

MARITIME SAFETY COMMITTEE
96th session
Agenda item 14

MSC 96/INF.10
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NAVIGATION, COMMUNICATIONS, SEARCH AND RESCUE

Progress made in the development of the VHF Data Exchange System (VDES)

**Submitted by the International Association of
Marine Aids to Navigation and Lighthouse Authorities (IALA)**

SUMMARY

<i>Executive summary:</i>	This document provides information on the progress made in the development of the VHF Data Exchange System (VDES), especially considering the outcome of WRC-15
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.4, 5.2.5 and 5.2.6
<i>Output:</i>	No planned output
<i>Action to be taken:</i>	Paragraph 13
<i>Related documents:</i>	MSC 95/INF.12; NCSR 3/17/1 and NCSR 3/INF.21

Introduction

1 At the ninety-fifth session of the Maritime Safety Committee, Japan, Sweden and IALA submitted an information document that provided information on the present status of the development of the VDES (MSC 95/INF.12).

2 At the World Radiocommunication Conference 2015, WRC-15 (NCSR 3/17/1 and NCSR 3/INF.21), under the agenda item 1.16, the following was agreed:

- .1 WRC-15 agreed on regulatory provisions and frequency allocations to enable new Automatic Identification System (AIS) applications and other possible new applications to improve maritime radiocommunication. These new applications for data exchange are intended to improve the safety of navigation; and
- .2 WRC-15 made new allocations in the bands 161.9375-161.9625 MHz and 161.9875-162.0125 MHz for the maritime mobile-satellite service in the uplink and amended the channeling arrangement for VHF maritime frequencies contained in ITU RR Appendix 18.

3 While the proposed allocation for the maritime mobile-satellite service (MMSS) in the downlink in the requested frequency band (161.7875-161.9375 MHz) was not agreed at WRC-15, the use of satellite communications for VHF data exchange was agreed. WRC-15 agreed to further studies of compatibility between MMSS and incumbent services in the same and adjacent frequency bands, for consideration by WRC-19.

4 The WRC-15 developed the following agenda for WRC-19 that is related to the development of the VDES:

- .1 to consider modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of Appendix 18, to enable a new VHF Data Exchange System (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in *recognizing d) and e) of Resolution 360 (Rev.WRC-15) (agenda item 1.9.2).*

Discussion

5 The WRC-15 agreed to all terrestrial components of the VDES including newly allocated channels 2027 (ASM 1) and 2028 (ASM 2). With the frequencies now agreed, development of the VDES can continue with close cooperation between a number of international organizations including IALA and IEC. The leadership of the IMO is important in the development of the VDES to ensure that it will contribute to the implementation of e-navigation and modernization of GMDSS.

6 In addition to agreement on the terrestrial aspect of the VDES, and the satellite uplink for ASM 1 and ASM 2, the WRC-15 agreed that studies of the remaining satellite components of the VDES will continue until the WRC-19.

7 The present functions of the VDES, as agreed at WRC-15, are illustrated as figure 1. The full functionality of the VDES, including the additional satellite component, is provided in figure 2 (as presented to IMO in MSC 95/INF.12 figure 1).

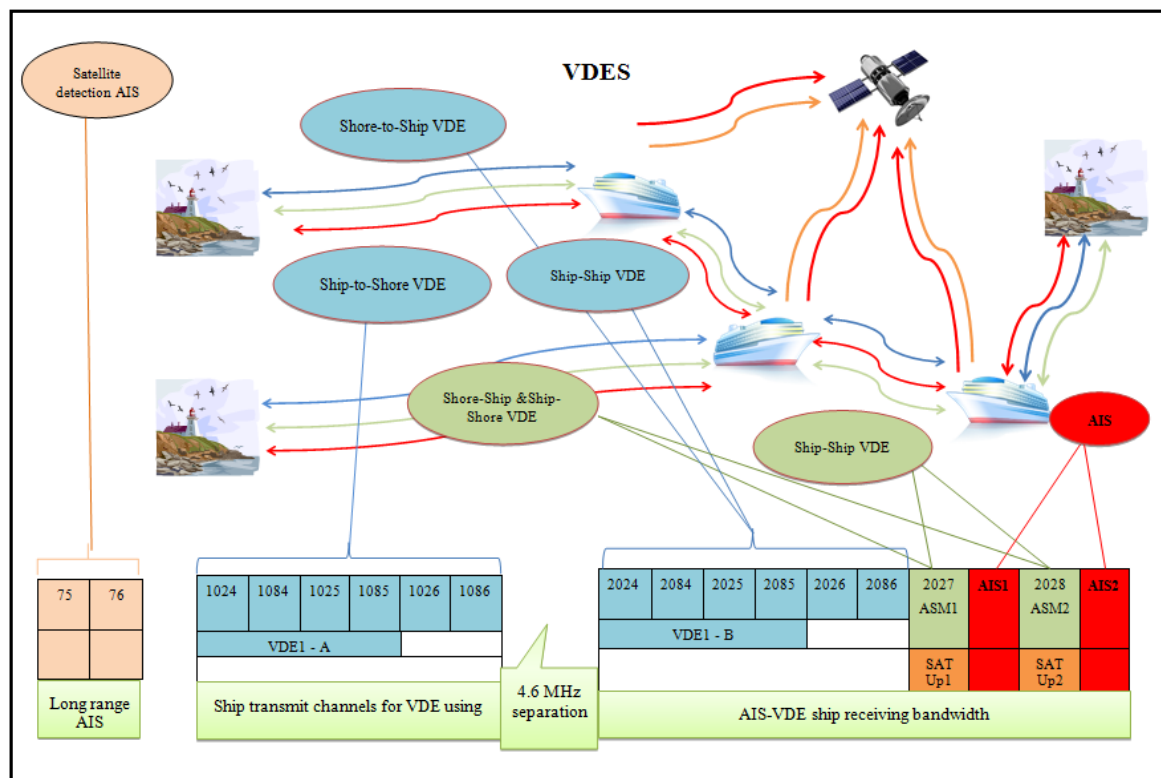


Figure 1: VDES elements agreed at WRC-15

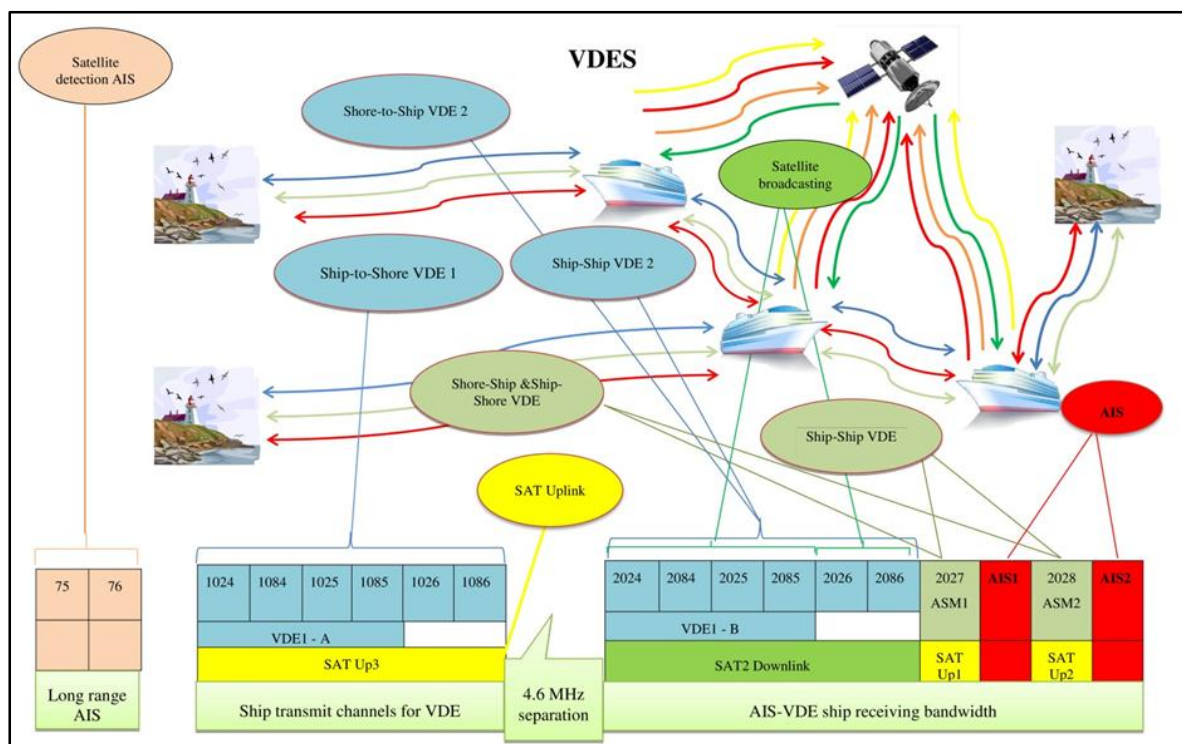


Figure 2: Full VDES capability

8 The additional satellite components of the VDES, especially satellite downlink capability, is very important since it enables the benefits of the VDES to reach beyond the coverage of shore based VDES and thus ships can exchange digital data worldwide. For example, ships could receive updated data of an ice map, the latest weather or a recommended route developed by the shore authority while navigating in a polar area. Ships could receive information on software updates for digital navigation equipment while navigating high sea. The satellite component also provides the ability for shore authorities of developing countries to establish a VHF digital network without additional shore infrastructure investment.

IALA contribution

9 IALA has been engaged in the development of the VDES since WRC-12. Some examples of the IALA work to support the development of the VDES include the preliminary documents towards the draft ITU Recommendation and Report regarding the VDES and the development of an e-navigation testbed reporting process, which includes VDES testbeds.

10 In addition to the development of the draft ITU documentation, IALA has actively participated in the ITU process.

11 Following the conclusion of the WRC-15, IALA organized meetings, workshops and a conference regarding e-navigation, which included discussion on the VDES. In particular, the IALA Workshop on Development of VHF Data Exchange System (VDES), held in Tokyo, Japan and co-sponsored by the Japan Coast Guard in February 2016 is noteworthy. The participants at these meetings, workshops and conference showed great interest in the implementation of e-navigation and the realization of full VDES capability.

12 IALA intends to continue its contribution to both the development of the terrestrial components of the VDES and the studies of the satellite components of the VDES. This will include ongoing participation with the ITU and reporting on the additional satellite component working towards the WRC-19.

Action requested of the Committee

13 The Committee is invited to note the information provided.
