Outcomes of the 12th meeting of the IMO/ITU Experts Group (IMO/ITU EG12)

Submitted by IHB

SUMMARY

Executive Summary: This document provides details of the outcomes of IMO/ITU EG12, which are relevant to WWNWS-SC

Action to be taken: Paragraph 2.

Related documents: IMO/ITU EG12/J/4 dated 11 July 2016, NCSR 4/16 dated 1 Sep 2016

1. IMO/ITU EG12 was held at IMO Headquarters in London 11 – 15 July 2016. It was noted that there were no delegates representing Hydrographic Offices of IHO member states or other originators of MSI involved in the WWNWS.

2. The Experts Group addressed a number of topics of direct interest to IHO Member States resulting from discussions at the 96th session of the IMO Maritime Safety Committee (MSC96), 3rd session of the IMO Sub-committee on Navigation, Communications, and Search and Rescue (NCSR3), outcomes of the ITU World Radiocommunication Conference 2015 (WRC-15) and in preparation of WRC-19. The IHB submitted one comment paper, Annex A, and made a number of interventions, which were mainly to clarify misunderstanding of the Worldwide Navigation Warning Service (WWNWS) processes, NAVAREA and METAREA Coordinator responsibilities and the nature of Maritime Safety Information (MSI).

3. The following items are of relevance to WWNWS-SC:

a. Agenda Item 2 – Consideration of the outcomes of NCSR3, MSC96 and other IMO bodies

In particular the Experts Group considered the *Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems*, additional modules to the *Revised Performance Standards for Integrated Navigation System (INS) (resolution MSC.252(83)) relating to the harmonization of bridge design and display of navigation information received via communications equipment* and *Guidelines for the harmonization display of navigation information received via communications equipment*. The IHB submitted comments in relation to these items, which were included in the revised draft amendments to resolutions MSC.252(83) (*Revised Performance Standards for Integrated Navigation Systems (INS)*), MSC.306(87) (*Revised Performance Standards for Enhanced Group Call (EGC) Equipment*) and MSC.148(77) (*Revised Performance Standards for Narrow-Band Direct-Printing Telegraph Equipment for the Reception of Navigational and*

Meteorological Warnings and Urgent Information to Ships (NAVTEX)), which will be submitted to NCSR4 for consideration.

The Group considered the use of Automatic Identification Systems (AIS) on unmanned craft, their operations and dynamic navigation markers, noting that Recommendations ITU-R M.585-7 and M.1375-5 did not address these issues. The Group noted that these Recommendations did not provide guidance for the assignment of identification to AIS devices used to mark a dynamic navigation hazard, which could improve navigation safety if separately distinguished from aids to navigation.

The Experts Group discussed draft definitions of Autonomous Maritime Radio Devices (AMRD) for consideration by the ITU and the need to consider the operational and safety of navigation aspects and which devices should be displayed by AIS and on an ECDIS.

b. Agenda Item 5 – Review and modernization of the Global Maritime Distress and Safety System

The Group reviewed, in detail, the report of the Correspondence Group (CG) on the Modernization of the Global Maritime Distress and Safety System (GMDSS) and comments were prepared for further consideration by the CG in preparing their report to NCSR4.

The Experts Group considered the compatibility of multiple GMDSS satellite services with respect to the delivery of MSI. The Group noted that the formatting of Enhanced Group Call (EGC) message content, the routeing of messages from the originators (MSI providers and SAR operators) to the satellite service providers for broadcasting and the requirement for MSI providers to monitor their broadcasts were of particular relevance. The IHB highlighted the guidance on the standardisation and the harmonizing of the format of EGC messages contained in the Joint IMO/IHO/WMO MSI Manual and the International SafetyNET Manual.

The Group noted the concerns of the MSI providers in meeting the requirement to monitor their broadcasts when transmitted via multiple satellite service providers, which could cause cost increases. The Group discussed the issue of interoperability for the shore elements of the system. The future development of NAVDAT and its potential place alongside the NAVTEX system network were considered.

The Group discussed the application by *Thuraya* and *Iridium* for recognition as mobile satellite service providers; of particular concern was out-of-band-emission interference and the Group considered the IMO should invite the ITU to take appropriate regulatory measures to ensure full protection of the availability of the frequency bands to be used by new recognised GMDSS satellite service providers for the provision of GMDSS services.

4. The next session of the IMO/ITU EG is scheduled from 10 to 14 July 2017 *(IMO/ITU EG13*). The meeting report and associated documents are available on the IMO website under IMODOCS.

5. The Sub-Committee is:

a. **invited** to note the information provided;

b. **requested** to consider direct involvement by NAVAREA Coordinators in the GMDSS Modernization Correspondence Group;

c. **invited** to investigate ways of achieving representation of NAVAREA Coordinators at the next session of the IMO/ITU EG; and

d. **take** any other action as appropriate.

Annex:

A. IMO/ITU EG12/J/4 - Comments submitted by the International Hydrographic Organization

B. Extract from NCSR4-16 - IMO/ITU EG12 report to NCSR4

Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated navigation display systems (agenda item 2)

Comments submitted by the International Hydrographic Organization (IHO)

Executive summary

This document comments on the information provided in document IMO/ITU EG 12/2/1, specifically those areas for which the International Hydrographic Organization (IHO) and the IHO World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) are the subject matter experts.

Introduction

1 In the terms of reference for the twelfth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, the Experts Group was instructed to consider document NCSR 3/13 (United States), proposing amendments to resolutions MSC.148(77), MSC.306(87) and MSC.252(83), related to interconnection, bridge alert management and display of NAVTEX and SafetyNET warnings on navigation display systems, and advise NCSR 4, as appropriate.

2 The IHO and the IHO WWNWS-SC, as the lead organization and body responsible for a number of the items addressed in document IMO/ITU EG 12/2/1, submit the following comments.

3 The WWNWS-SC would question whether it is appropriate for operators to be able to filter, either wholly or partially, Maritime Safety Information (MSI), which by its nature is navigationally safety critical. This facility could result in bridge operators missing critical safety information pertinent to their voyage.

4 The IHO notes that the IMO at MSC 90 adopted the S-100 universal hydrographic data model as the baseline for creating a framework for data access and services under the scope of SOLAS (Common Maritime Data Structure). The S-124 Product Specification is being developed to model Navigational Warnings in the S-100 framework. It provides an implementation tool to format, disseminate and display MSI but does not as such "describe a *function* of the GMDSS required under SOLAS Chapter IV …".

5 It is the view of the IHO that extending the use of INS equipment to any future S-100 based product specifications related to safe navigation would include S-101 ENC and therefore have a possible impact on ECDIS Performance Standards. This issue is being investigated by the IHO S-100WG, under the direction of the IHO Hydrographic Services and Standards Committee (HSSC), to identify amendments, if any, to existing IMO Performance Standards that would be required to use S-100 based products, which includes S-101, S-124, etc., and report to the 8th meeting of HSSC in November 2016. The IHO intends to report the outcome of the consideration by HSSC to NCSR.

6 The IHO considers that, as the S-124 is being developed by a subordinate group set up by the WWNWS-SC, the WWNWS-SC should also be invited to consider if there is any need to include provisions related to the use of S-124 in the Performance Standards of NAVTEX and EGC equipment and report to NCSR.

7 The IHO questions whether the IMO/ITU EG is the appropriate body to consider revisions to SN.1/Circ.243/Rev.1 on the presentation of navigational related symbols, terms and abbreviations. It is the view of the IHO that it would be more appropriate to refer this issue to the IMO/IHO Harmonization Group on Data Modelling (HGDM); this consideration will be addressed in the IHO response to the invitation of MSC 96 to submit a proposal to the Committee or NCSR to activate the IMO/IHO HGDM.

8 Particular comments on the proposed amendments to resolution MSC.148(77), *Performance standards for Narrowband direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX)*, resolution MSC.306(87), *Revised performance standards for enhanced group call (EGC) equipment*, and resolution MSC.252(83), *Revised performance standards for Integrated Navigation Systems (INS)*, are provided at the annex.

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ANNEX

Comments on the proposed amendments to resolutions MSC.148(77), MSC.306(87) and MSC.252(83) as set out in document IMO/ITU EG 12/2/1

Comments summary on <IHO_comment_on_MSC_Resolutions.pdf>
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ANNEX 1

Proposed amendment to resolution MSC.148(77) ***Performance standards for Narrow-band direct-printing telegraph equipment for The reception of navigational and meteorological warnings and urgent information to ships (NAVTEX)***

1 In paragraph 9 "INTERFACES":

.1 Add a new paragraph:

"9.4 An interface for alert management in accordance with MSC.302(87) Performance Standards for Bridge Alert Management (BAM)." [1]

Proposed amendments to resolution MSC.306(87) ***Revised performance standards for enhanced group call (EGC) equipment***

2 In paragraph 1 "INTRODUCTION":

.1 Insert a new paragraph between paragraphs 1.2 and 1.3:

"1.3 Alternatively, if the equipment does not provide means to produce a printed copy of received information, it shall only be installed in combination with an interface connecting it to navigation equipment that is compliant w [2] [MSC 252(83), as amended] Integrated Navigation System. Provisions for interconnection to resolution A.811(19) on Integrated Radio Communication System shall also be included."

.2 Existing paragraph 1.3 is renumbered as paragraph 1.4.

3 Add a new paragraph 6:

"6 INTERFACES

6.1 The equipment should include at least one interface for the transfer of received data to other navigation display or integrated communications equipment.

6.2 The equipment should include an interface for alert management in accordance with MSC.302(87) Performance Standards for Bridge Alert Management (BAM)).

6.3 All interfaces provided for communication with other navigation or communication equipment should comply with the relevant international standards[2]."

Proposed amendments to resolution MSC. 252(83) ***Revised performance standards for Integrated Navigation Systems (INS)***

4 In paragraph 3.5 "Acceptance of INS as navigational equipment", add to the bottom of Table 2 :

[2] Refer to IEC 61162.

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1 | IHO/GB | 07/07/2016 13:08:48
The form is not consistent with the other provisions of section 9. It should read: "The equipment should include ..."
Re [pah, 07/07/2016 12:46:53]: Unmarked set by pah

2 | IHO/GB | 07/07/2016 13:08:48
It is consdiered the amended PS would be clearer if 1.3 is adjusted as follow:
"1.3 Alternatively to the requirement in paragraph 1.2, the equipment may be exempt from providing means to produce a printed copy of received information if it is installed in combination ..."

Comments summary on <IHO_comment_on_MSC_Resolutions.pdf>
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Page 2

IMO/ITU EG 12/2/1
Annex 1, page 2

"

Allow for accepting the INS in compliance with as	INS in compliance with	
[…]	[…]	[…]
NAVTEX	Meteorological warnings (7.2.3) Navigation and SAR warning 1 (7.3.2) Ice warnings (7.3.2)	MSC.148(77)
Inmarsat-C EGC SafetyNET or other IMO-recognized GMDSS system 3	Meteorological w 2 ings (7.2.3) Navigation and SAR warnings (7.3.2) Ice warnings (7.3.2) 4	A.807(19) as amended by MSC.68(68) annex 4, MSC.306(87)

"

5 In paragraph 7 "Task and functional requirements for an INS":

.1 In paragraph 7.3.2 "Additional mandatory functions":

Add to "The INS should provide capability for": 5

"

- […]
- Coastal and NAVAREA navigational warnings
- Search and Rescue (SAR) warnings
- Coastal and METAREA Meteorological warnings
- Ice warnings".

.2 In paragraph 7.3.3 "Optional Functions":

delete the bullet point "NAVTEX"; and

add the bullet point "The operator may filter the display of NAVTEX, Inmarsat C SafetyNET and IMO-recognized 6 GMDSS provider Maritime Safety Information messages.". 7

.3 In paragraph 7.5.2.1, modify as follows:

"

- …..
- safety related messages e.g., AIS safety-related and binary messages, NAVTEX, Inmarsat-C EGC SafetyNET, messages from an IMO-recognized GMDSS provider." 8

.4 In paragraph 7.7.1, modify as follows:

"

- …
- presentation of received safety related messages, such as AIS safety-related and binary messages, Application Specific Messages (ASM), NAVTEX, Inmarsat-C EGC SafetyNET, maritime safety information messages from an IMO-recognized GMDSS provider". 9

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1 | IHO/GB | 07/07/2016 13:08:49
This information is also relevant for route monitoring.

2 | IHO/GB | 07/07/2016 13:08:49
This information may be relevant also for route planning and would require an amendment to paragraph 7.2.3

3 | IHO/GB | 07/07/2016 13:08:49
This is vague. It could include .... a NAVTEX.
IHO proposes replacing with:
"other IMO-recognized equipment accommodating other providers of GMDSS satellite services"

4 | IHO/GB | 07/07/2016 13:08:49
See comments above (NAVTEX)

5 | IHO/GB | 07/07/2016 13:08:49
Consider adding overlaying function (see first bullet of current paragraph 7.3.2

6 | IHO/GB | 07/07/2016 13:08:49
See comment in paragraph 3 of covering text.

7 | IHO/GB | 07/07/2016 13:08:49
Suggest deleting this text as redundant.

8 | IHO/GB | 07/07/2016 13:08:49
replace with "Maritime Safety Information messages"

9 | IHO/GB | 07/07/2016 13:08:49
Replace with "Maritime Safety Information messages"

Comments summary on <IHO_comment_on_MSC_Resolutions.pdf>
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Page 3

6 In Appendix 1 "DEFINITIONS", modify as follows:

"External safety related messages Data received from outside of the ship concerning the safety of navigation, through equipment listed in SOLAS chapter V and/or NAVTEX, Inmarsat-C EGC SafetyNET or maritime safety information messages from [1] IMO-recognized GMDSS provider." [2]

7 These amendments to resolutions MSC.252(83), MSC.306(87) and MSC.148(77) should come into effect not later than [1 January 2019.] [3]

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1 IHO/GB 07/07/2016 13:08:52
Delete

2 IHO/GB 07/07/2016 13:08:52
Delete

3 IHO/GB 07/07/2016 13:08:52
In order to be compatible with the statement in paragraph 2 of the IMO/ITU EG 12/2/1/ (... ships need not change out existing ...), consider amending to:
These amendments to Resolutions ... should be applicable to equipment installed on or after [1 January 2019].

INTERNATIONAL MARITIME ORGANIZATION

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SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE
4th session
Agenda item 16

NCSR 4/16
1 September 2016
Original: ENGLISH

RESPONSE TO MATTERS RELATED TO ITU WORLD RADIOCOMMUNICATION CONFERENCE (1.1.2.2)

Report of the twelfth meeting of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters

Including information on Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems (5.2.4.4) (agenda item 5) Draft Modernization Plan of the Global Maritime Distress and Safety System (GMDSS) (5.2.5.3) (agenda item 12), and Response to matters related to the Radiocommunication ITU R Study Group (1.1.2.2) (agenda item 15)

Note by the Secretariat

SUMMARY

Executive summary:	This document contains in the annex the report of the twelfth meeting of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters, which was held at IMO Headquarters from 11 to 15 July 2016
Strategic direction:	1.1, 5.2
High-level action:	1.1.2, 5.2.4, 5.2.5
Planned output:	1.1.2.2, 5.2.4.4, 5.2.5.3
Action to be taken:	Paragraph 3
Related documents:	MSC 96/25; NCSR 3/29; Circular Letter No.3633 and documents as specified in the attached report (which are also available on IMODOCS)

Introduction

1 The report of the twelfth meeting of the Joint IMO/ITU Experts Group on Maritime radiocommunication matters, held from 11 to 15 July 2016, at IMO Headquarters, is given in the annex.

2 Appendixes 3 and 4 to the annex have not been translated since this is work in progress.

Action requested of the Sub-Committee

3 The Sub-Committee is invited to:

.1 consider and endorse the draft amendments to resolutions MSC.148(77), MSC.306(87) and MSC.252(83), with a view to forward them to the Committee for approval (paragraph 10 and appendix 1 of the annex);

.2 consider and approve a draft liaison statement on *Changes Consequential to displaying NAVTEX and Inmarsat C SafetyNET information on Integrated Navigation Displays* to IHO, WMO and IEC TC 80 (paragraph 11 and appendix 2 of the annex);

.3 note the discussion which took place on the operational use of new DSC Class M devices and take the outcome of discussions into account when further considering the matter (paragraphs 12 to 15 of the annex);

.4 note the discussion on the use of AIS on unmanned craft and dynamic navigation markers and that, in the view of the Group, initial guidance should be given by IMO in order to allow ITU to take the appropriate measures regarding the assignment and use of identities, as well as the development of technical characteristics, as appropriate (paragraphs 17 to 24 of the annex);

.5 note the discussions which took place on the further development of the Preliminary draft of the Modernization Plan (paragraphs 27 to 64 and appendix 3 of the annex);

.6 forward the draft Modernization Plan, including the outcomes of the High-level and Detailed review, to the HTW Sub-Committee for their consideration and to provide comments and advice, as appropriate, from a human element and end-user perspective to be taken into account for the implementation of the modernised GMDSS (paragraph 36 of the annex);

.7 note that the Group agreed that the aim should be to have the Modernization Plan endorsed by NCSR 4 with the view to approval by MSC 98 in June 2017 and that this would allow MSC 98 to take the need for new outputs into consideration when identifying the products to be included as planned outputs in the High-level Action Plan for the 2018-2019 biennium (paragraph 62 of the annex);

.8 note that the Correspondence Group on the Modernization of the GMDSS, taking into account the outcome of discussions at this meeting of the Experts Group, should submit a report, including the document containing the draft Modernization Plan of the GMDSS, for consideration at NCSR 4 (paragraph 64 of the annex);

.9 note the discussion which took place on the development of the Preliminary draft IMO position on WRC-19 agenda items (paragraphs 66 to 104 of the annex);

.10 consider and further develop the Preliminary draft IMO position on WRC-19 agenda items concerning matters relating to maritime services (paragraph 67 and appendix 4 of the annex);

.11 note the discussion which took place with respect to MSC.1/Circ.1460 in relation to HF radiocommunication equipment capable of operating narrow-band direct printing (NBDP) (paragraphs 105 to 108 of the annex);

.12 endorse the holding of the 13th meeting of the Group from 10 to 14 July 2017, at IMO Headquarters in London (paragraphs 111 and 112 of the annex); and

.13 note the report in general.

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ANNEX

REPORT OF THE TWELFTH MEETING OF THE JOINT IMO/ITU EXPERTS GROUP ON MARITIME RADIOCOMMUNICATION MATTERS

BACKGROUND

1 The Maritime Safety Committee, at its ninety-fifth session (3 to 12 June 2015), authorized the convening of this meeting and the NCSR Sub-Committee, at its third session (29 February to 4 March 2016), approved the terms of reference (NCSR 3/29, paragraph 14.20).

GENERAL

2 This twelfth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters (the Group) was held at IMO Headquarters in London, from 11 to 15 July 2016, under the chairmanship of Mr. C. Rissone (France).

3 The Group was attended by delegations from the following Member Governments:

ARGENTINA
CANADA
CHINA
DENMARK
FINLAND
FRANCE
GEORGIA
GERMANY
GREECE
ITALY
JAPAN
LIBERIA
MARSHALL ISLANDS
NETHERLANDS
NIGERIA
NORWAY
POLAND
ROMANIA
RUSSIAN FEDERATION
SAUDI ARABIA
SPAIN
SYRIAN ARAB REPUBLIC
TOGO
TURKEY
UNITED ARAB EMIRATES
UNITED KINGDOM
UNITED STATES
VANUATU

4 The meeting was also attended by representatives from the following United Nations specialized agency:

INTERNATIONAL TELECOMMUNICATION UNION (ITU)

and by observers from the following intergovernmental organizations:

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)
EUROPEAN CONFERENCE OF POSTAL AND TELECOMMUNCATIONS ADMINISTRATIONS (CEPT)

and by observers from the following non-governmental organizations in consultative status:

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND LIGHTHOUSE AUTHORITIES (IALA)
COMITÉ INTERNATIONAL RADIO-MARITIME (CIRM)
THE NAUTICAL INSTITUTE

ADOPTION OF THE AGENDA (AGENDA ITEM 1)

5 The Group noted and agreed on the provisional agenda as set out in document IMO/ITU EG 12/1.

CONSIDERATION OF THE OUTCOME OF NCSR 3, MSC 96 AND OTHER IMO BODIES, AS APPROPRIATE (AGENDA ITEM 2)

6 The Group noted the information provided by the Secretariat (IMO/ITU EG 12/2) on the outcome of NCSR 3 and MSC 96 with regard to issues of relevance to the Group.

Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems

7 The Group noted the outcome of discussions under agenda item 13 of NCSR 3 on "*Interconnection of NAVTEX and Inmarsat SafetyNET receivers and their display on Integrated Navigation Display Systems*", and, in particular, that following a request by the United States the Sub-Committee had instructed the Group to consider document NCSR 3/13 and advise, as appropriate (NCSR 3/29, section 13).

8 The Group further noted that there was a strong relationship with two other NCSR 3 agenda items, i.e. agenda item 6 on "*Additional modules to the Revised Performance Standards for Integrated Navigations Systems (INS) (resolution MSC.252(83) relating to the harmonization of bridge design and display of information*", and agenda item 9 on "*Guidelines for the harmonized display of navigation information received via communications equipment*".

9 The Group considered the document referred to it (NCSR 3/13), together with the new information provided by the United States (IMO/ITU EG 12/2/1) which took into account the comments made at NCSR 3. The Group noted the comments made by IHO and took these into account when further developing the draft amendments to resolutions MSC.252(83) *Revised Performance Standards for Integrated Navigation Systems (INS),* MSC.306(87) *Revised Performance Standards For Enhanced Group Call (EGC) Equipment*, and MSC.148(77) *NAVTEX*.

10 After consideration the Group agreed on the draft amendments, as set out in appendix 1, and invited the NCSR Sub-Committee to consider and endorse the amendments with a view to forward them to the Committee for approval.

11 Following a proposal by the United States, the Group finalised a draft liaison statement to IHO, WMO and IEC TC 80, as set out at appendix 2, and invited the NCSR Sub-Committee to consider and approve it.

REVIEW AND MODERNIZATION OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) (AGENDA ITEM 4)

25 The Group noted that NCSR 3 had established a Correspondence Group on the Modernization of the GMDSS under the coordination of the United States, and had approved its terms of reference. It was further noted that the Correspondence Group should:

.1 develop a Preliminary draft of the Modernization Plan of the GMDSS including a list of proposed new outputs;

.2 submit an interim report, containing the Preliminary draft of the Modernization Plan of the GMDSS, to the Joint IMO/ITU Experts Group (11 to 15 July 2016) for its consideration; and

.3 taking into account the outcome of discussions at the meeting of the Joint IMO/ITU Experts Group, submit a report, including the document containing a Preliminary draft of the Modernization Plan of the GMDSS, for consideration at NCSR 4.

Report of the Correspondence Group on the Modernization of the GMDSS

26 The Group considered the Interim report of the Correspondence Group IMO/ITU EG 12/4 (United States) containing the Preliminary draft of the Modernization Plan.

Further development of the Preliminary draft of the Modernization Plan

27 Using the annex to document IMO/ITU EG 12/4 as the document to work from, the Group prepared comments as set out below and in appendix 3. The Group noted that the Correspondence Group should take the outcome of this meeting into account and submit a report, including the document containing a draft of the Modernization Plan of the GMDSS, for consideration at NCSR 4.

Annexes to the Modernization Plan:

28 The Group agreed that the following should be annexed to the Modernization Plan:

.1 Plan of work for the revision and development of legal instruments, performance standards and guidance material (in the current draft named timeline);

.2 list of IMO instruments which should be reviewed;

.3 information, including demonstration and documentation, for the proposed planned outputs, in accordance with MSC-MEPC.1/Circ.4/Rev.4;

.4 outcome of the High level Review (NCSR 1/29, annex 10); and

.5 outcome of the Detailed Review (NCSR 3/28, annex 7).

Proposed amendments to SOLAS Chapter IV

29 The Group considered a proposal by France, Portugal and Romania (IMO/ITU EG 12/4/2) on amendments to SOLAS Chapter IV. In the view of the co-sponsors, the design of the GMDSS, as developed in the general review, needed to be simplified so that it remained straightforward, logical and clear to users.

30 Noting that the proposed amendments were not fully in line with the outcome of the review of the GMDSS (NCSR 1/28, annex 10 and NCSR 3/29, annex 7), views were expressed that care should be taken to re-open the discussions on, in particular, functional requirements which were approved by the Maritime Safety Committee as part of the High Level Review.

31 The Group further noted that the revision of SOLAS would be discussed after approval of the Modernization Plan and the approval of a new agenda item for this purpose. Therefore, it was expected that this matter would be discussed from 2018 onwards. At that time, the revision should be considered on the basis of the outcome of the review of the GMDSS, taking into account new developments.

Non SOLAS vessels

32 A discussion took place on the participation of non-SOLAS vessels in the GMDSS and the Group agreed that it should be ensured that these vessels would not be excluded from participating in the GMDSS when implementing the Modernization Plan.

The relation with e-navigation

33 The Group noted the view that it was important to identify the commonalities between GMDSS and the e-navigation concept. Other views were expressed that some caution should be taken, since it was difficult to foresee the consequences.

34 In this context, it was noted that MSC 96 had approved a new output for the NCSR Sub-Committee on e-navigation to define and harmonize the format and structure of Maritime Service Portfolios (MSPs) and to provide guidance on the appropriate communication channels used for the electronic exchange of information between shore and ship, including any necessary coordination mechanisms and transitional arrangements that may be required.

Involvement of the HTW Sub-Committee

35 It was noted that the Human Element would be embodied in the process to ensure that the implementation of the modernised GMDSS and the technology were fit for purpose both aboard and ashore.

36 In this context, the Group agreed that NCSR 4 should be invited to send the draft Modernization Plan, including the outcomes of the High-level and Detailed review, to the HTW Sub-Committee for their consideration and to provide comments and advice, as appropriate, from a human element and end-user perspective to be taken into account for the implementation of the modernised GMDSS.

Provision of GMDSS satellite services, including redefinition of Sea Area A3

37 The Group noted that the MSC 96 had included an agenda item in the provisional agenda for NCSR 4 to revise SOLAS Chapter IV to include additional mobile satellite systems recognized for use in the GMDSS. It was noted that some of the work currently identified in the Modernization Plan might be undertaken under this agenda item already at NCSR 4. However, it was agreed to keep these items in the Modernization Plan, to safeguard consistency when considering the further revision of SOLAS as a result of the Modernization of the GMDSS.

Compatibility of multiple GMDSS satellite services with respect to the delivery of EGC messages

38 The Group had an extensive discussion on the matter related to the compatibility of multiple GMDSS satellite services with respect to the delivery of EGC messages and noted that the following issues were of relevance:

.1 the formatting of Enhanced Group Calling (EGC) message content;

.2 the routeing of the message from the originators (MSI providers and SAR operators) to satellite service providers for broadcasting; and

.3 the requirement for MSI providers and SAR operators to monitor their broadcasts transmitted by all satellite service providers.

Formatting of Enhanced Group Calling (EGC) message content

39 The Group noted that the Joint IMO/IHO/WMO MSI Manual was providing guidance on standardisation and harmonization of the format of Enhanced Group Calling (EGC) MSI messages. It was further noted that the IAMSAR Manual, Volume II, was providing guidance to SAR operators for formatting SAR related EGC, referring to the International SafetyNET Manual explaining that this Manual included examples and coding which must be followed for preparing SafetyNET broadcasts, including SAR broadcasts.

Possible solution for the routeing of the message through a single point of distribution

40 The Group further recalled a possible solution, suggested by the ICAO/IMO JWG on SAR (IMO/ITU EG 11/4/2), for transmitting EGC messages by having one single point of distribution where message originators (MSI providers and SAR operators) would deliver their messages, which would be forwarded to satellite service providers for broadcasting through their respective network.

41 In this context, it was noted that remaining questions to be answered, among others, were who would operate, maintain and finance such a single point of distribution. A view was noted that this concept could have similarities with the LRIT system and could be preferably be operated by an International organisation. Another view was noted that the "Maritime Cloud" under development in the field of e-navigation, also might provide a solution in this regard in future.

Monitoring of broadcasts

42 Noting the requirement for the originator (MSI providers and SAR operators) to monitor the broadcast of their messages by every satellite service provider, the Group noted that originators would experience increased costs if separate receivers were needed for this purpose. It was noted that this issue needed more consideration in the Correspondence Group.

The need to minimize the costs, or at least cost increases

43 The Group recalled discussions in the NCSR Sub-Committee for the need to minimize the costs, or at least cost increases, for MSI providers and SAR operators to provide and monitor MSI broadcasts over multiple GMDSS satellite service providers. It was noted that the issue of interoperability was discussed by the satellite Industry. One of the concerns to provide the service of broadcasting MSI free of charge to the originator was the risk for a much larger amount of messages which would have its effect on the capacity of the satellites. In this context, it was further noted that Inmarsat was currently broadcasting an average of 1,000 messages a day.

Revision of resolution A.707(17)

44 The Group noted that resolution A.707(17) on *charges for distress, urgency and safety messages through the Inmarsat system* should be revised to make it generic for all satellite services recognised for use in the GMDSS. It was noted that the cost element with multiple GMDSS satellite service providers should be reviewed to minimize the costs, or at least cost increases, for MSI providers and SAR operators to provide and monitor MSI broadcasts over multiple GMDSS satellite service providers.

45 In this context, the Group noted that Recommendation ITU-T D.90 on *Charging, billing, international accounting and settlement in the maritime services* was of interest to the GMDSS satellite service providers. It was further noted that Recommendation ITU-T D.90 was listing the types of maritime communications for which no charges were raised, and that it was in alignment with the requirements set out by IMO in resolution A.707(17).

Further work requested from the Correspondence Group with respect to the delivery of MSI

46 The Group invited the Correspondence Group to further consider issues related to multiple GMDSS satellite services with respect to the delivery of MSI, and update the Preliminary draft of the Modernization Plan accordingly.

VHF Data Exchange System (VDES)

47 The Group noted that paragraph 24 on VDES should not be placed under the heading *'Provision of GMDSS satellite services, including redefinition of Sea Area A3'*, and, consequently, it was placed in a separate section.

Routeing of distress alerts and related information

48 The Group discussed the need of developing and revising appropriate instruments to ensure distress alerts routeing to the responsible RCC.

49 The Group invited the Correspondence Group to further consider the issue of the routeing of distress alerts and related information, taking also into account document NCSR 3/14/1 (United States) on the possible use of the Cospas-Sarsat system for distribution of GMDSS digital distress alerts in addition to the current 406 MHz beacon alerts (NCSR 3/29, paragraphs 14.10 to 14.13).

50 In this context, it was particularly noted that not only the routeing of distress alerts and related messages received by satellite systems be considered, but the routeing of all distress alerts and related messages.

NAVDAT

54 The Group noted the view that NAVDAT had almost not been taken into account by IMO up to now. It was further noted that there would be a need for a new output for the incorporation of NAVDAT in the GMDSS. It was also noted that tests had been conducted and were still taking place and that results of those tests should be brought to the attention of the Organization.

55 The Group agreed that the name NAVDAT should not be changed, since it was already widely used elsewhere, including in ITU documentation.

56 The Group noted that interference and other issues, including a coordination scheme needed to be further considered. In this context, it was noted that it might not be possible to copy the existing NAVTEX scheme.

HF communications

57 The Group noted the need for an updated list of HF stations in the GMDSS Master Plan, including information on coast stations capable of receiving and responding to test messages.

Shore-based personnel training

58 The Group noted that in addition to seafarer training, shore-based personnel training and operational requirements would be affected and that amendments to the Radio Regulations, IAMSAR Manual, COMSAR/Circ.33 on the *GMDSS Coast Station Operator's Certificate (CSOC) Model course* might be required.

Timeline and Planned Outputs

59 The Group noted the importance of the continuation of the work after the approval of the Modernization Plan. It was, in particular, noted that new outputs/agenda items were needed to continue the work. After consideration, the Group agreed that the following outputs would be needed as a minimum:

.1 revision of the relevant regulations of SOLAS Chapters III and IV, and all necessary related and consequential amendments to other existing instruments, including non-mandatory instruments;

.2 revision of resolution A.1001(25) and MSC.1/Circ.1414; and

.3 development of performance standards for NAVDAT.

60 The Group noted further that it had been the intention to include a request for the above outputs in the Modernization Plan, for endorsement by the NCSR Sub-Committee and inclusion in the High-level Action Plan by the Maritime Safety Committee. In this context, the Group noted that the Committee could take the need for these outputs into consideration when identifying the products to be included as planned outputs in the High-level Action Plan for the coming biennium (MSC-MEPC.1/Circ.4/Rev.4, paragraph 4.1).

61 Following consideration of the above information, the Group concluded that the NCSR Sub-Committee should bring the need for new planned outputs to the attention of the Committee in the last year of a biennium, i.e. 2017 or 2019.

62 Having noted the information provided by the coordinator of the Correspondence Group, that this Group was already aiming to deliver a complete draft of the Modernization Plan for consideration at NCSR 4, the Group agreed that the aim should be to have the Modernization Plan endorsed by NCSR 4 with the view to approval by MSC 98 in June 2017. This would allow MSC 98 to take the need for the new outputs into consideration when identifying the products to be included as planned outputs in the High-level Action Plan for the 2018-2019 biennium.

63 Following the discussion, the Group invited the Correspondence Group to:

.1 rename the 'Timeline' to 'Plan of work for the revision and development of legal instruments, performance standards and guidance material';

.2 develop the list of IMO instruments which should be reviewed; and

.3 develop the necessary information, including demonstration and documentation, for the proposed planned outputs, in accordance with MSC-MEPC.1/Circ.4/Rev.4.

Further work to be conducted in the Correspondence Group

64 The Group recalled that the Correspondence Group should, taking into account the outcome of discussions at this meeting as set out above and reflected in appendix 3, submit a report, including the document containing a Draft of the Modernization Plan of the GMDSS, for consideration at NCSR 4. The Group invited the Correspondence Group to make sure that the Draft Plan would be in accordance with the outcomes of NCSR 3, the High-level review and the Detailed review, and that no issues would be overlooked.

CONSIDERATION OF THE OUTCOME OF WRC-15 AND PREPARATION OF INITIAL ADVICE ON A DRAFT IMO POSITION ON WRC-19 AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES (AGENDA ITEM 5)

65 The Group noted the outcome of WRC-15 provided by the Secretariat (IMO/ITU EG 12/5). The Group noted, in particular, the WRC-19 agenda items of relevance to the maritime community.

Preliminary draft IMO position on WRC-19 agenda items

66 The Group noted the proposal by China (IMO/ITU EG 12/5/9) containing Preliminary draft IMO positions on ITU WRC-19 agenda items possibly of interest to the maritime service. The Group decided to use the annex to this document as the basis to further develop the preliminary draft IMO position on WRC-19 agenda items at this meeting.

67 The Group developed the Preliminary draft IMO position on WRC-19 agenda items concerning matters relating to maritime services, as set out in appendix 4. Information regarding the discussions which took place at this meeting is set out below.

WRC-19 agenda item 1.8

71 The Group noted the Work plan for WRC-19, agenda item 1.8 (IMO/ITU EG 12/5/1) and the Working document towards draft CPM text (IMO/ITU EG 12/5/2), as well general information also provided by the Secretariat (IMO/ITU EG 12/3).

72 The Group further noted the information provided by the United States (IMO/ITU EG 12/5/12) on the work of ITU-R in preparation for WRC-19 Agenda Item 1.8.

Thuraya

73 The Group noted that MSC 88, in 2010, had considered documents MSC 88/8/1 and MSC 88/INF.4 (United Arab Emirates), containing information related to the recognition of new satellite providers within the GMDSS under the criteria of resolution A.1001(25). MSC 88 had noted that the United Arab Emirates had proposed that the Thuraya Satellite System should be considered within the discussions on the GMDSS taking place in the COMSAR Sub-Committee under its agenda item "Scoping exercise to establish the need for a review of the elements and procedures of the GMDSS". After discussion, MSC 88 instructed COMSAR 15 to consider the matter under the above mentioned agenda item.

74 The Group further noted that, consequently, the questions raised at MSC 88 had been taken into account in the project on the Review and Modernization of the GMDSS.

<u>GMDSS Modernization</u>

75 The Group noted further that WP 5B, at its May 2016 meeting, had noted that WRC-19 agenda item 1.8 also included consideration of GMDSS modernisation, but there were no contributions to that meeting on this element.

<u>Additional Satellite systems</u>

76 The Group noted the information provided by the United States (IMO/ITU EG 12/INF.2) concerning the outcomes of NCSR 3 and MSC 96 relating to the application for recognition of the Iridium mobile-satellite system as part of the GMDSS.

77 The Group noted an observation that the document reflected the outcomes of NCSR 3 and MSC 96 in general, however, the term 'comprehensive list of conditions' as reflected in the reports of NCSR 3 and MSC 96 had been changed to 'definitive list of conditions' in this information paper, which might lead to confusion.

Out-of-band interference to the radioastronomy service

78 The Group noted a liaison statement from WP 7D to WPs 4C and 5B (and in copy to the Joint IMO/ITU Experts Group) (IMO/ITU EG 12/5/8) on the compatibility of the radioastronomy service (RAS) with satellite-provided GMDSS. WP 7D had noted that Iridium was proposing to offer GMDSS services in parts of the frequency band 1 613.8-1 626.5 MHz, and that the RAS had a primary allocation in the adjacent frequency band 1 610.6-1 613.8 MHz. WP 7D had further noted that out-of-band interference had been reported at RAS sites operating in 1610.6-1613.8 MHz resulting from existing MSS systems.

79 In this context, the Group considered the proposal by Germany (IMO/ITU EG 12/5/10) that Iridium should be requested to deliver relevant information not yet available on the simulations and the method developed to protect the RAS. The Group further considered the information provided by the United States (IMO/ITU EG 12/5/13), that bilateral coordination was already taking place with affected parties according to ITU procedure and that the launch of the new satellites would enable increased protection to be in accordance with relevant ITU-R recommendations, that the launch of the new satellites was expected to be completed by the end of 2017, and that protection of land-based radio astronomy observatories would be significantly improved over the existing system.

80 During the ensuing discussion, different views were expressed concerning the information as requested by Germany in document IMO/ITU EG 12/5/10. On the one hand some countries were of the view that ITU-R should conduct compatibility studies, on the other hand the United States expressed the view that it had already shared this sensitive information bilaterally with concerned administrations.

81 In this context, some countries expressed the view that IMO might consider whether it wished to incorporate Iridium as an additional GMDSS satellite provider while there were still unresolved issues. Other countries were of the view that consideration of these issues was outside the remit of IMO and should be studied, discussed and decided in the framework of ITU and bilateral discussions.

82 Finally, the Group noted that if Iridium would not be recognised by IMO at the time of the Conference, WRC-19 might not be in a position to take a decision on this matter under agenda item 1.8. It was, therefore, considered to be important that IMO and ITU would consider matters within their area of responsibility.

83 After a lengthy discussion, it was agreed that the Preliminary draft IMO position should reflect the interest of the maritime community in agenda item 1.8, and invite ITU to:

.1 resolve any issues under Resolution **359 (Rev.WRC-15)**, in relation to the future operation of newly recognised GMDSS satellite service providers; and

.2 take the appropriate regulatory measures to ensure full protection and availability of the frequency bands to be used by new recognised GMDSS satellite service providers for the provision of GMDSS services.

Text of background section and Preliminary draft IMO position

84 The Group reviewed and modified the text of the background section, as initially proposed by China in the annex to document IMO/ITU EG 12/5/9, and developed the Preliminary draft IMO position in accordance with the discussion above.

WRC-19 agenda item 1.9.1

85 The Group noted the Work plan for WRC-19, agenda item 1.9.1 (IMO/ITU EG 12/5/3) and the Working document towards draft CPM text (IMO/ITU EG 12/5/4), as well general information also provided by the Secretariat (IMO/ITU EG 12/3).

86 With regard to the Work Plan the Group noted that the following two issues should be considered with priority:

.1 review, and complete if possible, the definitions/scope; and

.2 collecting information on categorization.

87 The Group noted the information provided by Germany (IMO/ITU EG 12/5/11) and, in particular the request to discuss the problematic nature of "autonomous maritime radio devices" (AMRDs).

88 The Group further noted the information provided by the United States on this agenda item (IMO/ITU EG 12/5/12).

89 Taking into account the information provided in documents IMO/ITU EG 12/5/11 and IMO/ITU EG 12/5/12, the Group considered a liaison statement from WP 5B to IMO and IALA (IMO/ITU EG 12/5/7) inviting IMO and IALA to:

.1 consider to this topic related issues, particularly on the need to categorize the various autonomous maritime radio devices; and

.2 note that WP 5B was working towards a formal definition for the term AMRD.

90 The Group noted the draft definition for AMRD under discussion in WP 5B. The Group further noted the many square brackets in the draft definition, and that many issues needed to be discussed in detail.

91 The Group further noted that care should be taken to define this matter, because there was a risk that a definition of AMRD might cause more problems in the end than it might solve.

92 The view was expressed that it was important to look at the operational environment and approach the matter from that perspective and to distinct what would be of importance for the safety of navigation, and what would not. For instance by answering the question which devices should be shown on an ECDIS, and which one should not, it might be possible to identify several categories and consequential a better way to decide on the appropriate definition.

93 After consideration, the Group suggested the following definition of AMRDs:

"An autonomous maritime radio device (AMRD) is a mobile station; operating at sea and transmitting independently of a ship station or a coast station.

Two groups of AMRDs are identified:

.1 AMRDs that influence the safety of navigation; and

.2 AMRDs that do not influence the safety of navigation."

Text of background section and Preliminary draft IMO position

94 The Group reviewed and modified the text of the background section and Preliminary draft IMO position, as initially proposed by China in the annex to document IMO/ITU EG 12/5/9.

95 The Group discussed the need for protection of all systems operating under the Maritime Mobile Service and not only the integrity of AIS and GMDSS. After consideration, the Group decided to restrict the Preliminary draft IMO position, for the time being, to protection of the integrity of AIS and GMDSS and to consider the matter further at future meetings.

ANY OTHER BUSINESS (AGENDA ITEM 6)

MSC.1/Circ.1460

105 The Group noted that in accordance with MSC.1/Circ.1460, HF radiocommunication equipment capable of operating narrow-band direct printing (NBDP) should be updated so that following the first radio survey after 1 January 2017 it meets the channelling arrangements reflected in sections II and III of part B in Appendix 17 to the RR. It was further noted that, in many cases, there was a need to install new equipment to comply with this update.

106 The Group also noted that the general view under the modernised GMDSS was, that NBDP could be removed as a required system under the GMDSS (IMO/ITU EG 12/4, paragraph 55 of the annex) and that MSC.1/Circ.1460 should be revised to delete the references to HF radiocommunication equipment capable of operating NBDP (IMO/ITU EG 12/4, paragraph 41 of the annex).

107 Following the above, the Group agreed that it was not realistic to require replacement of equipment to comply with a requirement which was already considered to be obsolete.

108 In this context, the Group noted that Japan was considering a submission to MSC 97, proposing an amendment to MSC.1/Circ.1460, to provide the appropriate guidance to Member Governments before 1 January 2017.

Planning for the thirteenth meeting of the Group

111 The Group noted that MSC 96 had already authorized the holding of the meeting of the Experts Group in 2017 (MSC 96/25, paragraph 23.41.5), and the Council had endorsed this intersessional meeting for 2017 (C 116/D, paragraph 7.4).

112 The Group noted that the 13th meeting of the Group was provisionally scheduled to take place at IMO Headquarters in London from 10 to 14 July 2017.

ACTION REQUESTED OF THE NCSR SUB-COMMITTEE

113 The NCSR Sub-Committee is invited to:

.1 consider and endorse the draft amendments to resolutions MSC.148(77), MSC.306(87) and MSC.252(83), with a view to forward them to the Committee for approval (paragraph 10 and appendix 1 of the annex);

.2 consider and approve a draft liaison statement on *Changes Consequential to displaying NAVTEX and Inmarsat C SafetyNET information on Integrated Navigation Displays* to IHO, WMO and IEC TC 80 (paragraph 11 and appendix 2 of the annex);

.3 note the discussion which took place on the operational use of new DSC Class M devices and take the outcome of discussions into account when further considering the matter (paragraphs 12 to 15 of the annex);

.4 note the discussion on the use of AIS on unmanned craft and dynamic navigation markers and that, in the view of the Group, initial guidance should be given by IMO in order to allow ITU to take the appropriate measures regarding the assignment and use of identities, as well as the development of technical characteristics, as appropriate (paragraphs 17 to 24 of the annex);

.5 note the discussions which took place on the further development of the Preliminary draft of the Modernization Plan (paragraphs 27 to 64 and appendix 3 of the annex);

.6 forward the draft Modernization Plan, including the outcomes of the High-level and Detailed review, to the HTW Sub-Committee for their consideration and to provide comments and advice, as appropriate, from a human element and end-user perspective to be taken into account for the implementation of the modernised GMDSS (paragraph 36 of the annex);

.7 note that the Group agreed that the aim should be to have the Modernization Plan endorsed by NCSR 4 with the view to approval by MSC 98 in June 2017 and that this would allow MSC 98 to take the need for new outputs into consideration when identifying the products to be included as planned outputs in the High-level Action Plan for the 2018-2019 biennium (paragraph 62 of the annex);

.8 note that the Correspondence Group on the Modernization of the GMDSS, taking into account the outcome of discussions at this meeting of the Experts Group, should submit a report, including the document containing the draft

Modernization Plan of the GMDSS, for consideration at NCSR 4 (paragraph 64 of the annex);

.9 note the discussion which took place on the development of the Preliminary draft IMO position on WRC-19 agenda items (paragraphs 66 to 104 of the annex);

.10 consider and further develop the Preliminary draft IMO position on WRC-19 agenda items concerning matters relating to maritime services (paragraph 67 and appendix 4 of the annex);

.11 note the discussion which took place with respect to MSC.1/Circ.1460 in relation to HF radiocommunication equipment capable of operating narrow-band direct printing (NBDP) (paragraphs 105 to 108 of the annex);

.12 endorse the holding of the 13th meeting of the Group from 10 to 14 July 2017, at IMO Headquarters in London (paragraphs 111 and 112 of the annex); and

.13 note the report in general.

ACTION REQUESTED OF ITU-R

114 ITU-R Working Party 5B is invited to note:

.1 the discussion on the use of AIS on unmanned craft and dynamic navigation markers and that, in the view of the Group, initial guidance should be given by IMO in order to allow ITU to take the appropriate measures regarding the assignment and use of identities, as well as the development of technical characteristics, as appropriate (paragraphs 17 to 24 of the annex);

.2 the relevant information related to the development of the Preliminary draft IMO position on WRC-19 agenda items (paragraphs 66 to 104 and appendix 4 of the annex);

.3 the suggested definition of AMRDs (paragraph 93 of the annex); and

.4 the report in general.

115 ITU-R Working Parties 4A, 4C, 7B and 7D are invited to note:

.1 the relevant information related to the development of the Preliminary draft IMO position on WRC-19 agenda items (paragraphs 66 to 104 and appendix 4 of the annex); and

.2 the report in general.

Appendix 1

DRAFT AMENDMENT TO RESOLUTION MSC.148(77), RESOLUTION MSC.306(87) AND RESOLUTION MSC. 252(83)

Draft amendment to Resolution MSC.148(77) *Performance Standards for Narrow-Band Direct-Printing Telegraph Equipment for the Reception of Navigational and Meteorological Warnings and Urgent Information to Ships (NAVTEX)*

1. In paragraph 9 "INTERFACES":

    1. Add a new paragraph:

        §9.4 The equipment should include a~~A~~n interface for alert management in accordance with MSC.302(87) Performance Standards for Bridge Alert Management (BAM).

Draft amendments to Resolution MSC.306(87) *Revised Performance Standards For Enhanced Group Call (EGC) Equipment*

2. In paragraph 1. INTRODUCTION

    1. Insert a new paragraph between §1.2 and §1.3:

        "1.3 Alternatively to the requirement in paragraph 1.2, the equipment need not provide means to produce a printed copy of received information if it is ~~if the equipment does not provide means to produce a printed copy of received information, it shall only be~~ installed in combination with an interface connecting it to navigation equipment that is compliant with [MSC 252(83) as amended] Integrated Navigation System. Provisions for interconnection to Resolution A.811(19) Integrated Radio Communication System shall also be included."

    2. Existing paragraph 1.3 is renumbered as paragraph 1.4.

3. Add a new paragraph 6:

    "6. INTERFACES

    6.1 The equipment should include at least one interface for the transfer of received data to other navigation display or integrated communications equipment.

    6.2 The equipment should include an interface for alert management in accordance with MSC.302(87) Performance Standards for Bridge Alert Management (BAM)).

    6.3 All interfaces provided for communication with other navigation or communication equipment should comply with the relevant international standards[1].

[1] Refer to IEC 61162.

Draft amendments to Resolution MSC. 252(83) *Revised Performance Standards for Integrated Navigation Systems (INS)*

4. In paragraph 3.5 "Acceptance of INS as navigational equipment", add to the bottom of Table 2:

Allow for accepting the INS in compliance with as	INS in compliance with	
…	…	…
NAVTEX or other IMO-recognized equipment accommodating other providers of GMDSS terrestrially-based services	Meteorological warnings (7.2.3) Navigation and SAR warnings (7.3.2) Ice warnings (7.3.2)	MSC.148(77)
Inmarsat-C EGC SafetyNET or other IMO-recognized equipment accommodating other providers of GMDSS satellite services ~~system~~	Meteorological warnings (7.2.3) Navigation and SAR warnings (7.3.2) Ice warnings (7.3.2)	A.807(19) as amended by MSC.68(68) annex 4, MSC.306(87)

5. In paragraph 7 "Task and functional requirements for an INS":

.1 In paragraph 7.3.2 "Additional mandatory functions":

Add to: "The INS should provide capability for":

- [….]
- Coastal and NAVAREA navigational warnings
- Search and Rescue (SAR) warnings
- Coastal and METAREA Meteorological warnings
- Ice warnings
- Maritime safety information overlay functions

.2 In paragraph 7.3.3 "Optional Functions":

delete the bullet point: NAVTEX; and

add the bullet point: The operator may appropriately filter the display of ~~NAVTEX, Inmarsat-C SafetyNET and IMO-recognized GMDSS provider~~ Maritime Safety Information messages.

.3 In paragraph 7.5.2.1, modify as follows:
"

- …..
- safety related messages e.g., AIS safety-related and binary messages, ~~NAVTEX, Inmarsat-C EGC SafetyNET, messages from an IMO-recognized GMDSS provider~~Maritime Safety Information messages."

.4 In paragraph 7.7.1, modify as follows:
"

- …
- presentation of received safety related messages, such as AIS safety-related and binary messages, Application Specific Messages (ASM), ~~NAVTEX, Inmarsat-C EGC SafetyNET, maritime safety information~~

~~messages from an~~ ~~IMO-recognized GMDSS provider~~ Maritime Safety Information messages"

6. In Appendix 1 "DEFINITIONS", modify as follows:

External safety related messages	Data received from outside of the ship concerning the safety of navigation, through equipment listed in SOLAS Chapter V and/or ~~NAVTEX, Inmarsat-C EGC SafetyNET or~~ maritime safety information messages ~~from an IMO-recognized GMDSS provider~~.

Entry into force date

7. These amendments to Resolutions MSC.252(83), MSC.306(87), and MSC.148(77) should be applicable to equipment installed on or after~~come into effect not later than~~ [1 January 2019.]

Appendix 2

DRAFT LIAISON STATEMENT TO WMO, IHO AND IEC TC 80

Changes Consequential to displaying NAVTEX and Inmarsat C SafetyNET information on Integrated Navigation Displays

IMO is revising Resolutions MSC.252(83) *Revised Performance Standards for Integrated Navigation Systems (INS),* MSC.306(87) *Revised Performance Standards For Enhanced Group Call (EGC) Equipment*, and MSC.148(77) *NAVTEX* to enable interconnection of NAVTEX and Inmarsat SafetyNET for the purpose of displaying GMDSS maritime safety information on integrated navigation display systems.

IHO's World-Wide Navigational Warning Service Sub-Committee is invited to review, at the appropriate time, any necessary changes to the NAVTEX Manual, International SafetyNET Manual or other manuals as a consequence to these performance standard changes or as a consequence to IMO recognizing a GMDSS mobile satellite service provider.

IEC Technical Committee 80 is invited to consider any changes, if necessary, to their test standards as a consequence to these performance standard changes. In reviewing these test standards IEC TC80 is invited to consider ensuring NAVTEX, EGC and IMO-recognized GMDSS mobile satellite equipment are compatible to the extent practicable.

Appendix 3

PRELIMINARY DRAFT OF THE MODERNIZATION PLAN FOR THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS), AS DISCUSSED AND AMENDED DURING THE MEETING

Introduction

1 The Global Maritime Distress and Safety System (GMDSS) was adopted as part of the 1988 Amendments to the International Convention for the Safety of Life at Sea Convention, 1974 (SOLAS). It was fully implemented in 1999. It has served the mariner and the maritime industry well since its inception, but some of the GMDSS technologies used have not reached their full potential, and some GMDSS functions could be performed by more modern technologies.

2 In addition to ships required to meet GMDSS requirements under regulation IV/1 of the SOLAS convention, other vessels (non-SOLAS vessels) also benefit from the GMDSS because search and rescue (SAR) communications are part of the GMDSS. Many national Administrations require non-SOLAS vessels[2] to be equipped with GMDSS equipment, or equipment compatible with the GMDSS including some of the recommendations and standards of the ITU and IEC. The existing GMDSS architecture ensures that a ship in distress anywhere should always be heard and responded to. It encompasses a unique combination of international technical and operational standards and recommendations, and further a globally coordinated use of frequencies, for both on board ships and on shore.

3 In 2012, the Maritime Safety Committee approved a new unplanned output on the Review and Modernization of the GMDSS (MSC 90/28, paragraph 25.18). The project includes a High Level Review (NCSR 1/28, annex 10), a Detailed Review (NCSR 3/29, annex 7), and then a Modernization Plan presented here, based on the earlier work.

4 As a result of the Detailed Review, no new carriage or retrofit requirements for ships are proposed, although consideration of a requirement for all lifeboats and at least some liferafts to be equipped with Search and Rescue Transmitters (SART) is recommended. Some equipment will evolve over time to use newer technologies, and updates of equipment may be necessary as a result of decisions of future competent ITU World Radiocommunication Conferences (WRCs), *e.g.* if spectrum allocation and/or regulatory provisions are amended. Where new technologies are introduced, it is generally intended that ships can use existing equipment as long as that equipment is serviceable. Detailed Review (NCSR 3/29, annex 7, approved by MSC 96)

5 The Modernization Plan is based on the outline presented in section 17 of NCSR 3/29, annex 7. The plan consists of the following components:

5.1 Overarching considerations
5.2 Provision of GMDSS satellite services and redefinition of Sea Area 3
5.3 Search and Rescue technologies
~~5.3~~5.4 [VHF data exchange system (VDES)]
~~5.4~~5.5 NAVDAT
~~5.5~~5.6 HF Communications

[2] See the International Convention for Safety of Life at Sea, 1974 (SOLAS), as amended, Chapter I, regulations 1 and 3, and Chapter IV, regulation 1.

~~5.6~~5.7 GMDSS carriage requirements
~~5.7~~5.8 Alignment with the Radio Regulations ~~-~~and other ITU-R ~~instruments~~ documents
~~5.8~~5.9 False alerts
~~5.9~~5.10 Mariner training
~~5.10~~5.11 Obsolete provisions
~~5.11~~5.12 Clarifications

6 The plan concludes with a timeline (paragraph 64) for planned outputs.

The Modernization Plan

7 The following Modernization Plan is based on the outline referred to in paragraph 5 and approved at NCSR 3. It is reorganized into parts that can be developed as separate deliverables.

Overarching considerations

8 ~~The GMDSS modernization process, including new and revised instruments, should encourage non-SOLAS vessels to participate in the GMDSS for safety, technical and economic reasons. Instruments affecting non-SOLAS vessels should be compatible with the GMDSS. (Detailed review paragraphs 17.4, 17.27 and 17.31)~~
~~1~~ The GMDSS modernization process, including new and revised instruments, should ensure that non-SOLAS ships are not excluded from participation in the GMDSS for technical or economic reasons, and that instruments bearing on non-SOLAS ships should be compatible with the GMDSS.

~~2~~9 ~~IMO liaison statements to ITU-R must be guided by the principle that non-SOLAS ships are encouraged to make use of the GMDSS, and that the integrity of the GMDSS should be preserved, including if necessary, that ITU-R recommendations on GMDSS systems and frequency use are prescriptive. (Detailed review paragraph 17.30)~~ IMO liaison statements to ITU-R should be guided by the principle that the integrity of the GMDSS, including non-SOLAS ships, be preserved, and that ITU-R recommendations on GMDSS systems and frequencies are prescriptive.

~~3~~10 The GMDSS modernization project needs to continue to support the needs of the e-navigation strategy~~.~~ (Detailed review paragraph 17.5). The commonalities between GMDSS and e-navigation concept should be identified.

~~4~~11 The Human Element will be embodied both aboard and ashore in the process to ensure that the implementation of the modernised GMDSS and the technology ~~is~~are fit for purpose.

~~8~~12 In connection with the deliberations on the GMDSS Modernization process, the results and conclusions of the High Level Review, and the Detailed Review with related documents will continue to guide the work. (NCSR 1/28, annex 10; NCSR 3/17, annex, a~~A~~ppendices 2 and 3; NCSR 3/29, annex 7)

~~9~~13 Action required: The overarching considerations need to be observed throughout the GMDSS Modernization project.

Provision of GMDSS satellite services and redefinition of Sea Area A3

~~5~~14 ~~Revisions~~ Amendments to SOLAS Chapter IV are required to provide for additional mobile satellite systems recognized for use in the GMDSS. MSC 96 agreed to include this as a new output as a priority for NCSR 4. This work is underway including revision of certificates, so ~~no~~ further action on this item under the Modernization Plan might not be ~~is~~ required. (Detailed review paragraph 17.6)

~~10~~15 The definition of Sea Area A3 in SOLAS Chapter IV should be revised to read:

"*Sea area A3* means an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile-satellite communication service supported by the ship earth station carried on board in which continuous alerting is available."

~~6~~16 This redefinition is part of the expected SOLAS revisions described in paragraph 14, so ~~no~~ further action on this item under the Modernization Plan ~~is~~ might not be required. (Detailed review paragraph 17.10)

~~11~~17 There are consequential matters to be considered with regard to the new definition, and the effect on Sea Area A4. Sea Area A3 will be different for each different mobile-satellite communication service. Sea Area A4 is not redefined, but because it is the sea area not included in Sea Areas A1, A2, and A3, it will be different for ships using different mobile-satellite service providers, and would not exist in the case of a satellite service provider with global coverage.

~~12~~18 One important consequence of the new A3 definition is that it is now a purely satellite service area. The "HF alternative" is still available to a ship which operates beyond Sea Area A2 but does not use a recognized mobile-satellite communication service. Such ships will now be operating in Sea Area A4 which is no longer just polar regions. HF can also be used in Sea Area A3 as an additional means of alerting for a ship using a recognized mobile-satellite communication service.

~~13~~19 Resolution A.1001(25) on Criteria for the provision of mobile satellite communication systems in the GMDSS and MSC.1/Circ.1414 on Guidance to prospective GMDSS satellite service providers, need to be revised to take into account recent experience in reviewing GMDSS satellite service provider applications. (NCSR 3/29 paragraphs 11.8 and 11.13.3, Detailed review paragraphs 2.1 and 15.3)

~~14~~20 A new generic performance standard for ship-borne GMDSS equipment to accommodate additional providers of GMDSS satellite services is needed. MSC 95 agreed to include this in the 2016-2017 biennial agenda of the NCSR Sub-Committee. This work is underway, so no further action on this item under the Modernization Plan is required. (Detailed review paragraph 17.6)

21 ~~Formatting of Enhanced Group Calling (EGC) should be standardized if possible to minimize delays, and if possible, a way should be found to transmit EGC simultaneously on all GMDSS satellite service providers. (Detailed review paragraph 17.35)~~

[The formatting of Enhanced Group Calling (EGC) MSI message content has been standardised and harmonised in accordance with the revised Joint IMO/IHO/WMO Manual on maritime safety information (MSI) (MSC.1/ Circ. 1310/Rev. 1).] It was further noted that IAMSAR Manual, Volume II, was providing guidance for formatting SAR related EGC.

A single point of distribution should be considered for transmitting EGC, through different satellite service providers without using separate system interfaces, special attention should be given to governance and management issues. The broadcast of EGC by satellite service provider should be achieved in a timely manner.

~~7~~

~~8~~22 Possible ways for MSI providers to provide and monitor MSI broadcasts over multiple GMDSS satellite service providers should be ~~identified~~ explored within ~~a~~h a context of interoperability with a view to ensure unified implementation ~~minimizing the costs, or at least the cost increases~~ for MSI providers. ~~R~~Resolution A.707(17) ~~could~~ should be revised, taking into account multiple GMDSS satellite service providers., ~~to provide for shore-to-ship MSI broadcasts without charge to the originator~~. One intention of these actions is to minimize costs to MSI providers. (Detailed review paragraph 17.36)

~~15~~23 The GMDSS Master Plan needs to be revised and an MSI manual or manuals prepared to incorporate additional satellite service providers. (Detailed review paragraph 3.22; partly paragraph 3.10)

~~16~~24 ~~The use of VDES needs to be considered in future possible mechanisms for the distribution of MSI. (Detailed review paragraph 17.39)~~

~~17~~25 Action required: (See timeline at paragraph 64)

~~17.1~~25.1 The GMDSS Master Plan needs to be revised and an MSI manual or manuals prepared to incorporate additional satellite service providers under the existing continuous work item on updating of the GMDSS Master Plan and guidelines on MSI.

~~17.2~~25.2 A new output is needed to:

.1 revise resolution A.1001(25) and MSC.1/Circ.1414 to take into account recent experience in reviewing GMDSS satellite service provider applications,

.2 revise resolution A.801(19) to include additional GMDSS satellite service providers,

.3 revise resolution A.801(19) to include the new definition for Sea Area A3,

.4 revise resolution A.707(17) to take into account additional satellite providers, and in particular consider ways to minimize cost or cost increase for MSI providers, and if practicable, provide for shore-to-ship MSI broadcasts without charge to the originator, and

.5 develop or revise appropriate instruments to ensure all distress alerts are routed directly to the responsible RCC that is capable of receiving them.[3]

~~17.3~~25.3 Editorial revisions are required for the following:

.1 Resolution A.1051(27), MSC.1/Circ.1403, and MSC.1/Circ.1287/Rev.1, MSC.306(87).Rev – Remove references to "Inmarsat" and refer to "recognized mobile satellite system" instead. Remove references to "SafetyNet" and refer to "coordinated broadcast and automated reception of maritime safety information" and SAR information" instead.

Search and Rescue Technologies

~~9~~26 A decision needs to be made as to whether all lifeboats, and whether some or all inflatable liferafts should be equipped with installed Search and Rescue Transmitters (SART),

[3] Experts Group is invited to note COMSAR 13/14, paragraphs 6.50 – 6.52.

and how that requirement should be introduced~~.~~, taking into account the regulatory scheme for survey and certification and environmental conditions inside of the survival craft. (Detailed review paragraph 17.2) Detailed Review (NCSR 3/29, annex 7)

~~10~~27 ~~Considering the differences in technologies, a decision needs to be made as to whether new SARTs should be AIS-SARTs, or whether radar SARTs can continue to be used for new installations.~~ Appropriate revisions need to be made to SOLAS Chapter IV and the "Record of Equipment" list in the certificates. (Detailed review paragraph 17.3)

~~18~~28 Consider the development of a circular or other instrument to encourage Member Governments to adopt a requirement for certain categories of ships to carry VHF direction finders to detect 121.5 MHz signals and VHF marine band transmissions (for instance off shore industry vessels). (Detailed review paragraph 17.24)

~~19~~29 Consideration should be given to the possible SAR benefits of the inclusion of text messaging, digital data, and chat messaging capabilities. (Detailed review paragraph 17.25)

~~11~~30 Resolution A.810(19) and related sections of SOLAS Chapter IV need to be revised to address the Cospas-Sarsat transition to the MEOSAR system. Consider the utility of an AIS technology locating device as part the EPIRB performance standard.

~~20~~31 MSC/Circ.1039 on Guidelines for shore-based maintenance of satellite EPIRBs and MSC/Circ.1040 on Guidelines on Annual Testing of 406 MHz Satellite EPIRBs need to be revised to include AIS locators, delete L-band EPIRBs, and reviewed for needed changes in respect of Second Generation Beacons.

~~21~~32 Action required: (See timeline at paragraph 64)

~~21.1~~32.1 ~~Invite the Sub-Committee on Ship Systems and Equipment (SSE) and the ICAO/IMO Joint Working Group on SAR to consider requirements for Search and Rescue Transmitters (SART) in lifeboats and liferafts. [*What is the proper procedure for this?*]~~

~~21.2~~32.2 ~~Decide on future SART type and r~~Revise SOLAS Chapter IV and Records of Equipment for locating technology for survival craft accordingly.

~~21.3~~32.3 Continue discussion whether 121.5 MHz direction finders should be on certain categories of ships and if necessary prepare a circular.

~~21.4~~32.4 Continue discussion on possible benefits of text messaging digital data, and chat messaging capabilities and if appropriate prepare resolution or circular for the purpose.

~~21.5~~32.5 Revise resolution A.810(19) and related sections of SOLAS Chapter IV to address the Cospas-Sarsat transition to the MEOSAR system and inclusion of AIS technology locating device if recommended.

~~21.6~~32.6 Update MSC/Circ.1039 on Guidelines for shore-based maintenance of satellite EPIRBs.

~~21.7~~32.7 Update MSC/Circ.1040 on Guidelines on Annual Testing of 406 MHz Satellite EPIRBs.

VDES

The use of VDES needs to be considered in future possible utility ~~mechanisms~~ for the distribution of MSI and SAR information. (Detailed review paragraph 17.39)

NAVDAT

~~22~~33 SOLAS Chapter IV should be revised to allow ships to use NAVDAT service in addition to or in place of NAVTEX in places where NAVDAT is available. (Detailed review paragraph 17.8)

~~12~~34 When the NAVDAT concept is sufficiently developed, IMO, IHO, ~~and~~ ITU and WMO should develop the necessary technical recommendations and performance standards for international NAVDAT service. This work should be closely followed by the development of IMO and IEC standards for shipborne NAVDAT and/or combined NAVTEX/NAVDAT equipment. (Detailed review paragraph 17.23, partly repeated in paragraphs 17.29 and 17.33)

~~13~~35 The need for a NAVDAT coordination scheme needs to be considered taking into account that it might not be possible to copy the existing NAVTEX scheme. ~~(It may be possible to use the NAVTEX coordination scheme.)~~

~~23~~36 Action required: (See timeline at paragraph 64)

~~23.1~~36.1 If sufficiently developed, prepare technical recommendations and performance standards for international NAVDAT service and ship equipment, including a coordination scheme.

~~23.2~~36.2 Revise SOLAS Chapter IV to allow ships to use NAVDAT service in addition to or in place of NAVTEX in places where NAVDAT is available.

HF communications

~~14~~37 The technical basis ~~for~~ for determining the minimum number of HF GMDSS coast stations and the governance of their geographical distribution should be reviewed and, if necessary, consequential changes should be included in resolution A.801(19). The list of GMDSS coast stations contained in the GMDSS Master Plan should be updated. (Detailed review paragraph 17.28)

~~24~~38 Consider the future role for HF data exchange under ITU-R Recommendation 1798-1. (Detailed review paragraph 17.32)

~~25~~39 Guidance for coastal radio stations (CRS) should be established through the development of IEC standards. (Detailed review paragraph 17.34)

~~15~~40 Technological improvements can make HF easier to use. ~~(Detailed review paragraph 17.40)~~Consider revising resolutions A.806(19) and MSC.68(68), annex 3, to include a requirement for frequency scanning and/or Automatic Link Establishment (ALE). (Detailed review paragraph 17.40)

~~26~~41 MSC.1/Circ.1460 should be revised to delete the references to HF radiocommunication equipment capable of operating NBDP. Alternatively it may be revoked since it relates to the 2012 revisions to the Radio Regulations, and by 2022 should not be needed any longer.

~~27~~42 Action required: (See timeline at paragraph 64)

~~27.1~~42.1 Decide on the future role of HF communications in the GMDSS.

~~27.2~~42.2 Consider revising resolutions A.806(19) and MSC.68(68), annex 3, to include a requirement for frequency scanning and/or Automatic Link Establishment (ALE). ~~(Detailed review paragraph 17.40)~~

~~27.3~~42.3 SOLAS Chapter IV revisions as appropriate.

GMDSS Carriage Requirements

~~28~~43 Except for communications equipment installed or always carried in survival craft, the communications requirements for ships and life-saving appliances in SOLAS Chapter III, should be moved to Chapter IV. (Detailed review paragraph 17.1)

~~29~~44 Action required: (See timeline at paragraph 64.)

~~29.1~~44.1 Relocate requirements for GMDSS now in SOLAS Chapter III to Chapter IV.

Alignment with the Radio Regulations and other ITU-R ~~instruments~~documents

~~30~~45 Definitions are also needed for "Security communications" and "Other communications", as well as requirements for radio installations to perform these functions. (Detailed review paragraph 17.11)

~~31~~46 References to the International Radio Consultative Committee (CCIR) should be changed to the International Telecommunications Union (ITU-R). (Detailed review paragraph 17.12)

~~32~~47 Terms and definitions should be harmonized with the Radio Regulations and other ITU-R documents. MSC/Circ.1038 should be revised with respect to "general communications."

~~33~~48 "Security communications" and "Other communications" should be added to the functional requirements in addition to the GMDSS functions. (Detailed review paragraph 17.14)

~~34~~49 The current functional requirements require ships to transmit and receive Maritime Safety Information, but by definition MSI is sent from shore stations and received by ships. Ships transmit and receive safety related information.

~~35~~50 Action required: (See timeline at paragraph 64)

~~35.1~~50.1 Align definitions and functional requirements in SOLAS Chapter IV with ITU-R and the Radio Regulations.

~~35.2~~50.2 Correct the functional requirements in SOLAS Chapter IV with respect to MSI.

False alerts

~~16~~51 No specific action has been identified to reduce false alerts and no determinations have been made at this stage as to which GMDSS equipment is most responsible for false

alerts. However, EPIRBs and MF/HF DSC are to be recognized as transmitting false alerts under the current GMDSS. Measures should be taken to guide/educate people on how to handle such equipment (EPIRBs and MF/HF DSC) in order to avoid misactivation, including seafarers, operators, shipyards (both for building and recycling), inspectors, surveyors and manufacturers. ~~Manufacturers should be made aware of the problem, perhaps through a circular recommending that they seek to reduce the susceptibility of their equipment to generating false alerts. Note resolution A.814(19) on *Guidelines for the avoidance of false distress alerts*. Reduction of false alerts caused by human error should be addressed. For example, proper disposal of EPIRBs should be emphasized, including removal of the battery. Measures should be taken to guide/educate people on how to handle such equipment in order to avoid misactivation, including seafarers, operators, shipyards (both for building and recycling), inspectors and surveyors.~~ (Detailed review paragraph 17.22)

~~36~~52 Action required: No specific new actions have been identified. Resolution A.814(19) on *Guidelines for the avoidance of false distress alerts* should continue to be implemented.

Mariner training

~~37~~53 Mariner training will be affected and amendments to STCW including Model Courses may be required. Model Courses will in general need to be revised to reflect the new Sea Area A3 definition and its effect on Sea Area A4, together with other amendments to SOLAS Chapter IV. Mariner training will be affected and amendments to STCW may be required. (Detailed review paragraph 17.26)

~~38~~54 Action required: (See timeline at paragraph 64)

~~38.1~~54.1 Model courses need to be revised in accordance with GMDSS Modernization revisions under existing HTW work item on validated model training courses.

Shore based personnel training

XX Shore based personnel training and operational requirements will be affected and amendments to the Radio Regulations, IAMSAR manual COMSAR Circ. 33 "GMDSS coast station operators certificates (CSOC) Model Course" may be required. Model Courses will in general need to be revised to reflect effects of the modernized GMDSS.

XX Action required:
To finalize the model course in IMO.

Obsolete provisions

~~39~~55 Narrow-band direct-printing (NBDP) telegraph equipment can be removed as a required system, although existing devices can be permitted to remain in use to receive MSI, if a ship is not equipped with other equipment suitable for the purpose. MSI can be displayed on other bridge systems, including integrated navigation systems (INS). (Detailed review paragraph 17.7)

~~40~~56 The VHF EPIRB should be removed from SOLAS Chapter IV, and resolution A.805(19) revoked. (Detailed review paragraph 17.16)

~~41~~57 Remove the regulation IV/18 exemption for communication equipment from automatically receiving the ship's position if the ship is not provided with a navigation receiver. (Detailed review para. 17.19)

~~42~~58 Revise regulation IV/12.3 to reflect the decision to retain the VHF Channel 16 watch, as well as continuous listening watches is also in some areas for general communications including VTS, Maritime Assistance Service, coastal surveillance, ship reporting, port approaches etc. resolution MSC.131(75) should be revised to reflect the correct Channel 16 listening watch requirement. (Detailed review paragraph 17.18)

~~43~~59 Action required: (See timeline at paragraph 64)

~~43.1~~59.1 Make appropriate revisions to SOLAS Chapter IV to eliminate obsolete provisions.

Clarifications

~~44~~60 Regulation IV/6.2.5 should be revised to clarify the "other codes" required to be clearly marked on the radio installation. (Detailed review paragraph 17.15)

~~45~~61 Revise and simplify regulations, such as IV/9.1.2, to reflect that separate DSC watch receivers are no longer common and modern equipment practice integrates the radio functions into a single installation. (Detailed review paragraph 17.17)

~~46~~62 Review SOLAS Chapter IV for editorial improvements.

~~47~~63 Action required: (See timeline at paragraph 64)

~~47.1~~63.1 Make appropriate clarifications to SOLAS Chapter IV.

Timeline

4864 The following timeline reflects the required actions identified in the preceding discussion.

Coordinated Timeline and Planned Outputs for the IMO GMDSS Modernization Project				
Y	**Q**	**Meeting**	**Output**	**Year Deliverable**
2018	1	HTW 5		New output proposals for SOLAS Chapters III and IV, and relevant instruments New output proposal for GMDSS satellite related instruments New output proposal for revisions related to MEOSAR system
	1	NCSR 5	Begin GMDSS Master Plan update and new satellite MSI manual(s). Prepare new output proposals on: - ~~Future SART type~~ - Update MSC/Circ.1039 - Future role of HF communications. - Revise resolutions A.806(19) and MSC.68(68), annex 3, to include a requirement for frequency scanning and/or ALE - SOLAS Chapter IV revisions, including relocation of GMDSS systems from Chapter III - Obsolete provisions and clarifications Performance standards for NAVDAT Prepare new output proposal for resolutions A.707(17), A.801(19), A.1001(25) and MSC.1/Circ.1414. Also include editorial revisions to resolution A.1051(27), MSC.1/Circ.1403, and MSC.1/Circ.1287/Rev.1 to update terminology without substantive changes. Prepare new output proposal for revisions related to Cospas-Sarsat MEOSAR system	
	2	MSC 99	Approve new output proposals	
	3	EG 14	Make preliminary recommendations on approved new outputs.	
2019	1	HTW 6		GMDSS Master Plan Satellite MSI manual(s) Res. A.707(17) Res. A.801(19) Res. A.1001(25) MSC.1/Circ.1414 Editorially revised resolutions and circulars.
	1	NCSR 6	Complete GMDSS Master Plan update and new satellite MSI manual(s). Complete revisions to resolutions A.707(17), A.801(19), A.1001(25), and MSC.1/Circ.1414 as well as satellite-related editorial revisions to resolution A.1051(27), MSC.1/Circ.1403, and MSC.1/Circ.1287/Rev.1.	
	2	MSC 101	Approve revised GMDSS Master Plan and satellite MSI manual(s) Approve revisions to resolution A.707(17), and resolution A.801(19), as well as satellite-related editorial revisions to resolution A.1051(27), MSC.1/Circ.1403 and MSC.1/Circ.1287/Rev.1.	
	3	EG 15	Make preliminary recommendations on new output proposals for NCSR 7	

2020	1	HTW 7	Begin revision of Model Courses affected by GMDSS revisions	
	1	NCSR 7		
	2	MSC 102	Approve new output proposals	
	3	EG 16	Make recommendations for NCSR 8	
2021	1	HTW 8	Continue work on Model Course revisions	New and revised resolutions and circulars Revisions to SOLAS Chapters III and IV
	1	NCSR 8	Complete: - ~~Future SART type~~ - Update MSC/Circ.1039 - Future role of HF communications. - Revise resolutions A.806(19) and MSC.68(68), annex 3, to include a requirement for frequency scanning and/or ALE - SOLAS Chapter IV revisions, including relocation of GMDSS systems from Chapter III - Obsolete provisions and clarifications	
	2	MSC 104	Approve revisions developed by HTW 8 and NCSR 8	
	3	EG 17		
2022	1	HTW 9	Complete Model Course revisions related to GMDSS Modernization	Model Course revisions Confirm SOLAS revisions
	1	NCSR 9		
	2	MSC 105	Confirm adoption of SOLAS Chapter III and IV amendments	
	3	EG 18		
2023	1	HTW 10		
	1	NCSR 10		
	2	MSC 107		
	3	EG 19		
2024	1	HTW 11		SOLAS revisions in force
	1	NCSR 11		
	2	MSC 108		
	3	EG 20		

Appendix 4

PRELIMINARY DRAFT IMO POSITION ON WRC-19 AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES

Note: This document contains the Preliminary draft IMO Position, as initially developed by the Joint IMO/ITU Experts Group on maritime radiocommunication matters, at its meeting held from 11 to 15 July 2016. It should be noted that this document is meant to be a Preliminary draft which needs to be further considered by the NCSR Sub-Committee.

General

Over 90% of world trade is transported by sea. This totals some 7.5 billion tonnes (32,000 billion tonne miles), of which about 33% is oil, 27% is bulk (ore, coal, grain and phosphates), the remaining 40% 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 1.2 million seafarers.

Agenda item 1.3

1.3 to consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, in accordance with Resolution **766 (WRC-15)**;

Background

Part of the frequency band 460-470 MHz is used by maritime mobile service for on-board communication stations in accordance with RR 5.287. The functions of these type of on-board communication include anchoring, berthing, damage control parties, security patrols, terrorism threats, fire-fighter communication etc. The use of this frequency band is considered very important for maritime community.

Action to be taken:

TBD

Preliminary draft IMO position

Protection of the existing maritime mobile service used for on-board communication stations to which the frequency band is already allocated in primary basis should be ensured, and no additional constraints should be imposed.

Agenda item 1.5

1.5 to consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution **158 (WRC15)**;

Background

Currently, there is a growing need for global broadband satellite communications by the maritime community and some of this need can be met by allowing earth stations in motion to communicate with space stations of the FSS operating in the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space).

Action to be taken:

TBD

Preliminary draft IMO position

Support the study of this agenda item, recognizing the growing need for global broadband satellite communications in motion by the maritime community.

Agenda item 1.7

1.7 to study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations, in accordance with Resolution **659 (WRC 15)**;

Background

Resolution **659 (WRC-15)** invites ITU-R to consider possible new allocations or an upgrade of the existing allocations to the space operation service within the frequency ranges 150.05-174 MHz and 400.15-420 MHz. In the parts of the frequency band 150.05-174 MHz priority is given to the maritime mobile service in accordance with RR 5.226 (see also RR Articles 31 and 52, and RR Appendix 18). The provision of RR 5.266 specifies the use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radio beacons (see also Article 31).

The following frequency bands within 150.05-174 MHz and 400.15-420 MHz are listed in Appendix 15 as frequencies for distress and safety communications for the Global Maritime Distress and Safety System (GMDSS), in which any emission causing harmful interference is prohibited:

- 156.2975 MHz - 156.3125 MHz (AP18 CH06): be used for communication between ship stations and aircraft stations engaged in coordinated search and rescue operations. It may also be used by aircraft stations to communicate with ship stations for other safety purposes ;

- 156.5125MHz - 156.5275 MHz (AP18 CH70): be exclusively used in the maritime mobile service for distress and safety calls using digital selective calling;

- 156.6475MHz - 156.6625 MHz (AP18 CH13): be used for ship-to-ship communications relating to the safety of navigation;

- 156.7875 MHz - 156.8125 MHz (AP18 CH16): be used for distress and safety communications by radiotelephony. Additionally, the frequency 156.8 MHz may be used by aircraft stations for safety purposes only;

- 161.9625 MHz - 161.9875MHz (AP18 AIS 1) and 162.0125 MHz - 162.0375 MHz (AP18 AIS 2): be used for AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations;

- 406.000 MHz - 406.100 MHz: be used exclusively by satellite emergency position indicating radio beacons in the Earth-to-space direction.

Action to be taken:

TBD

Preliminary draft IMO position

The integrity of GMDSS should be protected, and the following frequency bands should not be included in the study:

- 156.000 MHz -157.450 MHz, 160.600 -160.975 MHz and 161.475-162.050 MHz; and

- 405.900 MHz -406.200MHz.

Taking account of the relevance on the frequency bands with agenda items 1.9.1 and 1.9.2 the coordination with these agenda items need to be considered.

Agenda item 1.8

1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359 (Rev.WRC-15)**;

Background

IMO is in the process of GMDSS modernization. The detailed review of GMDSS shows that the use of some existing service is declining. Meanwhile, some new technologies are considered to be possibly introduced in the Modernized GMDSS, such as Cospas-Sarsat MEOSAR system and MF/HF NAVDAT.

In addition, an application to recognize and use the Iridium mobile-satellite system in the GMDSS is being considered by the Organization. The International Mobile Satellite Organization (IMSO) has conducted the technical and operational assessment to the Iridium system, in accordance with Resolution A.1001(25), and submitted the report to the Organization. The Maritime Safety Committee endorsed the view of the NCSR Sub Committee, which had considered IMSO's report, that Iridium could be incorporated into the GMDSS subject to compliance with outstanding issues, as set out in annex 1 to document NCSR 3/WP.5, with the understanding that the Sub-Committee, based on the evaluation reports from IMSO, would advise the Committee in future on recognition, when the issues identified have been complied with (MSC 96/25, paragraph 14.7).

Action to be taken:

IMO has to actively participate in the technical and regulatory studies of this agenda item in accordance with Resolution **359 (Rev.WRC-15)**.

Preliminary draft IMO position

1. No substantive position has been developed with regard to GMDSS Modernization, awaiting the finalisation and approval of the Modernization Plan;

2. IMO invites ITU to take the appropriate regulatory measures to ensure full protection and availability of the frequency bands to be used by new recognised GMDSS satellite service providers for the provision of GMDSS services; and

3. IMO further invites ITU to resolve any issues under Resolution **359 (Rev.WRC-15)**, in relation to the future operation of newly recognised GMDSS satellite service providers.

Agenda item 1.9.1

1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**;

Background

There are some types of autonomous maritime radio devices using automatic identification system (AIS) technology or digital selective calling (DSC) technology, or transmitting synthetic voice messages, or with a combination of those technologies, which have been developed for, and are operating in, the maritime environment, and their number is expected to increase. Some of these devices are not related to the safety of navigation or the purpose of communication between coast stations and ship stations, or between ship stations, or between associated on-board communication stations, or survival craft stations and emergency position-indicating radio beacon stations, but occupying the spectrum and identities of the maritime mobile service. There is a need to categorize and regulate the usage of autonomous maritime radio devices.

Action to be taken:

To monitor the progress of the ongoing studies dealing with the establishment of the preliminary draft new report ITU-R M.[AMRD].

Preliminary draft IMO position

1. The integrity of AIS and the Global Maritime Distress and Safety System (GMDSS) should be protected;

2. autonomous maritime radio devices which are related to the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service; and

3. for autonomous maritime radio devices which are not related to the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well maritime safety. An additional spectrum allocation within the frequency band 156-162.05 MHz and a new numbering scheme which is different from those in the existing maritime mobile service should be considered.

Agenda item 1.9.2

1.9.2 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)**;

Background

The initial concept of VDES includes the function of AIS, ASM, VDE terrestrial component and VDE satellite component. The VDES is one of the potential elements of e-navigation.

Insufficient study on sharing and compatibility between the VDE satellite component and incumbent services in the same and adjacent frequency bands was the cause that the spectrum issue could not be resolved at WRC-15. As a consequence, VDES is still not a complete functional system as a whole.

The study of the candidate frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz would mainly concern the relationship with the existing services primarily allocated for the land mobile service and maritime mobile service, and with the services within lower adjacent frequency band from 154 MHz to 156 MHz and for the higher adjacent frequency band from 162 MHz to 164MHz.

Action to be taken:

TBD

Preliminary draft IMO position

1. Recognizing that the VDES satellite component should not bring any harmful interference:

   .1 modifications should not be required to existing AIS equipment on board existing vessels; and

   .2 an identification of the frequncies for the VDES satellite component should protect the integrity of the original operational purpose of AIS on the existing AIS frequencies.

2. IMO supports the VDES concept, without committing the Organization regarding future requirements on the use of the VHF frequency band.

Agenda item 1.10

1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**;

Background

The Global Aeronautical Distress and Safety System (GADSS) is intended to address the timely identification and location of an aircraft during all phases of flight as well as distress and emergency situations; and also intended to use existing and new applications to support search and rescue (SAR) and flight data retrieval. The full concept of GADSS is still to be defined by the International Civil Aviation Organization (ICAO), and some of the applications may be developed after 2019. The spectrum needs is not yet identified.

Action to be taken:

Monitor the progress of the studies on this agenda item.

Preliminary draft IMO position

TBD

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 Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in Annex 1 to Resolution **27 (Rev.WRC-12)**;

Background

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

Preliminary draft IMO position

IMO has studied the Recommendations of relevance and commented on each as given in Annex 1. 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, and to IMO performance standards. 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-07)**, to review the Resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

Background

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

Preliminary 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;

9.1 on the activities of the Radiocommunication Sector since WRC 15;

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and

9.3 on action in response to Resolution **80 (Rev.WRC-07)**;

Issue 9.1.3:

Study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3700-4200 MHz, 4500-4800 MHz, 5925-6425 MHz and 6725-7025 MHz frequency bands allocated to the fixed-satellite service.

Background

It is noted that the frequency band 6 424- 6 454 MHz is in use for the feeder links of Inmarsat.

Action to be taken:

TBD

Preliminary draft IMO position

Non-GSO systems shall not cause harmful interference to or claim protection from GSO FSS networks.

Agenda item 10

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with Article 7 of the Convention.

Background

Resolution 810 (WRC-15) containing the preliminary agenda for WRC-23, lists as item 2.1 for inclusion in the agenda for WRC-23, to consider possible spectrum needs and regulatory actions to support Global Maritime Distress and Safety System

(GMDSS) modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**.

IMO is in the process of implementing the first phase of e-navigation, which is expected to take place in the period 2016 to 2019. As a consequence of GMDSS modernization the SOLAS convention will be revised, which is preliminarily planned to be finalised by June 2022.

Action to be taken:

TBD

Preliminary 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 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.585-7

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

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

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.1174-3

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

(1995-1998- 2004-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.1638

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)

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-15)

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 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-12)

Management of the maritime mobile service identity numbering resource

Retain.

RESOLUTION 349 (REV. WRC-12)

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 (WRC-07)

ITU maritime service information registration

Retain.

RESOLUTION 359 (REV. WRC-15)

Consideration of regulatory provisions for updating and modernization of the Global Maritime Distress and Safety System

Subject of agenda item 1.8.

RESOLUTION 360 (REV. WRC-15)

Consideration of regulatory provisions and spectrum allocations to the maritime mobile-satellite service to enable the satellite component of the VHF Data Exchange System and enhanced maritime radiocommunication

Subject of agenda item 1.9.2.

RESOLUTION 361 (WRC-15)

Consideration of regulatory provisions for modernization of the Global Maritime Distress and Safety System and related to the implementation of e-navigation

In the preliminary agenda for WRC-23.

RESOLUTION 362 (WRC-15)

Autonomous maritime radio devices operating in the frequency band 156-162.05 MHz

Subject of agenda item 1.9.1.

RESOLUTION 612 (REV. WRC-12)

Use of the radiolocation service between 3 and 50 MHz to support high-frequency 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.MOB-87)

Use of ship earth stations within harbours and other waters under national jurisdiction

Retain.