

ANNEX 22

**RESOLUTION MSC.470(101)
(adopted on 14 June 2019)**

**AMENDMENTS TO IMO/WMO WORLDWIDE MET-OCEAN INFORMATION
AND WARNING SERVICE – GUIDANCE DOCUMENT
(RESOLUTION A.1051(27))**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO that, by resolution A.1051(27), the Assembly adopted the *IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*,

NOTING that the Assembly, at its twenty-seventh session, recommended that Member States implement the IMO/WMO Worldwide Met-Ocean Information and Warning Service and authorized the Committee to keep the aforementioned guidance document under review and update it as necessary in light of experience gained in its application,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its sixth session,

1 ADOPTS the *Revised IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*, set out in the annex to the present resolution, which revises in its entirety the existing text of the annex to resolution A.1051(27);

2 RECOMMENDS that Member States continue implementing the Worldwide Met-Ocean Information and Warning Service, taking into account the Revised Guidance Document set out in the annex to the present resolution;

3 DETERMINES that the *Revised IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document* should become effective on 1 January 2020.

ANNEX

REVISED IMO/WMO WORLDWIDE MET-OCEAN INFORMATION AND WARNING SERVICE – GUIDANCE

1 INTRODUCTION

1.1 The IMO/WMO Worldwide Met-Ocean Information and Warning Service (WWMIWS) is the internationally coordinated service for the promulgation of meteorological warnings and forecasts to vessels undertaking international or national voyages.

1.2 The purpose of this Guidance is to provide specific guidance for the promulgation of meteorological warnings and forecasts. Its guidance does not apply to purely national services which supplement these internationally coordinated services.

1.3 WWMIWS coordinates the necessary meteorological information requirements outlined in regulation V/5 (Meteorological services and warnings) of the International Convention for the Safety of Life at Sea, 1974, as amended (the 1974 SOLAS Convention), which states:

"2 In particular, Contracting Governments undertake to carry out, in cooperation, the following meteorological arrangements:

.10 To endeavour to obtain a uniform procedure in regard to the international meteorological services already specified, and, as far as is practicable, to conform to the Technical Regulations and recommendations made by the World Meteorological Organization, to which the Contracting Governments may refer for study and advice any meteorological question which may arise in carrying out the present Convention."

1.4 Resolution A.705(17), as amended, on *Promulgation of Maritime Safety Information*, sets out the organization, standards and methods which should be used for the promulgation and reception of Maritime Safety Information, including navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships, as documented in the 1974 SOLAS Convention. The WMO Executive Council, at its sixty-first session (June 2009), requested WMO to establish and develop, in collaboration with IMO, terms of reference for the development of an IMO/WMO Worldwide Met-Ocean Information and Warning Service guidance document, to complement the existing IMO/IHO World-Wide Navigational Warning Service guidance document, provided in resolution A.706(17), as amended.

1.5 The regulatory framework for the provision of marine meteorological services within the new WMO GMDSS Marine Broadcast System was developed from Recommendation 3 (CMM-XI) in 1993, endorsed by the WMO Executive Council at its forty-fourth session. This new system reflects the evolution since the advent of the GMDSS, as adopted by the Conference of Contracting Governments to the 1974 SOLAS Convention on the Global Maritime Distress and Safety System in November 1988, effective on 1 February 1992. The WMO GMDSS Marine Broadcast System is an integral part of WWMIWS.

1.6 Future amendments to this guidance document will be considered formally and approved by both WMO and IMO in accordance with the procedure set out in section 8. Proposed amendments should be evaluated by the World-Wide Met-Ocean Information and

Warning Service Committee (WWMIWS-C) of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), which includes an ex-officio representative of the IMO Secretariat, prior to any extensive WMO and IMO consideration.

2 DEFINITIONS

For the purposes of WWMIWS, the following definitions apply:

- .1 *Coastal and offshore waters* apply to areas for which WMO Members issue weather and sea bulletins, governed by the procedures in the Manual on Marine Meteorological Services (WMO-No. 558).
- .2 *Enhanced Group Call (EGC)* means the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.
- .3 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in SOLAS regulation IV/4, as amended.
- .4 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.
- .5 *International Enhanced Group Call service* means the coordinated broadcast of Maritime Safety Information and Search and Rescue related information, via Enhanced Group Call, using the English language.
- .6 *International Iridium service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .7 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information by means of narrow-band direct-printing telegraphy using the English language.¹
- .8 *International SafetyNET service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via Enhanced Group Call, using the English language.
- .9 *Issuing Service* means a National Meteorological and Hydrological Service (NMHS) or National Authority which has accepted responsibility for ensuring that meteorological warnings and forecasts for shipping are disseminated through the International EGC service to the designated METAREA for which the NMHS or National Authority has accepted responsibility under the broadcast requirements of the GMDSS.²
- .10 *Maritime Safety Information (MSI)*³ means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.

¹ As set out in the IMO NAVTEX Manual.

² As defined in WMO-No. 558.

³ As defined in regulation IV/2 of the International Convention for the Safety of Life at Sea, 1974, as amended.

- .11 *Maritime Safety Information service* means the internationally and nationally coordinated network of broadcasts containing information, which is necessary for safe navigation.
- .12 *METAREA* means a geographical sea area⁴ established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .13 *METAREA Coordinator* means the individual with the authority to coordinate marine meteorological information broadcasts by one or more National Meteorological and Hydrological Services acting as Preparation or Issuing Services within the METAREA.
- .14 *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .15 *National NAVTEX service* means the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .16 *National Enhanced Group Call service* means the broadcasting and automated reception of Maritime Safety Information via EGC, using languages as decided by the Administration concerned.
- .17 *NAVAREA* means a geographical sea area⁴ established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .18 *NAVTEX* means the system for the broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing telegraphy.
- .19 *NAVTEX Coordinator* means the authority charged with operating and managing one or more NAVTEX stations broadcasting Maritime Safety Information as part of the International NAVTEX service.
- .20 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in resolution A.801(19), as amended.
- .21 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which Maritime Safety Information is provided from a particular NAVTEX transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in resolution A.801(19), as amended.

⁴ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- .22 *Other urgent safety-related information* means Maritime Safety Information broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- .23 *Preparation Service* means a National Meteorological and Hydrological Service or National Authority which has accepted responsibility for the preparation of warnings and forecasts for parts of or an entire METAREA in the WMO system for the dissemination of meteorological forecasts and warnings to shipping under the GMDSS and for their transfer to the relevant Issuing Service for broadcast.
- .24 *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by IMO for use in the GMDSS.
- .25 *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of Maritime Safety Information. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .26 *Sub-area Coordinator* means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-area.
- .27 *User defined area* means a temporary geographic area, either circular or rectangular, to which Maritime Safety Information or Search and Rescue related information is addressed.
- .28 *UTC* means Coordinated Universal Time which is equivalent to GMT (or ZULU) as the international time standard.
- .29 In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), as amended.

3 METEOROLOGICAL INFORMATION BROADCASTS

3.1 Methods

3.1.1 The two principal methods used for broadcasting marine meteorological information as part of MSI in accordance with the provisions of the 1974 SOLAS Convention, in the areas covered by these methods, are as follows:

- .1 *NAVTEX*: broadcasts to coastal waters; and
- .2 *Enhanced Group Call*: broadcasts to the geographical sea areas covered by a recognized mobile satellite service.

3.1.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some

duplication to allow a ship to change from one method to another, the majority of MSI will be broadcast either on NAVTEX or by EGC.

3.1.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.1.4 EGC broadcasts should be made in accordance with the standards and procedures set out in the IMO Manuals of the recognized mobile satellite service providers.

3.1.5 HF NBDP may be used to promulgate MSI in areas outside EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.1.6 In addition, Administrations may also provide meteorological warnings and forecasts by other means. WMO has organized an Internet-based website portal to display MSI bulletins for each METAREA and some national services.

3.1.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/METAREA warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

3.2 Scheduling

3.2.1 Automated methods (NAVTEX/Enhanced Group Call)

3.2.1.1 At least two scheduled daily broadcast times are necessary to provide adequate promulgation for routine meteorological information.

3.2.1.2 Meteorological warnings are issued in a timely manner when hazardous conditions are expected to reach documented threshold values and updated, amended or cancelled, as appropriate, according to documented criteria. Normally, the initial broadcast should be made as follows:

- .1 for NAVTEX, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 for EGC, broadcast is immediate.

3.2.1.3 Meteorological warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and in the IMO manuals of the recognized mobile satellite service providers, as appropriate.

3.2.2 Schedule changes

3.2.2.1 Broadcast times for NAVTEX are defined by the B1 character of the station, allocated by the IMO NAVTEX Coordinating Panel.

3.2.2.2 Times of scheduled broadcasts under the International EGC service are coordinated through the IMO Enhanced Group Call Coordinating Panel.

3.2.2.3 Information on broadcast schedules for WWMIWS bulletins are contained in WMO-No.9, Volume D, Information for shipping.

4 METEOROLOGICAL INFORMATION

4.1 General

4.1.1 Marine meteorological services are provided to satisfy the requirements for information on marine environmental conditions and phenomena, established by national practices and international conventions in relation to marine operations.

4.1.2 Marine meteorological services are designed for the safety of marine operations and to promote, where possible, the efficiency and economy of marine activities.

4.1.3 The WWMIWS guidance and coordination for marine meteorological MSI messages issued on EGC, NAVTEX and HF NBDP communication systems covers the following areas:

- .1 warnings and forecasts for the high seas; and
- .2 warnings and forecasts for coastal, offshore and local waters (including ports, lakes and harbour areas).

4.1.4 Operational guidance for formatting meteorological information is given in detail in the WMO Manual on Marine Meteorological Services (WMO-No.558) and the Joint IMO/IHO/WMO Manual on Maritime Safety Information.

4.2 Services for the High Seas

Marine meteorological services for the high seas include provision of:

- .1 meteorological warnings;
- .2 marine forecasts; and
- .3 sea-ice information services.

4.2.1 Meteorological Warnings

4.2.1.1 Warnings are issued for the following phenomena:

- .1 wind warnings of gale force (Beaufort force 8) and above; and
- .2 ice accretion.

4.2.1.2 The severity of wind warnings will use the following categories:

- .1 gale-force (Beaufort force 8 or 9);
- .2 storm-force (Beaufort force 10 or 11); and
- .3 hurricane-force (Beaufort force 12 or over).

4.2.1.3 Warnings for dangerous sea states and unusual and hazardous sea-ice conditions could be issued within some METAREAs.

4.2.1.4 Warnings will include the following information:

- .1 type and severity of warning;
- .2 date and time of reference in UTC;
- .3 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;
- .4 extent of affected area; and
- .5 description of the warning phenomenon characteristics.

4.2.2 Marine Forecasts

4.2.2.1 Marine forecasts for the high seas are structured in three parts:

Part I: Warnings

Part II: Synopsis of major features

Part III: Forecasts

4.2.2.2 The valid period of the forecast will be at least 24 hours.

4.2.2.3 Part I will include a reference to current warnings issued for the area. This reference should be in the form of an identifier for a uniquely numbered or named warning, or include the relevant contents of the warning.

4.2.2.4 When no wind warnings are in effect, this fact will be explicitly stated within Part I of the marine forecast.

4.2.2.5 The synopsis of major features in Part II of the marine forecast will include details of significant low-pressure systems, significant fronts and tropical disturbances that are affecting, or are expected to affect, the area within or near the valid period of the forecast. The central pressure and/or intensity, location, movement and changes of intensity will be given for each system.

4.2.2.6 The forecast information provided in Part III of marine forecasts will include:

- .1 wind speed or force and direction;
- .2 sea state; and
- .3 visibility when forecast is less than six nautical miles.

4.2.2.7 The forecasts could include expected significant changes during the forecast period, significant hydrometeors such as freezing precipitation, snowfall or rainfall.

4.2.3 Sea-ice information

4.2.3.1 Sea-ice information services will provide the limits of sea ice and icebergs, where ice conditions pose a hazard to navigation.

4.2.3.2 Sea-ice information services could include information about sea-ice concentration and stage of development.

4.2.3.3 Descriptions of the limit of all known ice, ice edge or iceberg risk are given using latitude and longitude coordinates. The location of the ice, ice edge or iceberg risk are given relative to the limit.

4.3 Services for the coastal, offshore and local waters areas

4.3.1 Marine meteorological services for coastal, offshore and local waters areas are similar to those for the high seas, but modified according to local requirements.

4.3.2 Naming conventions, the extent of inshore and offshore boundaries, and land boundary reference points, for areas referenced in marine forecasts will be clearly defined and documented in relevant publications.

4.3.3 Forecasts and warnings for coastal, offshore and local waters should be considered as complementary to the high seas forecasts and warnings for ships navigating close to the coast.

5 METEOROLOGICAL WARNING BROADCAST REQUIREMENTS

5.1 Language

5.1.1 All meteorological information should be broadcast only in English in the International NAVTEX and International EGC services.

5.1.2 In addition to the required broadcasts in English, meteorological information may be broadcast in a national language using National NAVTEX and National EGC services and/or other means.

5.1.3 Marine meteorological services for broadcast on NAVTEX should be prepared using the accepted abbreviations outlined in appendix 1.2 within the WMO Manual on Marine Meteorological Services (WMO-No.558).

5.2 Guidance

Operational guidance for handling and formatting meteorological information is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, the IMO NAVTEX Manual, the IMO manuals of the recognized mobile satellite service providers and the WMO Manual on Marine Meteorological Services (WMO-No.558).

6 ISSUING AND PREPARATION SERVICES

6.1 Responsibilities

6.1.1 The Issuing Service is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant Preparation Services and for broadcasting this in accordance with the guidelines contained within the IMO manuals of the recognized mobile satellite service providers and the IMO NAVTEX Manual.

6.1.2 The Issuing Service is also responsible for monitoring the broadcasts of their MSI to their designated area of responsibility.

6.1.3 The Preparation Service is responsible for providing the relevant information to the Issuing Service.

7 METAREA COORDINATOR RESOURCES AND RESPONSIBILITIES

7.1 METAREA Coordinator resources

7.1.1 The METAREA Coordinator should have:

- .1 the expertise and information resources of NMHS or equivalent National Authority;
- .2 effective means of communication such as telephone, email, facsimile and Internet, with NMHS and National Authorities in the METAREA, with other METAREA Coordinators and with other data providers; and
- .3 access to broadcast systems for transmission to the navigable waters of the METAREA. As a minimum, this should include those described in paragraph 3.1.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the METAREA.

7.2 METAREA Coordinator responsibilities

7.2.1 The METAREA Coordinator should:

- .1 act as the central point of contact on matters relating to meteorological information and warnings within the METAREA;
- .2 promote and oversee the use of established international standards and practices in the dissemination of meteorological information and warnings throughout the METAREA;
- .3 coordinate preliminary discussions between neighbouring Members, seeking to establish and operate NAVTEX services, prior to formal application;
- .4 coordinate the dissemination of meteorological bulletins on the WMO Information System (WIS), and ensure the correct display of MSI messages on the WWMIWS website;
- .5 liaise with entities that have responsibility for maritime safety, marine communications, port authorities and other relevant maritime responsibilities on the effective use of meteorological information and warning services;
- .6 act as a coordination point for implementation of WMO strategic initiatives under the WMO Services Delivery Framework, including verification, quality management, Marine Forecaster Competency framework and resilience activities;
- .7 be responsible for maintaining details of marine weather services and marine communications relevant for international service documentation such as Weather Reporting (WMO No-9), Volume D – Information for Shipping, IMO GMDSS Master Plan, ITU List IV – List of Coast Stations and Special Service Stations or other relevant nautical publications of national Administrations;

- .8 contribute to the development of international standards and practices through attendance and participation in the meetings of the WWMIWS-C of JCOMM, and also attend and participate in relevant IMO, IHO and WMO meetings as appropriate and required;
- .9 monitor the broadcasts which they originate, to ensure that the information has been correctly broadcast; and
- .10 take into account the need for contingency planning.

7.2.2 The METAREA Coordinator has to also ensure that within their METAREA, NMHS and National Authorities that act as Issuing Services have the capability to:

- .1 select meteorological information and warnings for broadcast in accordance with the guidance given in the WMO Manual on Marine Meteorological Services (WMO-No. 558);
- .2 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No.471);
- .3 ensure meteorological information is drafted in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information; and
- .4 monitor the MSI transmission of the bulletins that are broadcast by the Issuing Service within the respective METAREA.

7.2.3 The METAREA Coordinator has to further ensure that within their METAREA, NMHS and National Authorities that act as Preparation Services have the capability to:

- .1 be informed of/gather information on all meteorological events that could significantly affect the safety of navigation within their area of responsibility;
- .2 assess all meteorological information immediately upon receipt in the light of expert knowledge for relevance to navigation within their area of responsibility;
- .3 forward marine meteorological information that may require wider promulgation directly to adjacent METAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .4 ensure that information concerning all meteorological warning subject areas listed in the Manual on Marine Meteorological Services (WMO-No.558) that may require a METAREA warning within their own area of responsibility is forwarded immediately to the appropriate National Meteorological Services and METAREA Coordinators affected by the meteorological event;
- .5 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No.471); and
- .6 maintain records of source data relating to METAREA warnings and forecasts in accordance with the requirement of the national Administration of the METAREA Coordinator.

8 PROCEDURE FOR AMENDING THE WORLDWIDE MET-OCEAN INFORMATION AND WARNING SERVICE

8.1 Proposals for amendment or enhancement of the IMO/WMO Worldwide Met-Ocean Information and Warning Service should be submitted for evaluation by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR). Amendments will only be adopted after consideration and approval by the NCSR Sub-Committee.

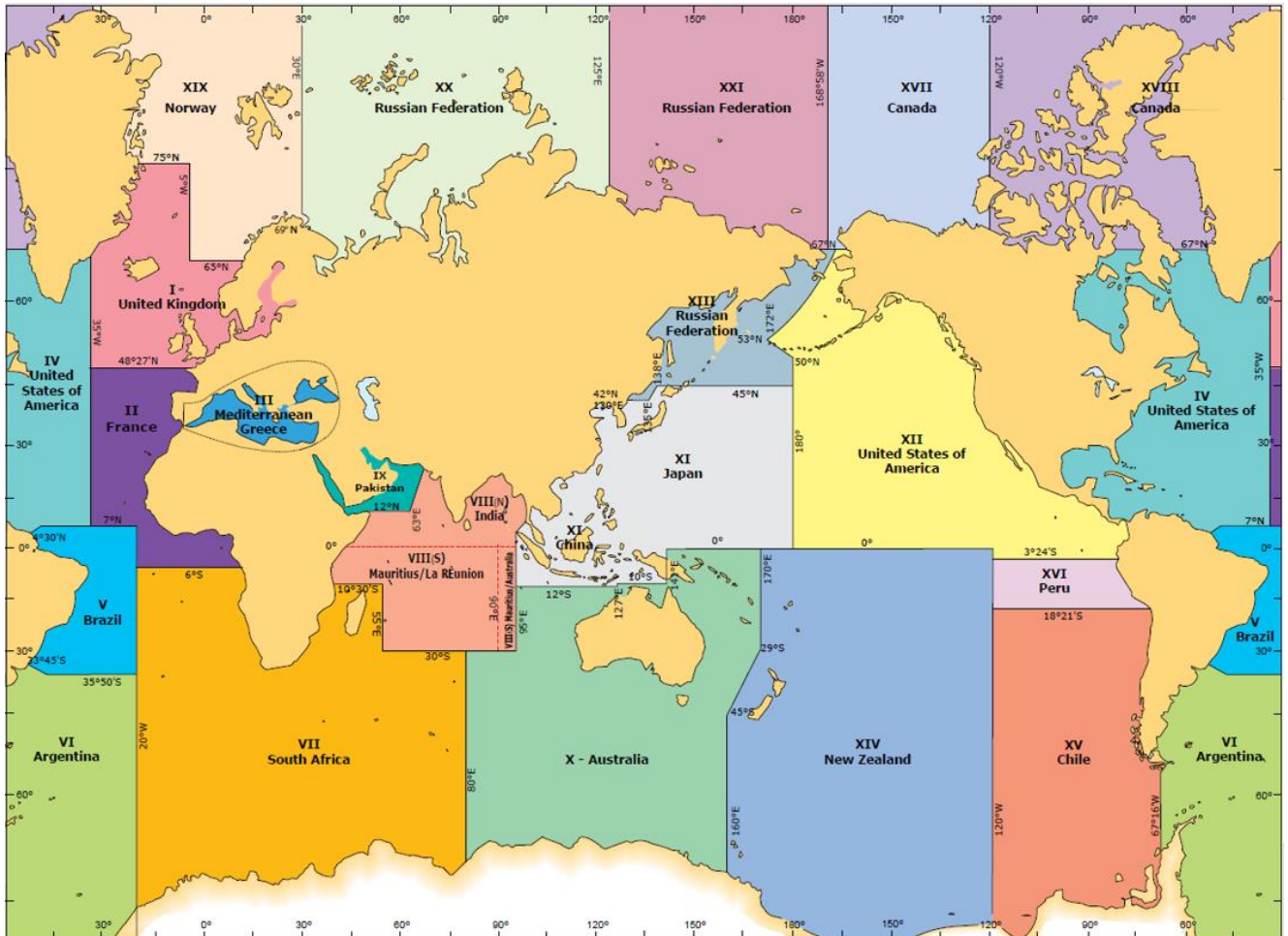
8.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

8.3 The agreement of the WMO and the active participation of other bodies should be sought according to the nature of the proposed amendments.

8.4 The schedule of broadcast times and frequencies for WWMIWS, being subject to frequent changes, will not be subject to these amendment procedures, but should be coordinated through the IMO Enhanced Group Call Coordinating Panel or the IMO NAVTEX Coordinating Panel, as appropriate.

APPENDIX

**GEOGRAPHICAL AREAS FOR COORDINATING AND PROMULGATING
METAREA WARNINGS AND FORECASTS**



The delimitation of these METAREAs is not related to and should not prejudice the delimitations of any boundaries between States
