.

In connection to the above, the delegation of the Republic of Korea made a statement, as set out in annex […], drawing the attention of the Sub-Committee to recent GPS jamming by the Democratic People's Republic of Korea in Incheon and Gyeonggi provinces of the Republic of Korea since 29 May 2024, which had impeded the GPS signals of 731 ships including fishing vessels, passenger and cargo ships as of 31 May. The delegation, recognizing that information on ship position was vital to ensure the safe navigation of ships, called for actions to stop GPS jamming by the Democratic People's Republic of Korea.

The delegations of Australia, Japan, New Zealand, Norway, United Kingdom, United States and Ukraine joined the serious concerns expressed on GPS jamming.

The delegation of the Democratic People's Republic of Korea stated that the above intervention by the delegation of the Republic of Korea was an absolutely groundless allegation not worth commenting on at all and rejected all interventions that the alleged GPS jamming was related to the Democratic People's Republic of Korea.

**Introducing VDES into SOLAS**

The Sub-Committee reviewed the report of the Correspondence Group (CG) on VDES and discussed the way forward. The CG examined VDES from a technical, regulatory and operational perspective, including the user interface, the human element, the financial implications and other matters. The CG developed draft VDES performance standards and draft guidelines for the operational use of VDES, but there were still some issues that could not be resolved at the time of submitting this report.

It was pointed out in the discussion, that implications, affecting shore side authorities should be considered. VDES could be introduced as a navigational equipment under SOLAS Chapter V, especially as a means to improve security and integrity aspects of AIS and that in the absence of a globally applicable data sharing mechanism, the exchange of data between VDES devices could be provided in SOLAS Chapter V. It may be necessary to consider also use cases of VDES in the context of GMDSS for further consideration of SOLAS Chapter IV, taking into account IALA G1117. Given the many issues that still needs to be resolved for the introduction of VDES into SOLAS as a communication equipment, it would be premature to amend SOLAS Chapter IV at this stage.

The Sub-Committee discussed three options for amending SOLAS Chapter IV (regulation V/19.2.4) to introduce VDES as a carriage requirement, either in lieu of AIS or as its mandatory replacement. The options were “1 - AIS or VDES”, “2- AIS, VDES or other means”, “3 - Replace AIS by VDES”. The decision was clearly in favour of Option 1 or 2, the voluntary use of VDES instead of AIS (13/3).

Due to time constraints, the Sub-Committee could not consider in detail the need for amendments to SOLAS Chapter IV. In view of many outstanding issues that need to be resolved before the mandatory introduction of VDES as a communication equipment, amendments to Chapter IV should not be pursued at this stage, with interested Member States and international organizations being invited to consider proposing a new output for the introduction of VDES as a communication equipment.

The Sub-Committee renewed the Terms of reference for the CG on VDES, led by Japan, to consideration the possible substitution of the mandatory carriage requirement of AIS by the AIS component of the VDES under Chapter V. The CG is tasked to develop amendments to SOLAS Chapter V, draft performance standards for VDES and draft guidelines for the operational use of shipborne VDES and to submit a report to NCSR 12.

**IALA MBS (SN.1/Circ.297)**

The Sub-Committee considered a proposal from the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) for a draft revision of SN.1/Circ.297 on the IALA Maritime Buoyage System. This revision aims to inform Member States of the revised system adopted at the 14th IALA General Assembly held in Rio de Janeiro, Brazil, on June 3, 2023. The Sub-Committee referred this document to the Working Group on Navigation for further consideration and advice.

NCSR agreed to the draft SN circular on IALA Maritime Buoyage System, revising SN.1/Circ.297, with a view to approval by the MSC Committee.

**IALA Risk Management Toolbox (SN.1/Circ.296)**

IALA proposed updates to the degree of risk evaluation, highlighting enhancements to the IALA Risk Management Toolbox. These updates consider the provisions of SOLAS regulations V/12 and V/13, which require assessing the degree of navigational risk. This document was also referred to the Working Group on Navigation.

NCSR agreed to the draft SN circular on IALA Risk Management Toolbox for aids to navigation and vessel traffic services, revising SN.1/Circ.296, with a view to approval by the MSC Committee.

**Establishment of Voluntary Vessel Traffic Service (VTS):**

The Sub-Committee reviewed a proposal for establishing a voluntary VTS around the existing traffic separation schemes (TSSs) "Off Texel" and "Off Vlieland, Vlieland North and Vlieland Junction" by the Kingdom of the Netherlands. This initiative aims to enhance navigation safety and environmental protection in the Wadden Sea area, a designated Particularly Sensitive Sea Area (PSSA).

**Marine Safety Information (MSI) and GMDSS Services**

The Sub-Committee discussed developments in Global Maritime Distress and Safety System (GMDSS) services, including guidelines on MSI and the use of the Iridium SafetyCast service. It emphasized the need for Member States to ensure timely dissemination of MSI via all operational recognized mobile satellite services (RMSSs), including the Iridium and Inmarsat services.

**Blockage to AIS signals caused by VHF radiotelephony**

The Sub-Committee briefly addressed the issue of blocking the reception of AIS signals by operating VHF radiotelephones nearby. The Sub-Committee recognised the importance of the issue and agreed that further discussion could take place at the next meeting of the Joint IMO/ITU Experts.

**Revision of Recommendation ITU-R M.1371-5**

The Sub-Committee considered draft amendments to table 53 to clarify the type of ship and the terminology used. It was concluded to further examine the proposals by the Joint IMO/ITU Experts.

**Measures to improve the security and integrity aspects of AIS**

The Sub-Committee considered security and integrity aspects of AIS, in particular the manipulation of AIS data transmissions, such as the MMSI. The Sub-Committee noted for the administration to take appropriate precautions for the assignment of MMSIs. However, from a technical perspective, due to the open nature of the AIS protocol, there is no inherent safeguards to prevent tampering AIS equipment. The useful information in IALA Guideline G1181 on VDES VDL Integrity Monitoring has been noted as the guideline is also applicable to AIS and it could be a useful source of information to assist Member States in detecting and mitigating the effects of manipulated AIS transmissions.

The Sub-Committee discussed the mandatory entry of the IMO number and the unique vendor ID into the AIS equipment. Draft amendments to the performance standards for AIS were proposed, enhancing the existing requirement for the entry of the IMO number into the AIS equipment or an "official flag State number", if the ship has no IMO number, and introducing new requirements for entry of a "unique manufacturer equipment identification number". A change to the IMO number should only be possible by an authorized manufacturer's agent. The optional unique vendor ID should become a unique manufacturer equipment identification number that is permanently entered during manufacturing of the AIS equipment. Corresponding amendments were also prepared to guidelines for the installation of a shipborne AIS and to guidelines on annual testing of the AIS.

The date of entry into force of the draft MSC resolution should be 1 January 2029 to allow sufficient time for the development of the necessary testing standards and mass production of the new equipment Additional measures to detect and prevent AIS manipulation were discussed. The harmonized use and cross-referencing of AIS and LRIT data could significantly help to detect irregularities or suspicious AIS transmissions. It was noted that VDES could provide an effective solution to combat AIS tampering in the long term through data encryption and authentication.

**• Guidance on the validity of on-board radiocommunications equipment (MSC.1/Circ.1460/Rev.4)**

The Sub-Committee prepared a draft revision of MSC.1/Circ.1460/Rev.4 “Guidance on the validity of radiocommunications equipment installed and used on ships” which is due to come into force 1 January 2028.

“To ensure radiocommunication capability in the ship-to-ship, ship-to-shore and shore-to-ship directions, all VHF radiocommunication equipment on board ships required by SOLAS regulations IV/7.1.1, 7.1.2 and 7.1.6, including the duplicated equipment in accordance with regulations IV/15.6 and 15.7, should comply with the latest channel arrangements in appendix 18 of the RR, by the first radio survey scheduled on or after 1 January 2028, or earlier, as appropriate.

Ships should be capable of transmitting and receiving VHF radiotelephony with the shore facilities in their area of operation, noting that some administrations may have already implemented the new available channels prior to 1 January 2028.”

**WRC-27 agenda item 1.12, current and future use of the 1645.5 -1646.5 MHz band**

ITU-R Working Party 4C had submitted a liaison statement to IMO on the current and future use of the 1645.5 -1646.5 MHz band, which will be discussed at WRC-27 under agenda item 1.12. The Sub-Committee also noted that this frequency band was previously allocated for use by L-band EPIRB, a service which was discontinued on 31 December 2006. The Sub-Committee recognised the importance of this issue and invited interested Member States and international organizations to submit relevant contributions to the twentieth meeting of the Joint IMO/ITU Experts Group.

**S-100**

Regarding the S-100 implementation issue, several views were expressed: Standard service interfaces with information security protection are necessary for all S-100 products, and joint efforts by Member States, manufacturers, and industries are required. Additionally, various communication systems are considered potential means for exchanging S-100 products, but trials and demonstrations are needed to verify their capabilities, especially considering the dynamic and static nature of some products and the potential increase in file size for certain product packages.

With regard to the training needs of seafarers, NCSR invites the HTW Sub-Committee to consider revision of model course 1.27 on Operational use of ECDIS given that the performance standards for ECDIS had been revised by resolution MSC.530(106) to introduce S-100 standards and provisions for route exchange between ship and shore using S-421 and SECOM (IEC 63173-2 ED1).

NCSR encourages Member States to share their experiences and results from testing S-100 products, noting the voluntary installation of S-100 ECDIS on ships starting 1 January 2026. They recommend urgent consideration of standard service interfaces, the use of shore-to-ship communication systems for exchanging S-100 products, and assessing these systems' capabilities, inviting interested Member States to submit proposals for new outputs to MSC 109.

# Action requested of the Committee

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