



DRAFT IMO POSITION FOR THE

INTERNATIONAL TELECOMMUNICATION UNION (ITU)
WORLD RADIOCOMMUNICATION CONFERENCE 2023 (WRC-23)

**Draft IMO position on WRC-23 agenda items concerning matters
relating to maritime services**

Note: This document contains the draft IMO Position, as further developed by the Joint IMO/ITU Experts Group on maritime radiocommunication matters, at its meeting held from 1 to 5 November 2021. It should be noted that this document needs to be further considered by IMO's NCSR Sub-Committee at its meeting from 21 June to 1 July 2022 before approval by IMO's MSC at its meeting from 2 to 11 November 2022.

General

[Over 80% of world trade is transported by sea. This totals some 10 billion tonnes (53,600 billion tonne miles), of which about 29% is oil and gas, 30% is bulk (ore, coal, grain and phosphates), the remaining 41% being general cargo. Operating these merchant ships generates an estimated annual income of \$380 billion in freight rates within the global economy, amounting to 5% of total world trade. The industry employs over 1.5 million seafarers.]

Agenda item 1.1

1.1 to consider, based on the results of the ITU-R studies, possible measures to address, in the frequency band 4 800-4 990 MHz, protection of stations of the aeronautical and maritime mobile services located in international airspace and waters from other stations located within national territories, and to review the pfd criteria in No.5.441B in accordance with resolution **223 (Rev.WRC-19)**;

Background

This agenda item addresses possible measures to ensure the protection of aeronautical and maritime mobile services, located either in international waters or airspace, from other stations located within national territories and operating in the frequency band 4 800-4 990

MHz. Additionally, the agenda item calls for the review of the pfd criteria contained in No.5.441B.

The frequency bands 4 800-4 990 MHz is allocated to the maritime mobile service worldwide, as a subset of the mobile service, in accordance with the Table of Frequency Allocations.

Within the mobile services this band could be used for some maritime applications.

Actions to be taken:

To monitor studies (the responsible groups are ITU-R WP 5B and WP 5D).

Draft IMO position

To ensure that any change to the regulatory provisions and technical conditions resulting from this agenda item do not adversely impact maritime communications.

Agenda item 1.2

1.2 to consider identification of the frequency bands 3 300-3 400 MHz, 3 600-3 800 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz for International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with resolution **245 (WRC-19)**;

Background

Parts of the frequency bands 3 600-3 800 MHz (space-to-Earth) and 6 425-7 025 MHz (Earth-to-space) are used by one of the recognized mobile satellite service operators for the feeder links to support L-band maritime services, including those parts of the frequency bands which are used for the communications inside the Global Maritime Distress and Safety System (GMDSS). There is potential for interference from terrestrial IMT systems to receiving land earth stations using the frequency band 3 600-3 800 MHz, and to receiving space stations of one of the recognized mobile satellite service operators using the band 6 425-7 025 MHz. Interference to the space station could be received from multiple base stations deployed in many countries, and hence would be particularly challenging to resolve. Interference could harm the reliability of L-band services used daily on thousands of vessels for operational and welfare communications and could harm the reliability of GMDSS services to vessels.

Actions to be taken:

Actively contribute to studies (ITU-R WP 5D)

Draft IMO position

To ensure that any use of the frequency bands 3 600-3 800 MHz in Region 2 and 6 425-7 075 MHz in Region 1 by IMT would not affect the satellites and earth station receivers for the provision of mobile satellite service feeder links used by the GMDSS.

Agenda item 1.3

1.3 to consider primary allocation of the band 3 600-3 800 MHz to mobile service within Region 1 and take appropriate regulatory actions, in accordance with resolution **246 (WRC-19)**;

Background

Part of the frequency band 3 600-3 800 MHz (space-to-Earth) is used in MSS by a recognized mobile satellite service operator for the feeder links to support L-band maritime services, including the services used for the GMDSS. There is potential for interference from new mobile systems to receiving land earth stations using the frequency band 3 600-3 800 MHz. Interference could harm the reliability of L-band services used daily on thousands of vessels for operational and welfare communications and could harm the reliability of GMDSS services to vessels.

Inmarsat provides distress and safety satellite services as part of the GMDSS and has C-band feeder links in the frequency bands 3 550-3 700 MHz in all regions.

Actions to be taken:

Actively contribute studies (ITU-R WP 5A)

Draft IMO position

To ensure that any use of the frequency band 3 600-3 800 MHz by the mobile service in Region 1 would not affect land earth stations using the same band for the provision of mobile satellite service feeder links used by the GMDSS.

To ensure protection of those services within the frequency band 3 600-3 800 MHz to which the frequency band is allocated on a primary basis and not to impose undue constraints on the existing services and their future development.

Agenda item 1.7

1.7 to consider a new aeronautical mobile-satellite (R) service (AMS(R)S) allocation in accordance with resolution **428 (WRC-19)** for both the Earth-to-space and space-to-Earth directions of aeronautical VHF communications in all or part of the frequency band 117.975-137 MHz, while preventing any undue constraints on existing VHF systems operating in the AM(R)S, the ARNS, and in adjacent frequency bands;

Background

In the band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies, based on the conditions in Article 31 of the Radio Regulations, for distress and safety purposes with stations of the aeronautical mobile service. These frequencies are listed in Appendix 15 to the Radio Regulations.

Actions to be taken:

To monitor studies (the responsible group is ITU-R WP 5B).

Draft IMO position

To ensure that any change to the regulatory provisions and spectrum allocation resulting from this agenda item do not adversely impact the use of the frequencies 123.1 MHz and 121.5 MHz for distress and safety communications for the GMDSS.

Agenda item 1.11

1.11 to consider possible regulatory actions to support the modernization of the Global Maritime Distress and Safety System and the implementation of e-navigation, in accordance with resolution **361 (Rev.WRC-19)**;

Background

IMO efforts to implement the GMDSS modernization and e-navigation may result in consequential modifications of the relevant parts in the Radio Regulations to accommodate advanced maritime communication systems.

The Maritime Safety Committee, [at its one hundred and fifth session], completed the modernization of the GMDSS by adopting amendments to the 1974 SOLAS Convention, including consequential and related amendments to existing instruments, for their entry into force on 1 January 2024. In this regard, the use of HF NBDP and VHF EPIRB for distress communications is removed from SOLAS chapter IV and necessary flexibility for using new systems in the future (e.g. NAVDAT) is inserted into chapter IV.

The Maritime Safety Committee, at its ninety-ninth session, considered an application by China for the recognition of the BeiDou Message Service System (BDMSS) for use in the GMDSS, and consequently referred the application to the NCSR Sub-Committee for evaluation of the detailed information to be provided in due course and authorized the Sub-Committee to invite IMSO to conduct the technical and operational assessment, as appropriate. NCSR 7 considered information provided by China on pre-assessment of BDMSS and invited IMSO to conduct the technical and operational assessment of BDMSS.

Note: The NCSR Sub-Committee is awaiting the outcome of the technical and operational assessment of BDMSS.

Actions to be taken:

Actively contribute to studies (ITU-R WP 5B and WP 4C)

ITU is invited to:

- .1 consider the activities of IMO and other relevant international organizations and take regulatory actions, as appropriate, to facilitate GMDSS modernization;
- .2 review the Radio Regulations and, taking into consideration the activities of IMO, IHO and IALA, as well as information and requirements provided by IMO, to consider possible regulatory actions to support the implementation of e-navigation; and
- .3 conduct studies and consider possible regulatory actions, to support the introduction of additional satellite systems into the GMDSS and ensure the availability and full protection of the spectrum used by GMDSS satellite service providers.

Draft IMO position

To support regulatory actions that assist in the modernization of GMDSS and implementation of e-navigation.

To support the introduction of additional satellite systems into the GMDSS and to safeguard the availability and full protection of the spectrum used by new and existing GMDSS satellite service providers.

Agenda item 1.15

1.15 to harmonize the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service globally, in accordance with resolution **172 (WRC-19)**;

Background

This band is increasingly being used for maritime communications and expected to be used for safety-related communications.

Actions to be taken:

To monitor studies (ITU-R WP 4A)

Draft IMO position

To support the development of regulations to avoid any interferences to this band.

Agenda item 1.16

1.16 to study and develop technical, operational and regulatory measures, as appropriate, to facilitate the use of the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by non-GSO FSS earth

stations in motion, while ensuring due protection of existing services in those frequency bands, in accordance with resolution **173 (WRC-19)**;

Background

Earth stations in motion (ESIMs) operating in these bands are used by large numbers of vessels for broadband connectivity at sea. Regulations exist to facilitate ESIMs operating in geostationary FSS networks in these bands. This agenda item aims to facilitate ESIMs operating in non-GSO FSS systems, which would benefit the provision of broadband services on ships, including those operating in the polar regions which may have no connection to GSO FSS satellites.

ESIMs are expected to be used for safety-related services such as the Fleet Data Automated Safety (FADS).

Actions to be taken:

To monitor studies (the responsible group is ITU-R WP 4A)

Draft IMO position

To support the development of regulations for ESIMs operating in non-GSO systems while maintaining compatibility with GSO networks in the same bands.

Agenda item 1.17

1.17 to determine and carry out, on the basis of the ITU-R studies in accordance with resolution **773 (WRC-19)**, the appropriate regulatory actions for the provision of inter-satellite links in specific frequency bands, or portions thereof, by adding an inter-satellite service allocation where appropriate;

Background

This agenda item addresses possible use of the bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz for inter-satellite links. The bands 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz are used by ESIMs to provide broadband connectivity at sea to large numbers of vessels.

The frequency bands 19.3-19.7 GHz (space-to-Earth) and 29.1-29.5 GHz (Earth-to-space) are used by a recognized mobile-satellite service operator for the feeder links to support L-band maritime services, including the services used for the GMDSS. The ITU-R is studying whether inter-satellite service use, if permitted in the bands 19.3-19.7 GHz and 29.1-29.5 GHz, would cause interference to mobile-satellite service feeder links operations.

Iridium provides L-band distress and safety satellite services as part of the GMDSS. To support its L-band GMDSS and maritime mobile-satellite services (MMSS), Iridium operates Ka-band feeder links in the frequency bands 19.1-19.3 GHz and 29.1-29.5 GHz in all three ITU regions. Interference to mobile-satellite service (MSS) feeder links from

inter-satellite service space stations communicating with fixed-satellite service systems in the Ka-band could harm the reliability of L-band GMDSS and MMSS to vessels.

Actions to be taken:

To monitor studies (the responsible group is ITU-R WP 4A).

Draft IMO position

To ensure that systems providing service to maritime ESIMs and the inter-satellite link are not impacted by the use of the bands 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz for inter-satellite links.

To ensure that if the frequency bands 19.3-19.7 GHz and 29.1-29.5 GHz are identified for inter-satellite links, the use of the bands for inter-satellite links would not affect the satellites and earth station receivers for the provision of mobile-satellite service feeder links used to support the GMDSS and other maritime mobile-satellite services.

Agenda item 2

2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with further resolves of resolution **27 (Rev.WRC-19)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in resolves of that resolution;

Background

There are a number of Recommendations incorporated by reference in the Radio Regulations. IMO has reviewed all these Recommendations.

Actions to be taken:

None identified

Draft IMO position

1 IMO has studied the Recommendations of relevance and commented on each as given at annex 1.

2 Incorporation by reference is of importance to IMO because of the close relationship between many of the ITU-R Recommendations related to GMDSS equipment and its operation, to IMO performance standards.

3 IMO requests early indication of any changes proposed by ITU to the mechanism of incorporation by reference and to the list of incorporated Recommendations.

Agenda item 4

4 in accordance with resolution **95 (Rev.WRC-19)**, to review the resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

Background

There are number of Resolutions and Recommendations in the Radio Regulations. IMO has reviewed all these Resolutions and Recommendations.

Actions to be taken:

TBD

Draft IMO position

IMO has studied the Resolutions and Recommendations of relevance and commented on each as given in Annex 2.

Agenda item 9

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with article 7 of the Convention:

- .1 on the activities of the Radiocommunication Sector since WRC-19;
- .2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and
- .3 on action in response to resolution **80 (Rev.WRC-07)**;

Agenda item 9.1, topic b)

Background

Under agenda item 9.1, topic b ITU-R is invited to review the amateur service and the amateur-satellite service allocations in the frequency band 1 240-1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service (RNSS) operating in the same band in accordance with Resolution **774 (WRC-19)**. The frequency band 1 240-1 300 MHz is used by the Global Navigation Satellite Systems (GNSS), recognized by IMO as components of the World-Wide Radio Navigation System (WWRNS) that provide World-wide Position, Navigation and Timing (PNT) determination services for ships.

Actions to be taken:

To monitor studies (ITU-R WP 5A and WP 4C)

Draft IMO position:

To ensure that the protection of RNSS (space-to-Earth) receivers is guaranteed after the possible technical and operational measures envisaged under this agenda item.

Agenda item 10

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and items for the preliminary agenda of future conferences, in accordance with article 7 of the Convention and resolution **804 (Rev.WRC-19)**,

Background

TBD

Actions to be taken:

TBD

Draft IMO position

TBD

ANNEX 1

RECOMMENDATION ITU-R M.476-5
Direct-printing telegraph equipment in the maritime mobile service
(Question ITU-R 5/8)

(1970-1974-1978-1982-1986-1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.489-2
Technical characteristics of VHF radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz

(1974-1978-1995)

Needed by IMO to support the carriage requirements of SOLAS chapter IV and needed by the maritime community in general. Will likely be needed into the foreseeable future.

RECOMMENDATION ITU-R M.492-6
Operational procedures for the use of direct-printing telegraph equipment in the maritime mobile service
(Question ITU-R 5/8)

(1974-1978-1982-1986-1990-1992-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.541-10
Operational procedures for the use of digital selective-calling equipment in the maritime mobile service
(Question ITU-R 9/8)

(1978-1982-1986-1990-1992-1994-1995-1996-1997-2004-2015)

Needed by IMO. Likely to be needed into the foreseeable future.

RECOMMENDATION ITU-R M.585-8
Assignment and use of identities in the maritime mobile service

(1982-1986-1990-2003-2007-2009-2012-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.625-4
Direct-printing telegraph equipment employing automatic identification in the maritime mobile service

(1986-1990-1992-1995-2012)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.633-4
Transmission characteristics of a satellite emergency position-indicating radio beacon (satellite EPIRB) system operating through a satellite system in the 406 MHz band

(1986-1990-2000-2004-2010)

Used by IMO to support the Performance standards for EPIRBs.

RECOMMENDATION ITU-R M.690-3

Technical characteristics of emergency position-indicating radio beacons (EPIRBs) operating on the carrier frequencies of 121.5 MHz and 243 MHz

(1990-1995-2012-2015)

Required by IMO to define the homing signal characteristics for the satellite EPIRB required by SOLAS chapter IV. Likely to be used by the maritime community for some time to come for EPIRBs and man overboard devices.

RECOMMENDATION ITU-R M.1084-5

Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service

(1994-1995-1997-1998-2001-2012)

Used by IMO for the description of VHF channels.

RECOMMENDATION ITU-R M.1171-0

Radiotelephony procedures in the maritime mobile service

(1995)

Required by IMO and the maritime community as long as coast stations offer a public correspondence service. The number of such coast stations is however declining.

RECOMMENDATION ITU-R M.1172-0

Miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service

(1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.1173-1

Technical characteristics of single-sideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz

(1995 -2012)

Required by IMO and the maritime community and likely to be required into the foreseeable future.

RECOMMENDATION ITU-R M.1174-4

Technical characteristics of equipment used for onboard vessel communications in the bands between 450 and 470 MHz

(1995-1998- 2004-2015-2019)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.1638-1

Characteristics of and protection criteria for sharing studies for radiolocation, aeronautical radionavigation and meteorological radars operating in the frequency bands between 5 250 and 5 850 MHz

(2003-2015)

Not required by IMO, but may be required by the maritime community where radars in this band are used.

ANNEX 2

RESOLUTION 13 (REV.WRC-97)

Formation of call signs and allocation of new international series

Retain.

RESOLUTION 18 (REV.WRC-15)

Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict

Retain.

RESOLUTION 205 (REV.WRC-19)

Protection of the systems operating in the mobile-satellite service in the frequency band 406-406.1 MHz

Retain.

RESOLUTION 207 (REV.WRC-15)

Measures to address unauthorized use of and interference to frequencies in the bands allocated to the maritime mobile service and to the aeronautical mobile (R) service

Retain.

RESOLUTION 222 (REV.WRC-12)

Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service, and procedures to ensure long-term spectrum access for the aeronautical mobile-satellite (R) service

Retain.

RESOLUTION 223 (REV.WRC-19)

Additional frequency bands identified for International Mobile Telecommunications

Retain.

RESOLUTION 331 (REV.WRC-12)

Operation of the Global Maritime Distress and Safety System

Retain.

RESOLUTION 339 (REV.WRC-07)

Coordination of NAVTEX services

Retain.

RESOLUTION 343 (REV.WRC-12)

Maritime certification for personnel of ship stations and ship earth stations for which a radio installation is not compulsory

Retain to ensure common operations between convention and non-convention ships.

RESOLUTION 344 (REV.WRC-19)
**Management of the maritime identity
numbering resource**

Retain.

RESOLUTION 349 (REV.WRC-19)
**Operational procedures for cancelling false distress alerts in the
Global Maritime Distress and Safety System**

Retain.

RESOLUTION 352 (WRC-03)
**Use of the carrier frequencies 12 290 kHz and 16 420 kHz for
safety-related calling to and from rescue coordination centres**

Retain.

RESOLUTION 354 (WRC-07)
Distress and safety radiotelephony procedures for 2 182 kHz

Retain.

RESOLUTION 356 (REV. WRC-19)
ITU maritime service information registration

Retain.

RESOLUTION 361 (REV. WRC-19)
**Consideration of regulatory provisions for modernization of the
Global Maritime Distress and Safety System and
related to the implementation of e-navigation**

Subject of agenda item 1.11

RESOLUTION 363 (WRC-19)
**Considerations to improve utilization of the VHF maritime
frequencies in Appendix 18**

In the preliminary agenda for WRC-27.

RESOLUTION 612 (REV.WRC-12)
**Use of the radiolocation service between 3 and 50 MHz to
support oceanographic radar operations**

Retain.

RECOMMENDATION 7 (REV.WRC-97)
**Adoption of standard forms for ship station and ship earth station licences and aircraft
station and aircraft earth station licences**

Retain.

RECOMMENDATION 37 (WRC-03)
**Operational procedures for earth stations
on board vessels (ESVs) use**

Retain.

RECOMMENDATION 316 (REV. WRC-19)
**Use of ship earth stations within harbours and other waters
under national jurisdiction**

Retain.
