



ECC Decision (19)03

Harmonised usage of the channels of the Radio Regulations Appendix 18 (Table of transmitting frequencies in the VHF maritime mobile band)

approved 8 March 2019

amended 28 June 2024

EXPLANATORY MEMORANDUM

1 INTRODUCTION

The ITU Radio Regulations (RR) Appendix 18 [1] lists the frequencies in the VHF maritime mobile band. The World Radiocommunication Conference-2012 (WRC-12) and the World Radiocommunication Conference-2015 (WRC-15) decided to implement digital data exchange for the maritime mobile service into the VHF maritime mobile band. Digital data exchange for the maritime mobile satellite service in the VHF maritime mobile band was implemented in the same frequency band by the World Radiocommunication Conference-2019 (WRC-19). The implementation of digital data exchange in RR Appendix 18 leads to a new understanding of the related devices. Before this implementation, with the exception of the automatic identification system (AIS) on channels AIS1 (161.975 MHz) and AIS2 (162.025 MHz) and digital selective calling (DSC), all the remaining listed channels were used for analogue voice communication. With the digital data exchange allocations, some channels will be used for data transfer and not for voice communication any longer. New digital radios have been developed, which is different equipment than the current voice communication radios. As a result, the frequencies in the VHF maritime mobile band are now shared by four different systems: analogue voice telephony, DSC, AIS and digital data exchange.

Analogue voice telephony is the most important form of communication in the maritime mobile service as a safety related service, including port operations service and ship movement service. DSC is used for distress alerts, urgency and safety announcements and routine calls. The AIS is a collision avoidance system to enhance the safety of navigation. Recommendation ITU-R M.1371 [5] includes technical characteristics for AIS using time-division multiple access in the VHF maritime mobile band.

The implementation dates of 1 January 2017, 1 January 2019 and 1 January 2021 in RR Appendix 18 decided by WRC-12, WRC-15 and WRC-19 gave the possibility of digital data exchange in the VHF maritime mobile band and created uncertainty about the use of VHF channels. As a result, some manufacturers already placed VHF equipment for analogue voice telephony on the market that does not allow the user to select channels which are currently assigned for port operations services and ship movement services by administrations. This interruption of voice communication between a vessel traffic centre and a vessel might lead to dangerous traffic situations.

The risk of dangerous traffic situations based on different interpretation of the footnotes of RR Appendix 18 was also recognised by the International Maritime Organization (IMO). The Maritime Safety Committee (MSC) of IMO decided in its 98th session in June 2017 *"that VHF equipment, without prejudice to the arrangements contained in appendix 18 of the RR, should be updated so that following the first radio survey after 1 January 2024¹, at the earliest, it meets the arrangements which will be in force by then."* This ensures the GMDSS (Global Maritime Distress and Safety System) communication capability and the availability of appropriate GMDSS radiocommunication equipment. This ECC Decision is intended to give guidance to manufacturers, retailers and users throughout CEPT countries, that the implementation of digital data exchange into the VHF maritime mobile band should take place in CEPT countries within a common timeframe.

Furthermore, this ECC Decision gives guidance for the harmonised usage of the RR Appendix 18 for both the terrestrial and satellite components of the VHF data exchange systems (VDES).

The VDES has data communications capability and technical characteristics that have the potential to support the harmonised collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth-to-berth navigation and related services for safety and security at sea and protection of the marine environment.

2 BACKGROUND

WRC-15 and WRC-19 identified the frequency bands corresponding to channels: 24, 84, 25, 85, 26 and 86 of RR Appendix 18 [1] for the utilisation of the VDES as described in the most recent version of Recommendation

¹ The Maritime Safety Committee (MSC) of IMO decided in its 107th session in June 2023 to revise this date to 1 January 2028.

ITU-R M.2092 [3]. Only these channels are available for a global usage for the terrestrial and satellite components of the VDES.

For ITU Regions 1 and 3, WRC-15 also identified the frequency bands corresponding to channels: 80, 21, 81, 22, 82, 23 and 83 for the utilisation of the digital systems as described in the most recent version of Recommendation ITU-R M.1842 [4], using multiple 25 kHz contiguous channels. This identification of frequencies allows the utilisation of a regional VDES. This regional utilisation was supported by Asian and African countries.

The channels 80, 21, 81, 22, 82, 23 and 83 may also be used for analogue modulation described in the most recent version of Recommendation ITU-R M.1084 [6] by an administration that wishes to do so. It is subject to not claiming protection from other stations in the maritime mobile service using digitally modulated emissions and subject to coordination with affected administrations.

CEPT administrations recognise the importance of a harmonised channel arrangement in the VHF maritime mobile band listed in RR Appendix 18. Some channels to be used for VDES are presently assigned to coast stations for analogue voice telephony. It is therefore necessary to ensure that changes to assignments for ship movement and port operations service continue to provide satisfactory communications. Specific footnotes of RR Appendix 18 are dealing with the implementation of digital data exchange, amendments of parts in AIS and the usage of analogue voice telephony. In particular this ECC Decision is dealing with the footnotes, which are relevant for ITU Region 1.

The implementation of VHF digital data exchange is mentioned in several footnotes of RR Appendix 18, which oblige administrations to amend the usage of VHF channels and frequency assignments for coast stations in their responsibility. These amendments require coordination by affected administrations.

In June 2023, IMO's Maritime Safety Committee (MSC) published circular MSC.1-Circ.1460-Rev.4 - Guidance on the validity of radiocommunication equipment installed and used on ships [2] stating:

“To ensure GMDSS communication capability and the availability of appropriate GMDSS radiocommunication equipment, and without prejudice to the arrangements contained in appendix 18 of the RR, VHF radiocommunication equipment should be updated so that following the first radio survey after 1 January 2028, at the earliest, it meets the arrangements which will be in force by then”.

ECC supports the implementation of footnotes for digital data exchange in the VHF maritime mobile band. Based on different options and different implementation dates the development of this ECC Decision was initiated.

ECC identified a need of harmonised action and recognised that:

- relevant footnotes of RR Appendix 18 have to be considered and might be implemented in different ways;
- decisions on implementation of footnotes of RR Appendix 18 need to be taken by ECC;
- a time schedule for the implementation of these footnotes needs to be decided by ECC;
- this ECC Decision takes into account the existing standardisation framework and activities at the worldwide level, and an appropriate frequency arrangement.

3 REQUIREMENT FOR AN ECC DECISION

ECC recognises that there is a compelling need for clear advice on the usage of the frequencies in the VHF maritime mobile band to manufacturers, retailers and users to guarantee the communication between the vessels and ship movement services or port operation services to avoid dangerous traffic situations.

ECC is of the view that the implementation of the footnotes for digital data exchange into the VHF maritime mobile band should take place in CEPT countries within a common timeframe to ensure an effective usage of spectrum.

ECC DECISION OF 8 MARCH 2019 ON THE HARMONISED USAGE OF THE CHANNELS OF THE RADIO REGULATIONS APPENDIX 18 (TRANSMITTING FREQUENCIES IN THE VHF MARITIME MOBILE BAND) (ECC/DEC/(19)03), AMENDED 28 JUNE 2024

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that WRC-15 and WRC-19 amended the ITU Radio Regulation (RR) Appendix 18 [1];
- b) that in addition to analogue voice telephony, DSC and AIS, digital data exchange will be operated on RR Appendix 18 frequencies;
- c) that RR Appendix 18 footnotes *w)* and *wa)* allow a different usage of VHF channels subject to coordination with affected administrations;
- d) that RR Appendix 18 footnote *m)* allows to operate existing duplex channels as single frequency channels subject to coordination with affected administrations;
- e) that the channels ASM 1 (161.950 MHz) and ASM 2 (162.000 MHz) are designated for transmission of the application specific messages (ASM);
- f) that the dates of implementation for digital usage indicated in RR Appendix 18 footnotes *m)*, *mm)*, *w)*, *wa)*, *z)* and *zz)* may be difficult to comply with;
- g) that the Maritime Safety Committee (MSC) of IMO has decided that “*VHF equipment, without prejudice to the arrangements contained in appendix 18 of the RR, should be updated so that following the first radio survey after 1 January 2028, at the earliest, it meets the arrangements which will be in force by then*”;
- h) that in EU/EFTA countries the radio equipment that is under the scope of this Decision shall comply with Council Directive 2014/90/EU [8] for marine equipment or the RE Directive [7]. Conformity with the essential requirements of these Directives may be demonstrated by compliance with the applicable harmonised European standard(s) or by using the other conformity assessment procedures set out in these Directives.

DECIDES

1. that the **purpose of this ECC Decision** is to:
 - harmonise the use of the frequencies and allow free circulation of equipment operating in the VHF maritime mobile band;
 - ensure an effective usage of spectrum;
 - establish a common framework for a time schedule to implement the footnotes for digital data exchange;
 - establish a common framework for the coordination of coast stations to:
 - a) enable the usage of the indicated channels for digital data exchange;
 - b) enable the usage of the indicated ASM channels;
2. that CEPT administrations designate the frequency bands corresponding to channels: 24, 84, 25, 85, 26 and 86 of RR Appendix 18 for the use of the terrestrial and satellite components of the VDES;
3. that CEPT administrations shall not implement a regional VDES on the frequency bands corresponding to channels: 80, 21, 81, 22, 82, 23 and 83 of RR Appendix 18;

4. that CEPT administrations shall implement the decisions on VHF channels as described in Annex 1 of this Decision;
5. that CEPT administrations shall coordinate changes of channels within the time schedule as described in Annex 2 of this Decision;
6. that all stations operating in the territorial sea and inland waters² of CEPT administrations or close to national offshore installations which are subject to regulations issued by CEPT administrations shall fulfil the rules of this Decision;
7. that CEPT administrations shall ensure satisfactory communications for ship movement services and port operations service. In doing so, CEPT administrations should give due regard to the information provided in Annex 3;
8. that this Decision **enters into force** on 8 March 2019;
9. that the preferred date for implementation of this Decision shall be 8 September 2019;
10. that CEPT administrations shall ensure that this Decision is brought to the attention of the relevant maritime authorities;
11. that CEPT administrations shall communicate the **national measures** implementing this Decision to the ECC Chairman and the Office when this ECC Decision is nationally implemented.”

Note:

Please check the Office documentation database <https://docdb.cept.org/> for the up to date position on the implementation of this and other ECC Decisions.

² as defined in the United Nations Convention on the Law of the Sea (UNCLOS 1982)

ANNEX 1: RELEVANT FOOTNOTES OF APPENDIX 18 (RADIO REGULATIONS 2020) [1]

Annex 1 contains the relevant footnotes, comments on it and the basic decisions of implementation in CEPT countries in particular.

▪ **RR Appendix 18 Footnote m)**

“These channels may be operated as single frequency channels, subject to coordination with affected administrations. The following conditions apply for single frequency usage:

- *The lower frequency portion of these channels may be operated as single frequency channels by ship and coast stations.*
- *Transmission using the upper frequency portion of these channels is limited to coast stations.*
- *If permitted by administrations and specified by national regulations, the upper frequency portion of these channels may be used by ship stations for transmission. All precautions should be taken to avoid harmful interference to channels AIS 1, AIS 2, ASM 1 and ASM 2. (WRC-19)”*

Comment to footnote m):

Channels marked with footnote m) may be used in connection with the public switched telephone network (PSTN). Concerned is analogue voice telephony. To split duplex channels for simplex use maybe an advantage for port operations services and ship movement services because ships stations can follow the entire communication, in case of duplex operation only the coast station could be listened by ships. However, this does not provide two two-way simplex channels because the “upper leg” may not be used on ships. The simplex use of channels will increase congestion.

Decision on implementation of Footnote m):

Channel split based on footnote m) shall not be implemented in CEPT countries. All duplex channels marked with footnote m) remain unchanged.

▪ **RR Appendix 18 Footnote mm)**

“Transmission on these channels is limited to coast stations. If permitted by administrations and specified by national regulations, these channels may be used by ship stations for transmission. All precautions should be taken to avoid harmful interference to channels AIS 1, AIS 2, ASM 1 and ASM 2. (WRC-19)”

Comment to footnote mm):

This footnote has the same intention/content as footnote m) and is directly combined with footnote m). However, Appendix 18 lists the split channels. Footnote mm) is only valid for the “upper leg channels” 2078, 2019, 2079 and 2020.

Decision on implementation of Footnote mm):

Channels marked with footnote mm) shall not be operated in simplex mode by coast stations in CEPT countries.

Channel split based on footnote mm) shall not be implemented in CEPT countries. All duplex channels marked with footnote mm) remain unchanged.

▪ **RR Appendix 18 Footnote w)**

“The frequency bands 157.1875-157.3375 MHz and 161.7875-161.9375 MHz (corresponding to channels: 24, 84, 25, 85, 26, 86, 1024, 1084, 1025, 1085, 1026, 1086, 2024, 2084, 2025, 2085, 2026 and 2086) are identified for the utilization of the VHF Data Exchange System (VDES). The VDES terrestrial and satellite components are described in the most recent version of Recommendation ITU-R M.2092. These channels shall not be used for feeder links. The channels may be merged using multiple 25 kHz contiguous channels to form channel bandwidths of 50, 100 or 150 kHz. The channel usage is shown below:

- *The channels 1024, 1084, 1025 and 1085 are identified for ship-to-shore, shore-to-ship and ship-to-ship communications, but ship-to-satellite and satellite-to-ship communications may be possible without imposing constraints on ship-to-shore, shore-to-ship and ship-to-ship communications.*
- *The channels 2024, 2084, 2025 and 2085 are identified for shore-to-ship and ship-to-ship communications, but ship-to-satellite and satellite-to-ship communications may be possible without imposing constraints on shore-to-ship and ship-to-ship communications.*
- *The channels 1026, 1086, 2026 and 2086 are identified for ship-to-satellite and satellite-to-ship communications and are not used by the terrestrial component of VDES.*
- *The channels 24, 84, 25 and 85 are identified for ship-to-shore and shore-to-ship communications.*

The Earth-to-space component of the VDES shall not cause harmful interference to, nor claim protection from, nor restrict future development of, terrestrial systems operating in the same frequency bands.

Until 1 January 2030, the channels 24, 84, 25, 85, 26 and 86 may also be used for analogue modulation described in the most recent version of Recommendation ITU-R M.1084 by an administration that wishes to do so, subject to not causing harmful interference to, or claiming protection from other stations in the maritime mobile service using digitally modulated emissions and subject to coordination with affected administrations. (WRC-19)”

Comment to footnote w):

This footnote concerns digital data exchange based on the most recent version of Recommendation ITU-R M.2092 [3] on VHF data exchange system (VDES). Recommendation ITU-R M.2092 describes the terrestrial VHF data exchange component (VDE-TER) and the satellite component (VDE-SAT).

Decision on implementation of Footnote w):

Channels marked with footnote w) are designated to be used for VDES as described in Recommendation ITU-R M.2092. CEPT countries intend to enable the terrestrial and satellite components of VDES as described in this Recommendation. CEPT administrations will ensure that the designated frequency bands corresponding to channels: 24, 84, 25, 85, 26 and 86 of RR Appendix 18 will be available for the use of the terrestrial and satellite components of the VDES. After the implementation period, as shown in Annex 2 of this Decision, on these channels analogue voice telephony shall no longer be permitted in CEPT countries for the maritime mobile service.

▪ **RR Appendix 18 Footnote wa)**

“In Regions 1 and 3:

The frequency bands 157.0125-157.1125 MHz and 161.6125-161.7125 MHz (corresponding to channels: 80, 21, 81 and 22) are identified for utilization of the digital systems described in the most recent version of Recommendation ITU-R M.1842 using multiple 25 kHz contiguous channels.

The frequency bands 157.1375-157.1875 MHz and 161.7375-161.7875 MHz (corresponding to channels: 23 and 83) are identified for utilization of the digital systems described in the most recent version of Recommendation ITU-R M.1842 using two 25 kHz contiguous channels. The frequencies 157.125 MHz and 161.725 MHz (corresponding to channel: 82) are identified for the utilization of the digital systems described in the most recent version of Recommendation ITU-R M.1842.

The frequency bands 157.0125-157.1875 MHz and 161.6125-161.7875 MHz (corresponding to channels: 80, 21, 81, 22, 82, 23 and 83) can also be used for analogue modulation described in the most recent version of Recommendation ITU-R M.1084 by an administration that wishes to do so, subject to not claiming protection from other stations in the maritime mobile service using digitally modulated emissions and subject to coordination with affected administrations. (WRC-19)”

Comment to footnote *wa*):

This footnote concerns digital data exchange based on Recommendation ITU-R M.1842 [4], which describes different data exchange systems excluding VDES. A regional utilisation was supported by Asian and African countries. Only one system is operating in CEPT and is on a national basis only, using frequencies not related to footnote *wa*). Furthermore, this Recommendation describes systems to merge two and four 25 kHz channels to achieve 50 or 100 kHz bandwidth using multiple 25 kHz contiguous channels. The aim is to identify the relevant channels to permit the utilisation of a regional VDES.

Decision on implementation of Footnote *wa*):

Channels marked with footnote *wa*) will not be used for VDES in CEPT countries. CEPT administrations shall not implement a regional VDES on the frequency bands corresponding to channels: 80, 21, 81, 22, 82, 23 and 83 of RR Appendix 18. The channels 80, 21, 81, 22, 82, 23 and 83 will continue to be used for analogue voice telephony in duplex mode in CEPT countries.

▪ **RR Appendix 18 Footnote *y*)**

“These channels may be operated as single or duplex frequency channels, subject to coordination with affected administrations. (WRC-12)”

Comment to footnote *y*):

Footnote *y*) marks the same channels as footnote *wa*). Currently these channels are operated in many cases for port operations services or ship movement services in duplex mode in CEPT.

Decision on implementation of footnote *y*):

Channels marked with footnote *y*) shall not be operated as single frequency channels in CEPT countries. The channels 80, 21, 81, 22, 82, 23 and 83 of RR Appendix 18 shall continue to be used for analogue voice telephony in duplex mode in CEPT countries.

▪ **RR Appendix 18 Footnote *z*)**

“Channels ASM 1 and ASM 2 are used for application specific messages (ASM) as described in the most recent version of Recommendation ITU-R M.2092. (WRC-19)”

Comment to footnote *z*):

This footnote concerns AIS. To avoid an overload of AIS in areas with high traffic, it is intended to transmit some application specific messages (ASM) on the frequencies 161.950 MHz (ASM1) and 162.000 MHz (ASM2) instead. Footnote *z*) has to be noted in close relationship to footnote *zz*).

▪ **Decision on implementation of Footnote *z*):**

Channels ASM 1 and ASM 2 of RR Appendix 18 marked with footnote *z*) will be used in CEPT countries to transmit the application specific messages (ASM) on the frequencies 161.950 MHz (ASM1) and 162.000 MHz (ASM2). After the implementation period, as shown in Annex 2 of this Decision, in CEPT countries it shall no longer be permitted to use the channels previously designated as 27 and 28 for analogue voice telephony in duplex mode.

▪ **RR Appendix 18 Footnote *zz*)**

“Channels 1027, 1028, 87 and 88 are used as single-frequency analogue channels for port operation and ship movement. (WRC-19)”

Comment to footnote *zz*):

This footnote concerns analogue voice telephony. It is closely related to footnote *z*). The duplex channels previously designated as 27 and 28 cannot be used for analogue voice telephony any longer. The frequencies 157.350 MHz, 157.375 MHz, 157.400 MHz and 157.425 MHz (corresponding to channels 1027, 1028, 87 and 88) may be used for analogue voice telephony in simplex mode only.

Decision on implementation of Footnote *zz*):

Channels marked with footnote *zz*) will be used as single-frequency analogue channels for port operation and ship movement in CEPT countries. However, the channels 87 and 88 are already designated as single-frequency analogue channels for port operation and ship movement since RR Edition 1998. In CEPT countries it shall no longer be permitted to use the channels previously designated as 27 and 28 for analogue voice telephony in duplex mode.

ANNEX 2: TIME SCHEDULE OF THE IMPLEMENTATION PERIOD

The following time schedule for the implementation period is based on the footnotes of RR Edition 2020 Appendix 18 [1]. IMO's Maritime Safety Committee (MSC) circular MSC.1-Circ.1460-Rev.4 - Guidance on the validity of radiocommunication equipment installed and used on ships [2] decided that *"To ensure GMDSS communication capability and the availability of appropriate GMDSS radiocommunication equipment, and without prejudice to the arrangements contained in appendix 18 of the RR, VHF radiocommunication equipment should be updated so that following the first radio survey after 1 January 2028, at the earliest, it meets the arrangements which will be in force by then"*. RR Appendix 18 sets out amendments to be implemented by 1 January 2017, 1 January 2019 and 1 January 2021, respectively. CEPT countries consequently agreed that the implementation for CEPT administrations needs to be completed by 31 December 2023 at latest.

The following approach shall be adopted:

1. a "cleaning" period, to ensure that after a certain date analogue voice telephony ceases on the channels 24, 84, 25, 85, 26 and 86 and the channels previously designated as 27 and 28. This means the implementation of the decisions in Annex 1 on footnotes w), z) and zz). This period started at the adoption of this Decision and ended on 1 January 2023. During the cleaning period, use of the channels for digital data exchange was accepted subject to agreement with affected administrations;
2. after 1 January 2023, the relevant channels for the VDES can be used solely for this purpose in the maritime mobile service and maritime mobile satellite service.

Different frequencies (VHF channels) for different purpose are concerned. The necessary changes for coast stations require coordination between administrations. For different purpose of frequency usage, different matters of urgency could be identified.

ANNEX 3: CRITERIA FOR A SUCCESSFUL OUTCOME OF THE DECISION

Users should continue to be able to access the operational analogue voice communication services for ship movement and port operations during and after the transition.

The impact of disruption of operational communications, due to the implementation of this Decision, is minimised during and after transition.

Any possible increased congestion, due to the implementation of this Decision, should not negatively impact current ship services and port operations.

A means for assessing congestion and impact on a national level may be needed.

Seafarers are informed in sufficient time of the changes to the radio service provisions so that they can continue to use it.

Matters to be taken into consideration:

- Cost to industry associated with changes to channel assignment;
- Cost to administrations associated with re-planning channel assignments;
- Risks associated with changes;
- Availability of resources to implement and test changes;
- Potential for the burdens of change to fall on a small number of administrations or commercial organisations.

ANNEX 4: LIST OF REFERENCES

This annex contains the list of relevant reference documents.

- [1] ITU Radio Regulations Edition 2020 Appendix 18: "Table of transmitting frequencies in the VHF maritime mobile band"
- [2] IMO circular MSC.1-Circ.1460-Rev.4: "Guidance on the validity of radiocommunication equipment installed and used on ships"
- [3] Recommendation ITU-R M.2092: "Technical characteristics for a VHF data exchange system in the VHF maritime mobile band"
- [4] Recommendation ITU-R M.1842: "Characteristics of VHF radio systems and equipment for the exchange of data and electronic mail in the maritime mobile service RR Appendix 18 channels"
- [5] Recommendation ITU-R M.1371: "Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band"
- [6] Recommendation ITU-R M.1084: "Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service"
- [7] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC
- [8] Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 on marine equipment and repealing Council Directive 96/98/EC