IALA RECOMMENDATION (NORMATIVE)

R0144
HARMONIZED IMPLEMENTATION OF APPLICATION SPECIFIC MESSAGES (ASM)

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DOCUMENT REVISION

Revisions to this document are to be noted in the table prior to the issue of a revised document.

Date	Details	Approval
June 2011	1st issue	Council 52
December 2020	Edition 1.1 Editorial corrections.	Council 72
December 2025	Updating of the reference documents	Council 03

THE COUNCIL

RECALLING:

1 The aim and objectives of the International Organization for Marine Aids to Navigation (the Organization hereafter) with respect to the improvement and harmonization of Marine Aids to Navigation worldwide for the benefit of the maritime community and the protection of the marine environment;
2 Article 8 of the Convention of the Organization regarding the responsibilities of the Council.
3 Automatic Identification Systems (AIS) may use binary messages for the transmission of Application Specific Messages (ASM) as a means for a certain type of communication;

4 The VHF Data Exchange System (VDES) includes functions for AIS, ASM, and VHF Data Exchange (VDE).

RECOGNIZING:

1 Regulation 13 of Chapter V of the *SOLAS Convention 1974*, as amended, on the establishment and operation of aids to navigation (AtoN);

2 Regulation 10 of Chapter V of the *SOLAS Convention 1974*, as amended, on ships' routeing systems;

3 Regulation 4 of Chapter V of the *SOLAS Convention 1974*, as amended, on navigational warnings.

RECOGNIZING FURTHER:

1 The work carried out by IALA on ASM systems has facilitated the development and adoption of technical and operational publications by other bodies such as IMO, ITU, etc.;
2 IMO through the publication of SN/Circ. 289 has updated the internationally recognized definitions of ASM for operational digital communication through the use of AIS;

3 IMO through SN/Circ. 290 provided basic guidance on portrayal issues;

4 The World Radiocommunication Conference 2015 (WRC-15) allocated frequencies for VDE terrestrial (reception and transmission), ASM terrestrial (reception and transmission) and ASM satellite reception;

5 The World Radiocommunication Conference 2019 (WRC-19) allocated frequencies for the VDE satellite (reception and transmission);

6 ITU-R M.1371-5, Annex 4 provides technical guidance on the use of ASM;

7 ITU has developed Recommendation ITU-R M.2092 Technical characteristics for a VHF Data Exchange System in the VHF maritime mobile band; and

8 IMO MSC-110th session has approved the inclusion of VDES in Chapter V of the International Convention for SOLAS, and has passed draft amendments to appendices such as *Performance Standards for Shipborne VHF Data Exchange System (VDES)* and *Guidelines for the Operational Use of Shipborne VHF Data Exchange System (VDES)*.

NOTING:

1 The definition and applicability of Regional ASM is under the responsibility of the National Competent Authority responsible for the relevant Designated Area Code (DAC) of a Regional ASM;

2 The use of Regional ASM for various operational purposes is widespread and developing rapidly;

3 The VDES has a wide range of applications, VDES provides AIS, ASM, VDE;

4 VDES provides a solution to the current AIS overload problem, reduces the pressure of AIS data communication, and improves the quality of maritime communication;

5 In the VDES components, ASM technology is relatively mature and has a certain application foundation;

6 The work carried out by IALA on shipborne automatic identification systems has facilitated the development and adoption of a suite of technical and operational publications by other bodies such as IMO, ITU, IHO and IEC; and

7 It is desirable to continuously explore the use cases and applications in enabling maritime services.

NOTING ALSO that IALA at the request of the ITU is maintaining Technical Characteristics for Recommendation ITU-R M.1371 and M.2092 to support harmonization of its member's application of AIS/VDES;

CONSIDERING:

1 The various applications of AIS/VDES have been identified by IMO, ITU, IEC and IALA;

2 The strategic elements of the IMO e-Navigation strategy and the supportive work undertaken by the Digital Technologies Committee of IALA;

3 The collection of definitions of Regional ASM IALA has previously initiated with the aim of facilitating and identifying the potential for harmonization, and the existence of an updated collection with a user-friendly web access portals accessible via the IALA website;

4 The submission of Regional ASM to the IALA collection is not a matter of approval, but a matter of collecting the Regional ASM in use;

5 The establishment of a formal Register for ASM and a related governance process would occur after the initial collection process;

6 The further clarification of ASM message format when promoting ASM applications;

7 The differences of broadcasting methods and formats of AIS-ASM and VDES-ASM, the following factors need to be considered:

- ASM message type. AIS-ASM only has four types of messages, and VDES-ASM has added regional geographic multicast, scheduled addressing and broadcast information, and recurring addressing and broadcast information;
- The AIS component of VDES should be capable of providing all modes of operation as described in Recommendation ITU-R M.1371;

- Link ID (number of time slots, FEC, SAT). According to ITU-R M.2092-1, VDES-ASM includes 7 types of Link IDs.

RECOMMENDS that Member States and other appropriate authorities:

1 Recognize the urgency of the need for harmonization of content, encoding, application and portrayal of ASM to facilitate communications, including data exchange, among ship to ship, ship to shore, shore to ship, shore to shore and other users, through digital communication links;

2 Support the efforts of IALA to collect the definitions, applications and portrayal guidance on AIS Application Specific Messages of regional applications for AIS Binary Messages and submit their information to the online IALA collection, taking into account the rapid development in the use of Regional ASM for various purposes;

3 Take the steps necessary to ensure that a National Competent Authority is assigned the responsibility for managing the use of Regional ASM, as well as monitoring and managing the use of the AIS VHF Datalink, to ensure its safe function for safety of navigation;

4 Make use of the IALA ASM collection by taking into account other updated definitions of ASM and related guidance, before developing new or implementing the use of existing Regional ASM;

5 Contribute to the efforts of the DTEC Committee to further develop guidelines for the harmonized implementation of ASM for use via AIS or other means of digital communication;

6 Ensure that other relevant parties engaged in the use of ASM to contribute to the IALA ASM collection through their Member State;

7 Fully utilize the capacity and functionality of VDES by:

- Implementing VDES shore infrastructure
- Implementing VDES data integrity monitoring at the VDES link level
- Expanding of VDES application scope requires coordination and resource sharing from multiple parties
- Addressing network security issues
- Giving its highest priority to AIS position reporting and safety-related information, followed by second priority to ASM, third priority to VDE-TER and then to VDE-SAT
- Separately disabling VDE-SAT, VDE-TER, or ASM.

8 Fully consider the compatibility between VDES-ASM and AIS-ASM by:

- Selecting the appropriate carried message type according to the application type;
- Introducing a flexible message mechanism as much as possible, when drafting the ASM binary information standard;
- Selecting reasonably the Link ID type based on the broadcast method and content, and physical channels, data length and importance.

INVITES Member States and Marine Aids to Navigation authorities worldwide to implement the provisions of the Recommendation.

REQUESTS the DTEC Committee and other IALA committees to keep the Recommendation under review and to propose amendments as necessary.