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Belgisch Instituut voor
postdiensten en telecommunicatie

Communication of the BIPT Council of 30 August 2022 on the use of analogue/digital channels to ensure implementation of the VHF Data Exchange System (VDES) in the programming of marine VHF radiotelephones

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1. Introduction - Technical reminder: the VDE system (VHF Data Exchange System) or VDES

1.1. VDES components

1. At the latest World Radiocommunication Conferences (WRC[1]-15 and WRC-12) it was decided to identify certain channels in the maritime VHF[2] band for digital applications (Appendix 18[3] to the Radio Regulations of the International Telecommunication Union (ITU[4])).

2. The WRC-15 (agenda item 1.16) decided that a new system would be introduced for data exchange (the VDES[5]). The VDES was developed in order to create additional capacity, provide better performance and enable new applications (e-navigation). The concept is that different channels are combined to form a larger bandwidth. This will allow a larger amount of information to be exchanged. This system entails among other things:

   - the introduction of specific channels (called ASM[6]1 and ASM2) for the exchange of "application specific messages";

   - the continuation of the existing Automatic Identification System (AIS[7]); it is used by ships and by Vessel Traffic Stations (VTS). The goal is to identify and locate vessels by means of an electronic exchange of data (among other things the unique identification, the location, the course and the speed). As regards Belgium, AIS is moreover especially important to the vessel traffic on the Scheldt and ship movement in the Port of Antwerp. In the context of modernising the GMDSS[8] system it cannot be excluded that the AIS technology will play a more important role;

   - the combination of 4 channels of 25 kHz (channels of Appendix 18) into a single 100 kHz channel in order to improve the exchange of data and communications between ship and shore.

3. At the WRC-15 a consensus was reached on the identification of ASM, the protection of the existing AIS, the identification of the ground component of the VDE system and the international VDE channels. Regarding the satellite component of the VDE system, it was agreed to further investigate the spectrum problem for the satellite component at the WRC-19.

4. The channels identified by the WRC-15 are the following:

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[1] WRC: World Radiocommunication Conference (ITU)
[2] VHF: Very High Frequency
[3] https://www.bipt.be/operators/publication/communication-by-the-bipt-council-of-24-may-2018-on-the-future-use-of-analoguedigital-channels-as-provided-for-in-rr-appendix-18
[4] ITU: International Telecommunication Union
[5] VDES: VHF data exchange system
[6] ASM: Application Specific Message
[7] AIS: Automatic Identification System
[8] Global Maritime Distress and Safety System

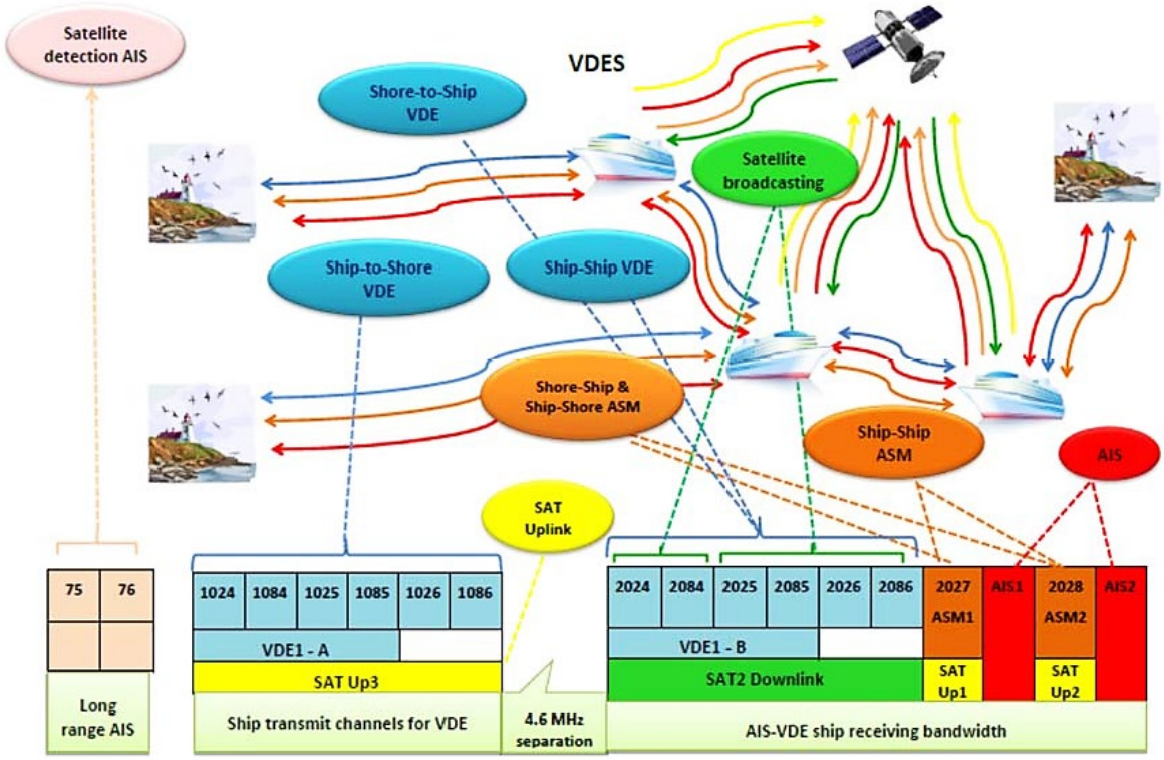
- the VDE system (worldwide): 24, 84, 25, 85, 26 and 86. The first 4 channels will be regrouped into a duplex channel of 100 kHz. ITU-R M2092 Recommendation ("Technical characteristics for a VHF data exchange system in the VHF maritime mobile band") contains the recommended technical characteristics for the VDE system;

- the ASM channels: channel 2027 and 2028 (respectively ASM1 and ASM2). Channels 1027 and 1028 will become simplex channels.

- the regional VDES: digital technologies on channels 80, 21, 81, 22, 82, 23 and 83. The ITU-R M1842 Recommendation ("Characteristics of VHF radio systems and equipment for the exchange of data and electronic mail in the maritime mobile service RR Appendix 18 channels") contains the recommended characteristics for these digital technologies.

1.2. Schematic representation of the VDES

The following figure is based on the ITU-R M.2092 Recommendation ("Technical characteristics for a VHF data exchange system in the VHF maritime mobile band"), but has been adapted to the WRC-15 decisions. The BIPT expects that the ITU-R M.2092 Recommendation will be adapted.



1.3. VDES frequencies

Technology	Radio frequencies used	Channel number in the RR
AIS 1	161.975 (25 kHz)	87B
AIS 2	162.025 (25 kHz)	88BB
AIS Long Range 1	156.775 (25 kHz) (ships TX only)	75
AIS Long Range 2	156.825 (25 kHz) (ships TX only)	76
ASM 1	161.950 (25 kHz)	2027
ASM 2	162.000 (25 kHz)	2028
VDE 1	157.200 to 157.275 (100 kHz) (Ship TX) *and 157.300 + 157.325 (25 kHz)*	1024, 1084, 1025 and 1085 combined *+ 1026 and 1086*
VDE 2	161.800 to 161.875 (100 kHz) (Ship RX) *and 161.900 + 161.925 (25 kHz)*	2024, 2084, 2025 and 2085 combined *+ 2026 and 2086*

2. Background

5. The Communication by the BIPT Council of 24 May 2018[9] on the future use of analogue/digital channels as provided for in RR[10] Appendix 18 is part of the implementation of the VDES (VHF Data Exchange System), a radio communication system for which a distinction needed to be made between regional VDES and global VDES.

6. The Institute has already indicated that the **regional** VDES will not be implemented and that consequently channels 21, 22, 23, 80, 81, 82 and 83 will not be cleared, so that they remain available for voice communications. The fact of the matter is that analogue voice telephony is and remains the main form of maritime radio communications. Such voice telephony is essential to the safety of navigation in harbours and for the operation of waterways.

7. However, the implementation of the **global** VDES[11] in these communications by means of channels 24, 25, 26, 84, 85, 86, 2027 and 2028 is planned in the long run. Therefore those channels had to remain available for voice communications in Belgium and on the Westerscheldt until a date that would be announced at a later time.

8. In the meantime new digital radio equipment has been developed. Within the maritime VHF band various systems coexist: analogue voice telephony; AIS (Automatic Identification System) and digital data exchange.

9. As a consequence, this communication lays down that certain channels remain available for data transfer only and no longer for analogue voice communications.

[9] https://www.bipt.be/operators/publication/communication-by-the-bipt-council-of-24-may-2018-on-the-future-use-of-analoguedigital-channels-as-provided-for-in-rr-appendix-18
[10] RR: ITU Radio Regulations
[11] ITU-R M.2092 Recommendation

10. This communication replaces the communication of 24 May 2018 in order to comply with the CEPT[12] regulation (ECC[13] Decision (19)03[14] — Harmonised usage of the channels of the Radio Regulations Appendix 18 (transmitting frequencies in the VHF maritime mobile band), which provides for a "cleaning period" to ensure the end of analogue voice telephony on those channels.

11. Concretely, the changes relate to channels **24, 25, 26, 27, 28, 84, 85** and **86**, which starting from 1 January 2023, will not be allowed to be used anymore for analogue voice communications.

12. **Therefore, those channels should be adapted to the table below:**

Channel	Current use	Future use
24	Duplex	Digital - the channel must be blocked for analogue voice communications
25	Duplex	Digital - the channel must be blocked for analogue voice communications
26	Duplex	Satellite - the channel must be blocked for analogue voice communications
27	Duplex	The channel must be divided into 1027 (authorised analogue voice communications) and 2027 (forbidden analogue voice communications)
28	Duplex	The channel must be divided into 1028 (authorised analogue voice communications) and 2028 (forbidden analogue voice communications)
84	Duplex	Digital - the channel must be blocked for analogue voice communications
85	Duplex	Digital - the channel must be blocked for analogue voice communications
86	Duplex	Satellite - the channel must be blocked for analogue voice communications

13. As for the **coast stations** each marine VHF radiotelephone should be made to comply with the new channel division in the table above **no later than 1 January 2023**.

14. As for the **ship stations** (both professional and merchant shipping, and pleasure cruising), taking account of the time pressure experienced in practice to adapt all those stations, each marine VHF radiotelephone should comply with that new channel division in the table above **no later than 31 December 2023**.

15. Because the Institute has chosen to pursue optimum harmonisation with the Netherlands for the use of the channels, marine VHF radiotelephones used for pleasure cruising must in addition programme channel 31 (TX: 157.550 MHz RX: 162.150 MHz) in order to be able to contact marinas in Belgium **from 1 January 2023**.

[12] CEPT: European Conference of Postal and Telecommunications Administrations
[13] ECC: Electronic Communications Committee
[14] https://docdb.cept.org/download/907b31ea-4d89/ECCDec1903.pdf

3. Communication

16. The regional VDES channels 21, 22, 23, 80, 81, 82 and 83 (ITU-R M.1842 Recommendation) will continue to be used in Belgium for voice communications.

17. The VHF channels 24, 25, 26, 84, 85, 86, 2027 and 2028, which had been identified for global VDES, may no longer be used for analogue voice communications **starting from 1 January 2023**.

18. The VHF channels 24, 25, 26, 84, 85, 86, 2027 and 2028, which had been identified for global VDES, must be switched over for the ship stations in accordance with the table indicated in item 12 between **1 January 2023** and **31 December 2023**.

19. The coast stations must be made to comply with the new channel division as laid down in item 12 before 1 January 2023.

20. The communication of 24 May 2018 on the future use of analogue/digital channels as provided for in RR Appendix 18 is cancelled.

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