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# INTERNATIONAL 31.10.2023

# *IMO/ITU*

# Report of 19th Joint IMO/ITU EG meeting

Note by the IALA representative Stefan Bober

#### BACKGROUND

The 19th meeting of the Joint IMO/ITU Expert Group on Maritime Radiocommunication Matters was held at IMO Headquarters in London from 9th to 13th October 2023. Chairman was Mr. Christian Rissone. IALA is an observer in consultative status and was represented by Stefan Bober for the meeting.

#### Introduction

The meeting of the Joint IMO/ITU Expert group is an annually meeting held at IMO to exchange information on maritime radiocommunication matters between IMO and ITU. The work of this Joint IMO/ITU Expert group (further referred to as the group) is one of the bases for the development of the IMO position on maritime radiocommunication matters at ITU.

The main agenda items of the meeting were:

* Briefing on the outcome of relevant IMO and ITU bodies
* Draft performance standards for NAVDAT and amendments to resolution MSC.509(105)
* Revision of resolution A.1001(25) - PROVISION OF RECOGNISED MOBILE SATELLITE SERVICES FOR THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)
* Consideration of matters related to VDES
* Improving the security and integrity aspects of AIS
* Presentation on "AIS security" by Gareth Wimpenny, CIRM
* Presentation on "VHF Date Exchange System" by Hideki Noguchi, Japan

#### issues related to IALA work addressed during the Joint IMO/ITU EG meeting

##### • Draft performance standards for NAVDAT

The group reviewed the draft performance standards for the reception of maritime safety information and search and rescue related information by MF and HF digital navigational data system (NAVDAT) and the draft amendments to resolution MSC.509(105) on Provision of radio services for the Global Maritime Distress and Safety System (GMDSS) to include a new annex 5 on criteria for use when providing a NAVDAT service.

The group agreed that there was no compelling need to establish an effective date for the installation of NAVDAT receiver equipment.

Group invited the NCSR Sub-Committee to consider the draft new annex 5 to resolution MSC.509(105), on criteria for use when providing a NAVDAT service, with a view to finalization.

##### REVISION OF RESOLUTION A.1001(25) - PROVISION OF RECOGNISED MOBILE SATELLITE SERVICES FOR THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

The Group considered the interim report of the Correspondence Group on the Revision of resolution A.1001(25). he Group invited the Coordinator of the Correspondence Group to further progress the revision of resolution A.1001(25) and submit a final report to the NCSR Sub-Committee.

##### CONSIDERATION OF MATTERS RELATED TO VDES.

Mr. Hideki Noguchi, Japan, introduced the topic with a short presentation on the "VHF Date Exchange System".

The Group reviewed the interim report of the Correspondence Group on VHF Data Exchange System (VDES). The interims report contains a draft analysis report on VDES and its communication components from technical, regulatory and operational aspects, including the user interface, the human element, and the financial implications. The draft amendments to the SOLAS Convention, the draft VDES performance standards and other preliminary draft relevant instruments could not be fully developed and were not prepared by the correspondence group

The Group noted that IMO should determine the services and/or applications for VDES. In this context, information on existing studies should be made available to better understand the potential capabilities and applications of VDES.

With regard to the possible use of VDES for the dissemination of MSI and/or SAR related information, views were expressed indicating that:

* amendments to both SOLAS chapter IV and the Radio Regulations, in particular appendix 15, would be required to ensure protection of the frequencies used by VDES-VDE-satellite;
* any required regulatory actions by ITU would only be possible at the future competent WRC;
* recognition by IMO might be necessary;
* VDES could be used to support the MSI disseminated by other means;
* national administrations may implement different solutions, in addition to the GMDSS, for the dissemination of MSI within their own jurisdictions; and
* VDES applications should be developed and coordinated at international level in order to ensure unified implementation.

The group considered that more information was needed regarding the display and presentation capabilities of the VDES equipment, in particular how VDES equipment would interact with other equipment on board and whether consequential amendments to the performance standards for other equipment would be required.

The Group invited the Coordinator of the Correspondence Group to further progress the development and submit a final report to the NCSR Sub-Committee for consideration.

##### Improving the security and integrity aspects of AIS

MSC 107 approved a new output on ʺIdentification of measures to improve the security and integrity aspects of AISʺ and its inclusion in the provisional agenda of NCSR 11. The new output was included in order to:

* investigate how ships without proper registration were able to obtain maritime mobile service identity (MMSI) numbers, in particular to manipulate AIS data transmissions; and
* consider the review of hardware and software security standards for preventing the tampering of AIS transponders.

The Group had an initial discussion on the matter:

* AIS was originally developed without encryption or authentication capabilities for the transmitted data, which makes it vulnerable to spoofing and manipulation;
* while it was not possible to prevent changes to MMSI numbers configured in AIS transponders, national authorities could adopt deterrent measures, for example, by prohibiting users from configuring static information on their Class B AIS equipment;
* monitoring of AIS transmissions by national authorities could help identifying and detecting manipulated AIS messages;
* the ITU Maritime mobile Access and Retrieval System (MARS) and national LRIT databases could be a valuable resource for verification of MMSI numbers used in AIS transmissions.
* VDES could provide a way to improve message authentication and thus enhancing security aspects of AIS;
* the new IALA Guideline on VDES VDL Integrity Monitoring provides valuable insights into detecting and mitigating vulnerabilities in VDES VDL and AIS;
* the IALA Guideline G1161 on Evaluation of platforms for the provision of maritime services in the context of e-navigation included provisions for cybersecurity measures to enable identification and authentication of users, devices, objects and services for shore-based users.

After discussion, the Group concluded that:

* from a technical standpoint, there were no inherent safeguards to prevent manipulation of AIS due to the open nature of the AIS protocol, which lacks built-in authentication mechanisms, making it challenging to entirely eliminate tampering possibilities;
* national authorities could implement active monitoring of AIS transmissions to detect anomalies or suspicious AIS messages; and
* national authorities could also conduct regular audits and inspections of ships' AIS equipment and enforce regulations against unauthorized configuration of AIS equipment or inadequate use of AIS.

Mr. Gareth Wimpenny, CIRM, gave a presentation on "AIS security" with emphasis on message authentication and trials conducted at GRAD in the UK. The presentation received a lot of interest. Authentication of ASM, and AtoN messages has the potential to be one of the important use cases for VDES.

#### IALA IS REQUESTED TO

**Note** the report of 19th Joint IMO/ITU EG meeting